# New Jersey Core Curriculum Content Standards
# for
# 21st-Century Life and Careers

## INTRODUCTION

### Life and Career Education in the 21st Century

In the 21st century, life and work are conducted in a dynamic context that includes:

- A global society facing complex political, economic, technological, and environmental challenges
- A service economy driven by information, knowledge, and innovation
- Diverse communities and workplaces that rely on cross-cultural collaborative relationships and virtual social networks
- An intensely competitive and constantly changing worldwide marketplace

Providing New Jersey students with the life and career skills needed to function optimally within this dynamic context is a critical focus and organizing principle of K-12 public education. New Jersey has both an obligation to prepare its young people to thrive in this environment, and a vested economic interest in grooming an engaged citizenry made up of productive members of a global workforce that rewards innovation, creativity, and adaptation to change.

**Mission:** *21st-century life and career skills enable students to make informed decisions that prepare them to engage as active citizens in a dynamic global society and to successfully meet the challenges and opportunities of the 21st-century global workplace.*

**Vision:** The systematic integration of 21st-century life and career skills across the K-12 curriculum and in career and technical education programs fosters a population that:

- Applies critical thinking and problem-solving skills to make reasoned decisions at home, in the workplace, and in the global community.
- Uses effective communication, communication technology, and collaboration skills to interact with cultural sensitivity in diverse communities and to work in cross-cultural teams in the multinational workplace.
- Is financially literate and financially responsible at home and in the broader community.
- Demonstrates creative and entrepreneurial thinking by recognizing and acting on promising opportunities while accepting responsibility for possible risks.
- Is knowledgeable about careers and can plan, execute, and alter career goals in response to changing societal and economic conditions.
- Produces community, business, and political leaders who demonstrate core ethical values, including the values of democracy and free enterprise, during interactions with the global community.

### Intent and Spirit of the 21st-Century Life and Career Standards

Through instruction in life and career skills, all students acquire the knowledge and skills needed to prepare for life as citizens and workers in the 21st century.

- In **Preschool,** children's social and emotional development provides the foundation for later learning about careers and life skills (http://www.nj.gov/education/ece/code/expectations/).
- In grades **K-5**, students are introduced to 21st-century life skills that are critical for personal, academic, and social development. They are also introduced to career awareness information and to basic personal financial literacy skills.
- In grades **6-8**, students continue to develop 21st-century life skills and personal financial literacy, while also exploring careers that support their academic and personal interests and aptitudes. As they prepare for the transition to high school, students are provided with opportunities to apply knowledge and skills learned in the classroom to real or simulated career challenges.

- In grades **9-12**, students develop increasingly sophisticated 21st-century life skills and personal financial literacy. They engage in the process of career preparation by participating in structured learning experiences, specialized programs, and advanced courses that reflect personal aptitudes and career interests found within one or more of the 16 career clusters developed by the States Career Clusters Initiative.

**The Revised Standards**

There are four revised 21st-Century Life and Careers standards. Standards 9.1, 9.2, and 9.3 describe life and career skills that are integrated throughout the K-12 curriculum, while Standard 9.4 describes specialized skills that are taught in grades 9-12 as part of career and technical education programs. An overview of the four standards follows.

**Standard 9.1 21st-Century Life and Career Skills:** *All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.*

Standard 9.1 describes skills that prepare students to fully engage in civic and work life. The standard includes six strands, which reflect the Framework for 21st Century Learning:

- Critical Thinking and Problem Solving
- Creativity and Innovation
- Collaboration, Teamwork, and Leadership
- Cross-Cultural Understanding and Interpersonal Communication
- Communication and Media Fluency
- Accountability, Productivity, and Ethics

**Standard 9.2 Personal Financial Literacy:** *All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.*

Standard 9.2 describes skills that prepare students for personal and civic financial literacy. The inclusion of Personal Financial Literacy as a standard, rather than as a strand, reflects the growing need for 21st-century citizens to be financially literate, particularly in light of the increasing number of financial choices they face due to the global economy. Financial literacy includes the application of knowledge, skills, and ethical values when making consumer and financial decisions that impact the self, the family, and the local and global communities.

Standard 9.2 is aligned to the Jump $tart Coalition for Personal Financial Literacy's National Standards in K-12 Personal Finance Education and includes seven strands:

- Income and Careers
- Money Management
- Credit and Debt Management
- Planning, Saving, and Investing
- Becoming a Critical Consumer
- Civic Financial Responsibility
- Risk Management and Insurance

**Standard 9.3 Career Awareness, Exploration, and Preparation:** *All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.*

Standard 9.3 describes skills that prepare students for career pursuits and lifelong learning. The three strands in Standard 9.3 reflect the requirements outlined in New Jersey Administrative Code (N.J.A.C. 6A:8-3.2):

- Career Awareness (grades K-4)
- Career Exploration (grades 5-8)
- Career Preparation (grades 9-12)

**Standard 9.4 Career and Technical Education:** *All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees.*

Standard 9.4 describes knowledge and skills that prepare students for postsecondary education, training, and employment in a chosen career pathway. Unlike Standards 9.1, 9.2, and 9.3, which apply to all students from grades K-12, Standard 9.4 applies only to high school students enrolled in career and technical education programs.

The adoption of the career and technical education standard reflects the call to action in recent reports by the National Association of State Boards of Education, the National Governors Association, the U.S. Chamber of Commerce, and Achieve regarding the potential of career and technical education, as well as the requirements of the Carl D. Perkins Career and Technical Education Improvement Act of 2006. These documents urge states to adopt policies and practices that effectively integrate academic content standards in career and technical education programs in order to both elevate the role of career and technical education and to align it with postsecondary education and training.

The 16 strands in Standard 9.4 align with the 16 career clusters of the States Career Clusters Initiative. Each strand is further refined to reflect multiple career pathways. By using the clusters as an organizing tool for grouping occupations and careers, Standard 9.4 identifies a common set of knowledge and skills for success within each broad career cluster, as well as for each career pathway within that cluster. This framework has been reviewed nationally by teams of business, industry, labor, education, and higher education representatives to ensure that it encompasses industry-validated knowledge and skills needed for career success.

For each of the 16 career cluster strands, content statements and cumulative progress indicators are provided for the overall career cluster, and additional content statements and cumulative progress indicators are provided for each of the career pathways encompassed by the cluster. Further, each of the 16 overarching career cluster strands is comprised of two types of cumulative progress indicators:

- Cumulative progress indicators for foundational knowledge and skills, which may be taught as part of a variety of academic and/or career and technical education courses.
- Cumulative progress indicators that are specific to the career cluster and/or career pathway under discussion.

Two additional resources are provided in connection with Standard 9.4 to support navigation of Standard 9.4 and understanding of career and technical education (CTE) programs:

- The Career Clusters Table describes each of the 16 career clusters and lists the career pathways associated with each cluster.
- More About CTE Programs provides a definition of career and technical education programs and points to information about the development of Standard 9.4.

**Resources**

Kendall, J. S., & Marzano, R J. (2000). *Content knowledge: A compendium of standards and benchmarks for K-12 education* (3rd ed.). Aurora, CO: Mid-Continental Research for Education and Learning, & Alexandria, VA: Association for Supervision and Curriculum Development.

New Jersey State Department of Education. (1996). *New Jersey core curriculum content standards.* Trenton, NJ: Author.

New Jersey State Department of Education. (1999). *Career education and consumer, family, and life skills framework.* Trenton, NJ: Author.

New Jersey State Department of Education. (2004). *New Jersey core curriculum content standards. Standard 9: Career education and consumer, family, and life skills*. Trenton, NJ: Author.

New Jersey State Department of Education. (2008). *Standards clarification project.* Trenton, NJ: Author. Online: http://www.nj.gov/education/aps/njscp

Wiggins, G., & McTighe, J. (2005). *Understanding by design* (expanded 2nd ed.). Alexandria, VA: Association for Curriculum and Development.

***Resources Specific to Standard 9.1 21st-Century Life and Career Skills***

Partnership for 21st Century Learning. (2009). *Framework for 21st century learning.* Online: http://www.21stcenturyskills.org

***Resources Specific to Standard 9.2 Personal Financial Literacy***

Carolan, C. A. (2007). *The ABCs of credit card finance: Essential facts for students.* Trenton, NJ: New Jersey Coalition for Financial Education. Online: http://www.njcfe.org/IFE-ABC_text.html

Jump$tart Coalition for Personal Financial Literacy. (2007). *National standards in K-12 personal finance education: With benchmarks, knowledge statements, and glossary* (3rd ed.). Online: http://www.jumpstart.org/national-standards.html

Utah State Office of Education. (2004). *General financial literacy*. Online: http://www.uen.org/core/core.do?courseNum=520802

Wisconsin Department of Public Instruction. (2006). *Wisconsin's model academic standards for personal financial literacy*. Online: http://dpi.wi.gov/standards/pdf/pfl.pdf

***Resources Specific to Standard 9.3 Career Awareness, Exploration, and Preparation***

National Career Development Guidelines. Online: http://cte.ed.gov/nationalinitiatives/gandctools.cfm?&pass_dis=1

New Jersey Department of Education. (2005). *N.J.A.C. 6A:8, Standards and assessment for student achievement*. Trenton, NJ: Author. Online: http://www.nj.gov/education/code/current/title6a/chap8.pdf

***Resources Specific to Standard 9.4 Career and Technical Education***

National Association of State Boards of Education Study Group on Promoting Excellence in Career and Technical Education. (2008). *Learning to work, working to learn: Transforming career and technical education.* Alexandria, VA: Author. Online: http://www.nasbe.org

National Governors Association Center for Best Practices. (2007). *Issue brief: Retooling career technical education.* Washington DC: Author. Online: http://www.nga.org/center

New Jersey Department of Education. (2005). *N.J.A.C. 6A:8, Standards and assessment for student achievement*. Trenton, NJ: Author. Online: http://www.nj.gov/education/code/current/title6a/chap8.pdf

New Jersey Department of Education. (2006). *N.J.A.C. 6A:19, Career and technical education programs and standards*. Trenton, NJ: Author. Online: http://www.nj.gov/education/code/current/title6a/chap19.pdf

New Jersey Department of Education. (2008). *New Jersey five-year state plan for career and technical education*. Trenton, N.J. Author.

States Career Clusters Initiative. (2008). *Career clusters framework.* Silver Spring, MD: Author. Online: http://www.careerclusters.org

States Career Clusters Initiative. (2008). *Career clusters knowledge & skill charts.* Silver Spring, MD: Author. Online: http://www.careerclusters.org/resources/web/ks.php

United States Department of Education. (2006). *Carl D. Perkins Career and Technical Education Act of 2006, Public Law 109-270*. Washington, DC: Author.

| Content Area | 21st Century Life and Career Skills |
|---|---|
| Standard | **9.1 21st CENTURY LIFE SKILLS:** All students will demonstrate creative, critical thinking, collaboration and problem solving skills to function successfully as global citizens and workers in diverse ethnic and organizational cultures. |
| Strand | A. Critical Thinking & Problem Solving |

| By the end of grade | Content | CPI # | CPI |
|---|---|---|---|
| 4 | The ability to recognize a problem and apply critical thinking and problem-solving skills to solve the problem is a lifelong skill that develops over time. | 9.1.4.A.1 | Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. |
| | | 9.1.4.A.2 | Evaluate available resources that can assist in solving problems. |
| | | 9.1.4.A.3 | Determine when the use of technology is appropriate to solve problems. |
| | | 9.1.4.A.4 | Use data accessed on the Web to inform solutions to problems and the decision-making process. |
| | | 9.1.4.A.5 | Apply critical thinking and problem-solving skills in classroom and family settings. |
| 8 | The ability to recognize a problem and apply critical thinking and problem-solving skills to solve the problem is a lifelong skill that develops over time. | 9.1.8.A.1 | Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem-solving skills. |
| | | 9.1.8.A.2 | Implement problem-solving strategies to solve a problem in school or the community. |
| | | 9.1.8.A.3 | Summarize strategies used by various organizations and agencies to solve problems that impact communities, and compare them with strategies used by similar organizations in another state or country. |

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| | | 9.1.8.A.4 | Design and implement a project management plan using one or more problem-solving strategies. |
| **12** | The ability to recognize a problem and apply critical thinking and problem-solving skills to solve the problem is a lifelong skill that develops over time. | 9.1.12.A.1 | Apply critical thinking and problem-solving strategies during structured learning experiences. |
| | | 9.1.12.A.2 | Participate in online strategy and planning sessions for course-based, school-based, or outside projects. |
| | Critical thinking and problem solving in the 21st century are enhanced by the ability to work in cross-cultural teams in face-to-face and virtual environments. | 9.1.12.A.3 | Assess how a variety of problem-solving strategies are being used to address solutions to global problems by participating in online discussions with peers from other countries. |
| | | 9.1.12.A.4 | Justify problem-solving strategies used in the development of a particular innovative product or practice in the United States and in another country. |

| Content Area | 21st Century Life and Career Skills | | |
|---|---|---|---|
| Standard | **9.1 21st CENTURY LIFE SKILLS:** All students will demonstrate creative, critical thinking, collaboration and problem solving skills to function successfully as global citizens and workers in diverse ethnic and organizational cultures. | | |
| Strand | B. Creativity and Innovation | | |
| **By the end of grade** | **Content** | **CPI #** | **CPI** |
| **4** | Brainstorming activities enhance creative and innovative thinking in individual and group goal setting and problem solving. | 9.1.4.B.1 | Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. |
| **8** | Gathering and evaluating knowledge and information from a variety of sources, including global perspectives, fosters creativity and innovative thinking. | 9.1.8.B.1 | Use multiple points of view to create alternative solutions. |
| | | 9.1.8.B.2 | Assess data gathered to solve a problem for which there are varying perspectives (e.g., cross-cultural, gender-specific, generational), and determine how the data can best be used to design multiple solutions. |
| **12** | Gathering and evaluating knowledge and information from a variety of sources, including global perspectives, fosters creativity and innovative thinking. | 9.1.12.B.1 | Present resources and data in a format that effectively communicates the meaning of the data and its implications for solving problems, using multiple perspectives. |
| | | 9.1.12.B.2 | Create and respond to a feedback loop when problem solving. |
| | | 9.1.12.B.3 | Assist in the development of innovative solutions to an onsite problem by incorporating multiple perspectives and applying effective problem-solving strategies during structured learning experiences, service learning, or volunteering. |

| Content Area | 21st Century Life and Career Skills | | |
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| Standard | **9.1 21st Century Life Skills:** All students will demonstrate creative, critical thinking, collaboration and problem solving skills to function successfully as global citizens and workers in diverse ethnic and organizational cultures. | | |
| Strand | C. Collaboration, Teamwork and Leadership | | |
| **By the end of grade** | **Content** | **CPI #** | **CPI** |
| **4** | Collaboration and teamwork enable individuals or groups to achieve common goals with greater efficiency. | 9.1.4.C.1 | Practice collaborative skills in groups, and explain how these skills assist in completing tasks in different settings (at home, in school, and during play). |
| **8** | Collaboration and teamwork enable individuals or groups to achieve common goals with greater efficiency. | 9.1.8.C.1 | Determine an individual's responsibility for personal actions and contributions to group activities. |
| | | 9.1.8.C.2 | Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects. |
| | Leadership abilities develop over time through participation in groups and/or teams that are engaged in challenging or competitive activities. | 9.1.8.C.3 | Model leadership skills during classroom and extra-curricular activities. |
| **12** | Collaboration and teamwork enable individuals or groups to achieve common goals with greater efficiency. | 9.1.12.C.1 | Enlist input from experts in the field, community members, and other stakeholders to design a service-learning activity that addresses a local, national, or worldwide need. |

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| | Leadership abilities develop over time through participation in groups and/or teams that are engaged in challenging or competitive activities. | 9.1.12.C.2 | Analyze the common traits of effective state, national, or international leaders. |
| | | 9.1.12.C.3 | Explain why some current and/or past world leaders have had a greater impact on people and society than others, regardless of their countries of origin. |
| | | 9.1.12.C.4 | Demonstrate leadership and collaborative skills when participating in online learning communities and structured learning experiences. |
| | | 9.1.12.C.5 | Assume a leadership position by guiding the thinking of peers in a direction that leads to successful completion of a challenging task or project. |

| Content Area | 21st Century Life and Career Skills | | |
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| Standard | **9.1 21st Century Life Skills:** All students will demonstrate creative, critical thinking, collaboration and problem solving skills to function successfully as global citizens and workers in diverse ethnic and organizational cultures. | | |
| Strand | D. Cross-Cultural Understanding and Interpersonal Communications | | |
| **By the end of grade** | **Content** | **CPI #** | **CPI** |
| **4** | Effective communication skills convey intended meaning to others and assist in preventing misunderstandings. | 9.1.4.D.1 | Use effective oral and written communication in face-to-face and online interactions and when presenting to an audience. |
| | | 9.1.4.D.2 | Express needs, wants, and feelings appropriately in various situations. |
| | Communication with people from different cultural backgrounds is enhanced by the understanding of different cultural perspectives. | 9.1.4.D.3 | Demonstrate an awareness of one's own culture and other cultures during interactions within and outside of the classroom. |
| **8** | Effective communication skills convey intended meaning to others and assist in preventing misunderstandings. | 9.1.8.D.1 | Employ appropriate conflict resolution strategies. |
| | | 9.1.8.D.2 | Demonstrate the ability to understand inferences. |
| | Communication with people from different cultural backgrounds is enhanced by the understanding of different cultural perspectives. | 9.1.8.D.3 | Use effective communication skills in face-to-face and online interactions with peers and adults from home and from diverse cultures. |
| | | 9.1.8.D.4 | Compare and contrast nuances in verbal and nonverbal communication in different cultures that may result in misinterpretation and misunderstanding. |

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| | | 9.1.8.D.5 | Justify the need for greater cross-cultural understanding due to globalization. |
| **12** | Communication with people from different cultural backgrounds is enhanced by the understanding of different cultural perspectives. | 9.1.12.D.1 | Interpret spoken and written communication within the appropriate cultural context. |
| | | 9.1.12.D.2 | Determine the immediate and long-term effects of cross-cultural misconceptions or misunderstandings resulting from past or current international issues or events. |
| | | 9.1.12.D.3 | Explain why the ability to communicate in another language in an appropriate cultural context is a valuable 21st-century skill. |

| Content Area | 21st Century Life and Career Skills | | |
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| Standard | **9.1 21st Century Life Skills:** All students will demonstrate creative, critical thinking, collaboration and problem solving skills to function successfully as global citizens and workers in diverse ethnic and organizational cultures. | | |
| Strand | E. Communication and Media Fluency | | |
| **By the end of grade** | **Content** | **CPI #** | **CPI** |
| **4** | Digital media are 21st-century tools used for local and global communication. | 9.1.4.E.1 | Explain how digital media are used in daily life in a variety of settings. |
| | | 9.1.4.E.2 | Demonstrate effective communication using digital media during classroom activities. |
| | | 9.1.4.E.3 | Distinguish how digital media are used by individuals, groups, and organizations for varying purposes. |
| | There are ethical and unethical uses of communication and media. | 9.1.4.E.4 | Explain why some uses of media are unethical. |
| **8** | Digital media are 21st-century tools used for local and global communication. | 9.1.8.E.1 | Explain how technology has strengthened the role of digital media in the global society. |
| | | 9.1.8.E.2 | Analyze the role of digital media in sales and marketing and in delivering cultural, political, and other societal messages. |
| | | 9.1.8.E.3 | Differentiate between explicit and implicit digital media messages, and discuss the impact on individuals, groups, and society as a whole. |
| | There are ethical and unethical uses of communication and | 9.1.8.E.4 | Determine the undesired consequences of unethical uses of media. |

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| | media. | | |
| | | 9.1.8.E.5 | Compare and contrast ways governments regulate media advertising to protect children and adults in the United States and in other countries. |
| **12** | Digital media are 21st-century tools used for local and global communication. | 9.1.12.E.1 | Create messages for different purposes and audiences with sensitivity to cultural, gender, and age diversity, using various digital media outlets. |
| | | 9.1.12.E.2 | Generate digital media campaigns in support of or opposing a current political, social, or economic issue. |
| | | 9.1.12.E.3 | Design a digital communication system to alert other countries in the event of a natural disaster. |
| | | 9.1.12.E.4 | Predict the impact of emerging media technologies on international business and globalization. |
| | There are ethical and unethical uses of communication and media. | 9.1.12.E.5 | Compare laws governing the unethical use of media in different countries. |

| Content Area | 21st Century Life and Career Skills | | |
|---|---|---|---|
| Standard | **9.1 21st Century Life Skills:** All students will demonstrate creative, critical thinking, collaboration and problem solving skills to function successfully as global citizens and workers in diverse ethnic and organizational cultures. | | |
| Strand | **F. Accountability, Productivity and Ethics** | | |
| **By the end of grade** | **Content** | **CPI #** | **CPI** |
| **4** | The nature of the 21st-century workplace has shifted, demanding greater individual accountability, productivity, and collaboration. | 9.1.4.F.1 | Explain the meaning of productivity and accountability, and describe situations in which productivity and accountability are important in the home, school, and community. |
| | | 9.1.4.F.2 | Establish and follow performance goals to guide progress in assigned areas of responsibility and accountability during classroom projects and extra-curricular activities. |
| | Ethical behaviors support human rights and dignity in all aspects of life. | 9.1.4.F.3 | Explain the importance of understanding and following rules in family, classroom, and community settings. |
| **8** | The nature of the 21st-century workplace has shifted, demanding greater individual accountability, productivity, and collaboration. | 9.1.8.F.1 | Demonstrate how productivity and accountability contribute to realizing individual or group work goals within or outside the classroom. |
| | Ethical behaviors support human rights and dignity in all aspects of life. | 9.1.8.F.2 | Explain how rules, laws, and safety practices protect individual rights in the global workplace. |
| | | 9.1.8.F.3 | Relate the use of new technologies at home, in the workplace, and in other settings to incidences of ethical and/or unethical behavior. |

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| **12** | The nature of the 21st-century workplace has shifted, demanding greater individual accountability, productivity, and collaboration. | 9.1.12.F.1 | Explain the impact of current and emerging technological advances on the demand for increased and new types of accountability and productivity in the global workplace. |
| | Ethical behaviors support human rights and dignity in all aspects of life. | 9.1.12.F.2 | Demonstrate a positive work ethic in various settings, including the classroom and during structured learning experiences. |
| | | 9.1.12.F.3 | Defend the need for intellectual property rights, workers' rights, and workplace safety regulations in the United States and abroad. |
| | | 9.1.12.F.4 | Explain the impact of computer hacking on products and services. |
| | | 9.1.12.F.5 | Formulate an opinion regarding a current workplace or societal/ethical issue based on research. |
| | | 9.1.12.F.6 | Relate scientific advances (e.g., advances in medicine) to the creation of new ethical dilemmas. |

## 9.2 Personal Financial Literacy

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| **Content Area** | **21st-Century Life and Careers** |
| **Standard** | **9.2 Personal Financial Literacy:** All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. |
| **Strand** | **A. Income and Careers** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
|---|---|---|---|
| 4 | Educational achievement, career choice, and entrepreneurial skills all play a role in achieving a desired lifestyle. | 9.2.4.A.1 | Explain the difference between a career and a job, and identify various jobs in the community and the related earnings. |
| | Income often comes from different sources, including alternative sources. | 9.2.4.A.2 | Identify potential sources of income and their limitations. |
| | Income affects spending decisions and lifestyle. | 9.2.4.A.3 | Explain how income affects spending and take-home pay. |
| | Taxes and the cost of employee benefits affect the amount of disposable income. | 9.2.4.A.4 | Explain the meaning and purposes of taxes and tax deductions and why fees for various benefits (e.g., medical benefits) are taken out of pay. |
| 8 | Educational achievement, career choice, and entrepreneurial skills all play a role in achieving a desired lifestyle. | 9.2.8.A.1 | Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income. |
| | | 9.2.8.A.2 | Differentiate among ways that workers can improve earning power through the acquisition of new knowledge and skills. |
| | | 9.2.8.A.3 | Relate earning power to quality of life across cultures. |
| | | 9.2.8.A.4 | Relate how the demand for certain skills determines an individual's earning power. |
| | Income often comes from different sources, including alternative sources. | 9.2.8.A.5 | Explain the difference between "earned income" and "unearned income" (e.g., gifts) and why earned income is important. |
| | Income affects spending decisions | 9.2.8.A.6 | Examine how labor market trends and the cost of living |

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| | and lifestyle. | | can affect real income, spending decisions, and lifestyle. |
| | Taxes and the cost of employee benefits affect the amount of disposable income. | 9.2.8.A.7 | Explain the purpose of the payroll deduction process, taxable income, and employee benefits. |
| | | 9.2.8.A.8 | Differentiate among the types of taxes and employee benefits. |
| | | 9.2.8.A.9 | Differentiate between taxable and nontaxable income. |
| 12 | Educational achievement, career choice, and entrepreneurial skills all play a role in achieving a desired lifestyle. | 9.2.12.A.1 | Analyze the relationship between various careers and personal earning goals. |
| | | 9.2.12.A.2 | Identify a career goal and develop a plan and timetable for achieving it, including educational/training requirements, costs, and possible debt. |
| | | 9.2.12.A.3 | Analyze how the economic, social, and political conditions of a time period can affect starting a business and can affect a plan for establishing such an enterprise. |
| | | 9.2.12.A.4 | Summarize the financial risks and benefits of entrepreneurship as a career choice. |
| | | 9.2.12.A.5 | Evaluate current advances in technology that apply to a selected occupational career cluster. |
| | Income often comes from different sources, including alternative sources. | 9.2.12.A.6 | Analyze and critique various sources of income and available resources (e.g., financial assets, property, and transfer payments) and how they may substitute for earned income. |
| | | 9.2.12.A.7 | Analyze different forms of currency, how currency is used to exchange goods and services, and how it can be transferred from one person's business to another. |
| | Income affects spending decisions and lifestyle. | 9.2.12.A.8 | Analyze how personal and cultural values impact spending and other financial decisions. |
| | Taxes and the cost of employee benefits can affect the amount of disposable income. | 9.2.12.A.9 | Demonstrate how exemptions and deductions can reduce taxable income. |
| | | 9.2.12.A.10 | Explain the relationship between government programs and services and taxation. |
| | | 9.2.12.A.11 | Explain how compulsory government programs (e.g., Social Security, Medicare) provide insurance against some loss of income and benefits to eligible recipients. |

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| | | 9.2.12.A.12 | Analyze the impact of the collective bargaining process on benefits, income, and fair labor practice. |

| Content Area | 21st-Century Life and Careers |
|---|---|
| Standard | **9.2 Personal Financial Literacy:** All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. |
| Strand | B. Money Management |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
|---|---|---|---|
| 4 | Money management involves setting financial goals. | 9.2.4.B.1 | Differentiate between financial wants and needs. |
| | | 9.2.4.B.2 | Identify age-appropriate financial goals. |
| | Money management is reliant on developing and maintaining personal budgets. | 9.2.4.B.3 | Explain what a budget is and why it is important. |
| | | 9.2.4.B.4 | Identify common household expense categories and sources of income. |
| | Money management requires understanding of cash flow systems and business practices. | 9.2.4.B.5 | Identify ways to earn and save. |
| | | 9.2.4.B.6 | Distinguish among cash, check, credit card, and debit card. |
| | | 9.2.4.B.7 | Explain the purposes of financial institutions in the community. |
| 8 | Money management involves setting financial goals. | 9.2.8.B.1 | Construct a simple personal savings and spending plan based on various sources of income. |
| | | 9.2.8.B.2 | Justify the concept of “paying yourself first” as a financial savings strategy. |
| | | 9.2.8.B.3 | Relate the concept of deferred gratification to investment, meeting financial goals, and building wealth. |
| | | 9.2.8.B.4 | Analyze the effect of the economy on personal income, individual and family security, and consumer decisions. |
| | | 9.2.8.B.5 | Evaluate the relationship of cultural traditions and historical influences on financial practice. |
| | Money management is reliant on developing and maintaining personal budgets. | 9.2.8.B.6 | Construct a budget to save for long-term, short-term, and charitable goals. |
| | | 9.2.8.B.7 | Develop a system for keeping and using financial records. |
| | Money management requires understanding of cash flow | 9.2.8.B.8 | Explain the concept of cash flow and construct cash flow statements. |

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| | systems and business practices. | 9.2.8.B.9 | Create debit and credit balance sheets and income and cash statements. |
| | | 9.2.8.B.10 | Determine the most appropriate use of various financial products and services (e.g., ATM, debit cards, credit cards, checkbooks). |
| | | 9.2.8.B.11 | Justify safeguarding personal information when using credit cards, banking electronically, or filing forms. |
| | | 9.2.8.B.12 | Evaluate the appropriate financial institutions to assist with meeting various personal financial needs and goals. |
| 12 | Money management involves setting financial goals. | 9.2.12.B.1 | Prioritize financial decisions by systematically considering alternatives and possible consequences. |
| | | 9.2.12.B.2 | Compare strategies for saving and investing and the factors that influence how much should be saved or invested to meet financial goals. |
| | | 9.2.12.B.3 | Construct a plan to accumulate emergency “rainy day” funds. |
| | Money management is reliant on developing and maintaining personal budgets. | 9.2.12.B.4 | Analyze how income and spending plans are affected by age, needs, and resources. |
| | | 9.2.12.B.5 | Analyze how changes in taxes, inflation, and personal circumstances can affect a personal budget. |
| | | 9.2.12.B.6 | Design and utilize a simulated budget to monitor progress of financial plans. |
| | Money management requires understanding of cash flow systems and business practices. | 9.2.12.B.7 | Develop personal financial planning strategies that respond to and use tax deductions and shelters. |
| | | 9.2.12.B.8 | Describe and calculate interest and fees that are applied to various forms of spending, debt, and saving. |
| | | 9.2.12.B.9 | Chart and evaluate the growth of mid- and long-term investments. |
| | | 9.2.12.B.10 | Develop a plan that uses the services of various financial institutions to meet personal and family financial goals. |

| Content Area | 21st-Century Life and Careers | | |
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| Standard | **9.2 Personal Financial Literacy:** All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. | | |
| Strand | C. Credit and Debt Management | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| 4 | Credit management includes making informed choices about sources of credit and requires an understanding of the cost of credit. | 9.2.4.C.1 | Explain why people borrow money and the relationship between credit and debt. |
| | | 9.2.4.C.2 | Identify common sources of credit (e.g., banks, credit card companies) and types of credit (e.g., loans, credit cards, mortgages). |
| | | 9.2.4.C.3 | Compare and contrast credit cards and debit cards and the advantages and disadvantages of using each. |
| | | 9.2.4.C.4 | Determine the relationships among income, expenses, and interest. |
| | Credit worthiness is dependent on making informed credit decisions and managing debt responsibly. | 9.2.4.C.5 | Determine personal responsibility related to borrowing and lending. |
| | | 9.2.4.C.6 | Summarize ways to avoid credit problems. |
| 8 | Credit management includes making informed choices about sources of credit and requires an understanding of the cost of credit. | 9.2.8.C.1 | Compare and contrast the financial products and services offered by different types of financial institutions. |
| | | 9.2.8.C.2 | Compare and contrast debt and credit management strategies. |
| | | 9.2.8.C.3 | Demonstrate an understanding of the terminology associated with different types of credit (e.g., credit cards, installment loans, mortgages) and compare the interest rates associated with each. |
| | | 9.2.8.C.4 | Calculate the cost of borrowing various amounts of money using different types of credit (e.g., credit cards, installment loans, mortgages). |
| | Credit worthiness is dependent on making informed credit decisions and managing debt responsibly. | 9.2.8.C.5 | Determine ways to leverage debt beneficially. |
| | | 9.2.8.C.6 | Determine potential consequences of using “easy access” credit (e.g., using a line of credit vs. obtaining a loan for a |

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| | | | specific purpose). |
| | | 9.2.8.C.7 | Explain the meaning and possible consequences of “predatory lending practices.” |
| | | 9.2.8.C.8 | Explain the purpose of a credit score and credit record, and summarize borrowers’ credit report rights. |
| | | 9.2.8.C.9 | Summarize the causes and consequences of personal bankruptcy. |
| | | 9.2.8.C.10 | Determine when there is a need to seek credit counseling and appropriate times to utilize it. |
| 12 | Credit management includes making informed choices about sources of credit and requires an understanding of the cost of credit. | 9.2.12.C.1 | Compare and contrast the financial benefits of different products and services offered by a variety of financial institutions. |
| | | 9.2.12.C.2 | Compare and compute interest and compound interest and develop an amortization table using business tools. |
| | | 9.2.12.C.3 | Compute and assess the accumulating effect of interest paid over time when using a variety of sources of credit. |
| | | 9.2.12.C.4 | Compare and contrast the advantages and disadvantages of various types of mortgages. |
| | Credit worthiness is dependent on making informed credit decisions and managing debt responsibly. | 9.2.12.C.5 | Analyze the information contained in a credit report and explain the importance of disputing inaccurate entries. |
| | | 9.2.12.C.6 | Explain how predictive modeling determines “credit scores.” |
| | | 9.2.12.C.7 | Explain the rights and responsibilities of buyers and sellers under consumer protection laws, and discuss common unfair or deceptive business practices. |
| | | 9.2.12.C.8 | Evaluate the implications of personal and corporate bankruptcy for self and others. |

| Content Area | 21st-Century Life and Careers | | |
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| Standard | **9.2 Personal Financial Literacy:** All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. | | |
| Strand | D. Planning, Saving, and Investing | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| 4 | Information about investment options assists with financial planning. | 9.2.4.D.1 | Determine various ways to save. |
| | Appropriate application of basic economic principles leads to wiser decisions for individual, family, and business financial planning. | 9.2.4.D.2 | Explain the concept of “opportunity cost.” |
| | | 9.2.4.D.3 | Explain what it means to “invest.” |
| | | 9.2.4.D.4 | Distinguish between saving and investing. |
| 8 | Information about investment options assists with financial planning. | 9.2.8.D.1 | Determine how saving contributes to financial well-being. |
| | | 9.2.8.D.2 | Differentiate among various savings tools and how to use them most effectively. |
| | | 9.2.8.D.3 | Differentiate among various investment options. |
| | | 9.2.8.D.4 | Distinguish between income and investment growth. |
| | Appropriate application of basic economic principles leads to wiser decisions for individual, family, and business financial planning. | 9.2.8.D.5 | Explain the economic principle of supply and demand. |
| | | 9.2.8.D.6 | Relate saving and investing decisions to successful entrepreneurship. |
| | | 9.2.8.D.7 | Calculate short- and long-term returns on various investments (e.g., stocks, bonds, mutual funds, IRAs, deferred pension plans, and so on). |
| | | 9.2.8.D.8 | Assess the impact of inflation on economic decisions and lifestyles. |
| 12 | Information about investment options assists with financial planning. | 9.2.12.D.1 | Summarize how investing builds wealth and assists in meeting long- and short-term financial goals. |
| | | 9.2.12.D.2 | Assess factors that influence financial planning. |
| | | 9.2.12.D.3 | Justify the use of savings and investment options to meet targeted goals. |
| | | 9.2.12.D.4 | Analyze processes and vehicles for buying and selling |

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| | | | investments. |
| | | 9.2.12.D.5 | Compare the risk, return, and liquidity of various savings and investment alternatives. |
| | | 9.2.12.D.6 | Explain how government and independent financial services and products are used to achieve personal financial goals. |
| | Appropriate application of basic economic principles leads to wiser decisions for individual, family, and business financial planning. | 9.2.12.D.7 | Relate savings and investment results to achievement of financial goals. |
| | | 9.2.12.D.8 | Differentiate among various investment products and savings vehicles and how to use them most effectively. |
| | | 9.2.12.D.9 | Assess the role of revenue-generating assets as mechanisms for accruing and managing wealth. |
| | | 9.2.12.D.10 | Compare and contrast the past and present role of government in the financial industry and in the regulation of financial markets. |
| | | 9.2.12.D.11 | Determine the impact of various market events on stock market prices and on other savings and investments. |
| | | 9.2.12.D.12 | Evaluate how taxes affect the rate of return on savings and investments. |
| | | 9.2.12.D.13 | Analyze how savings, retirement plans, and other investment options help to shift current income for purposes of tax reporting and filing. |

| Content Area | 21st-Century Life and Careers | | |
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| Standard | **9.2 Personal Financial Literacy:** All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. | | |
| Strand | E. Becoming a Critical Consumer | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| 4 | The ability to prioritize wants and needs assists in making informed investments, purchases, and decisions. | 9.2.4.E.1 | Determine factors that influence consumer decisions related to money. |
| | Cost-benefit analysis informs responsible spending practices. | 9.2.4.E.2 | Identify ways interest rates add to the cost of goods and services. |
| | | 9.2.4.E.3 | Evaluate financial information from a variety of sources. |
| | | 9.2.4.E.4 | Apply comparison shopping skills to purchasing decisions. |
| | Consumer protection includes providing information about the range of products and services and about consumer resources, rights, and responsibilities. | 9.2.4.E.5 | Explain what it means to be a responsible consumer and the factors to consider when making consumer decisions. |
| | | 9.2.4.E.6 | Identify personal information that should not be disclosed to others and the possible consequences of doing or not doing so. |
| | | 9.2.4.E.7 | Compare and contrast product facts versus advertising claims. |
| 8 | The ability to prioritize wants and needs assists in making informed investments, purchases, and decisions. | 9.2.8.E.1 | Prioritize personal wants and needs when making purchases. |
| | Cost-benefit analysis informs responsible spending practices. | 9.2.8.E.2 | Analyze interest rates and fees associated with financial services, credit cards, debit cards, and gift cards. |
| | | 9.2.8.E.3 | Evaluate the appropriateness of different types of monetary transactions (e.g., electronic transfer, check, certified check, money order, gift card, barter) for various situations. |
| | | 9.2.8.E.4 | Compare the value of goods or services from different |

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| | | | sellers when purchasing large quantities and small quantities. |
| | | 9.2.8.E.5 | Identify the components of written and verbal contracts and the inherent responsibilities of the contracting parties. |
| | Consumer protection includes providing information about the range of products and services and about consumer resources, rights, and responsibilities. | 9.2.8.E.6 | Evaluate how fraudulent activities impact consumers, and justify the creation of consumer protection laws. |
| | | 9.2.8.E.7 | Recognize the techniques and effects of deceptive advertising. |
| 12 | The ability to prioritize wants and needs assists in making informed investments, purchases, and decisions. | 9.2.12.E.1 | Analyze and apply multiple sources of financial information when prioritizing financial decisions. |
| | | 9.2.12.E.2 | Determine how objective, accurate, and current financial information affects the prioritization of financial decisions. |
| | | 9.2.12.E.3 | Evaluate how media, bias, purpose, and validity affect the prioritization of consumer decisions and spending. |
| | Cost-benefit analysis informs responsible spending practices. | 9.2.12.E.4 | Evaluate business practices and their impact on individuals, families, and societies. |
| | | 9.2.12.E.5 | Evaluate written and verbal contracts for essential components and for obligations of the lender and borrower. |
| | Consumer protection includes providing information about the range of products and services and about consumer resources, rights, and responsibilities. | 9.2.12.E.6 | Apply consumer protection laws to the issues they address. |
| | | 9.2.12.E.7 | Relate consumer fraud, including online scams and theft of employee time and goods, to laws that protect consumers. |
| | | 9.2.12.E.8 | Determine when credit counseling is necessary and evaluate the resources available to assist consumers who wish to use it. |
| | | 9.2.12.E.9 | Determine reasons for the increase of identity theft worldwide and evaluate the extent to which victims of identity theft are successful in fully restoring their personal identities. |

| Content Area | 21st-Century Life and Careers |
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| Standard | **9.2 Personal Financial Literacy:** All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. |
| Strand | F. Civic Financial Responsibility |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
|---|---|---|---|
| 4 | The potential for building and using personal wealth includes responsibility to the broader community and an understanding of the legal rights and responsibilities of being a good citizen. | 9.2.4.F.1 | Demonstrate an understanding of individual financial obligations and community financial obligations. |
| | | 9.2.4.F.2 | Relate a country's economic system of production and consumption to building personal wealth and achieving societal responsibilities. |
| | Philanthropic, charitable, and entrepreneurial organizations play distinctly different but vitally important roles in supporting the interests of local and global communities. | 9.2.4.F.3 | Explain the roles of philanthropy, volunteer service, and charitable contributions, and analyze their impact on community development and quality of living. |
| | | 9.2.4.F.4 | Identify skills related to organizing, managing, and taking on the risks of owning a business. |
| 8 | The potential for building and using personal wealth includes responsibility to the broader community and an understanding of the legal rights and responsibilities of being a good citizen. | 9.2.8.F.1 | Explain how the economic system of production and consumption may be a means to achieve significant societal goals. |
| | | 9.2.8.F.2 | Examine the implications of legal and ethical behaviors when making financial decisions. |
| | | 9.2.8.F.3 | Relate the impact of business, government, and consumer fiscal responsibility to the economy and to personal finance. |
| | Philanthropic, charitable, and entrepreneurial organizations play distinctly different but vitally important roles in supporting the interests of local and global communities. | 9.2.8.F.4 | Calculate appropriate amounts of charitable giving based on current financial status. |
| | | 9.2.8.F.5 | Determine opportunities for micro-financing of global charities and causes. |

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| 12 | The potential for building and using personal wealth includes responsibility to the broader community and an understanding of the legal rights and responsibilities of being a good citizen. | 9.2.12.F.1 | Demonstrate an understanding of the interrelationships among attitudes, assumptions, and patterns of behavior regarding money, saving, investing, and work across cultures. |
| | | 9.2.12.F.2 | Summarize the concept and types of taxation used to fund public initiatives. |
| | | 9.2.12.F.3 | Assess the impact of emerging global economic events on financial planning. |
| | | 9.2.12.F.4 | Analyze how citizen decisions and actions can influence the use of economic resources to achieve societal goals and provide individual services. |
| | | 9.2.12.F.5 | Summarize the purpose and importance of a will. |
| | Philanthropic, charitable, and entrepreneurial organizations play distinctly different but vitally important roles in supporting the interests of local and global communities. | 9.2.12.F.6 | Compare and contrast the role of philanthropy, volunteer service, and charities in community development and quality of life in a variety of cultures. |
| | | 9.2.12.F.7 | Explain the concept and forms of taxation and justify the use of taxation to fund public activities and initiatives. |
| | | 9.2.12.F.8 | Evaluate the effects of entrepreneurship on economic stability and quality of living in local and global communities. |
| | | 9.2.12.F.9 | Assess the impact of the global economy on entrepreneurial opportunities. |

| Content Area | 21st-Century Life and Careers |
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| Standard | **9.2 Personal Financial Literacy:** All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy. |
| Strand | G. Risk Management and Insurance |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
|---|---|---|---|
| 4 | There are common financial risks and ways to manage risks. | 9.2.4.G.1 | Summarize common types of financial risks and basic risk management strategies. |
| | Insurance is designed to protect the consumer against unintended losses. | 9.2.4.G.2 | Explain the importance of protection against financial loss and reasons for risk assessment. |
| | | 9.2.4.G.3 | Describe how valuable items might be damaged or lost and ways to protect them. |
| 8 | There are common financial risks and ways to manage risks. | 9.2.8.G.1 | Compare the impact of losses associated with different types of financial risk. |
| | | 9.2.8.G.2 | Explain why it is important to develop plans for protecting current and future personal assets against loss. |
| | Insurance is designed to protect the consumer against unintended losses. | 9.2.8.G.3 | Explain the purpose and importance of health, disability, life, and consumer insurance protection. |
| | | 9.2.8.G.4 | Determine criteria for deciding the amount of insurance protection needed. |
| | | 9.2.8.G.5 | Analyze the need for and value of different types of insurance and the impact of deductibles. |
| | | 9.2.8.G.6 | Evaluate the need for different types of extended warranties. |
| 12 | There are common financial risks and ways to manage risks. | 9.2.12.G.1 | Analyze risks and benefits in various financial situations. |
| | Insurance is designed to protect the consumer against unintended losses. | 9.2.12.G.2 | Differentiate between property and liability insurance protection. |
| | | 9.2.12.G.3 | Compare the cost of various types of insurance (e.g., life, homeowners, motor vehicle) for the same product or service, given different liability limits and risk factors. |
| | | 9.2.12.G.4 | Evaluate individual and family needs for insurance |

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| | | | protection using opportunity-cost analysis. |
| | | 9.2.12.G.5 | Compare insurance policy coverage limits and related premiums and deductibles to minimize costs. |
| | | 9.2.12.G.6 | Differentiate the costs and benefits of renter's and homeowner's insurance. |
| | | 9.2.12.G.7 | Compare sources of health and disability coverage, including employee benefit plans, with options in another country. |
| | | 9.2.12.G.8 | Compare and contrast options for long-term healthcare insurance for home care and external care. |
| | | 9.2.12.G.9 | Explain how to self-insure and how to determine when self-insurance is appropriate. |
| | | 9.2.12.G.10 | Determine when and why it may be appropriate for the government to provide insurance coverage, rather than private industry. |

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| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.H.49 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |
| | | 9.4.12.H.50 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.H.51 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |
| | | 9.4.12.H.52 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |
| | | 9.4.12.H.53 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.H.54 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.H.55 | *Identify and explore careers in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.H.56 | *Examine requirements for career advancement to plan for continuing education and training.* |

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| | | 9.4.12.H.57 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.H.58 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.H.59 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.H.60 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.H.61 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |
| | | 9.4.12.H.62 | Demonstrate knowledge of technical skills required for career pathways in this cluster, including occupational safety techniques, OSHA Standard Precautions, and safety procedures designed to protect clients, co-workers, and self. |
| | | 9.4.12.H.63 | Demonstrate knowledge of technical skills required for career pathways in this cluster by obtaining related certificates, such as Cardiopulmonary Resuscitation (CPR) and First Aid. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.3 21ST Career Awareness, Exploration & Preparation:** all students will apply knowledge about and engage in the process of career awareness, exploration and preparation in order to navigate the globally competitive work environment of the information age. | | |
| **Strand** | **A. Career Awareness** | | |
| **By the end of grade** | **Content Understandings** | **CPI #** | **CPI** |
| **4** | Career awareness includes an understanding of the world of work and the knowledge and skills needed for traditional and nontraditional jobs and careers. | 9.3.4.A.1 | Identify reasons why people work and discuss how work can help a person achieve personal goals. |
| | | 9.3.4.A.2 | Identify various life roles and civic and work-related activities in the school, home, and community. |
| | | 9.3.4.A.3 | Appraise personal likes and dislikes and identify careers that might be suited to personal likes. |
| | | 9.3.4.A.4 | Identify qualifications needed to pursue traditional and nontraditional careers and occupations. |
| | | 9.3.4.A.5 | Locate career information using a variety of resources. |
| | | 9.3.4.A.6 | Explain why knowledge and skills acquired in the elementary grades lay the foundation for the future academic and career success. |

| Content Area | 21st Century Life & Career Skills | | |
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| Standard | **9.3 21ST Career Awareness, Exploration & Preparation:** All students will apply knowledge about and engage in the process of career awareness, exploration and preparation in order to navigate the globally competitive work environment of the information age. | | |
| Strand | B. Career Exploration | | |
| **By the end of grade** | **Content Understandings** | **CPI #** | **CPI** |
| **8** | Career exploration includes investigation of the contemporary workplace and an understanding of the relationships among personal abilities, education, and knowledge and skills needed to pursue 21st-century occupations and careers. | 9.3.8.B.1 | Develop a Personalized Student Learning Plan that includes information about career areas of interest with the assistance of adult mentors. |
| | | 9.3.8.B.2 | Identify common knowledge, skills, and abilities needed within the federal 16 Career Clusters. |
| | | 9.3.8.B.3 | Evaluate personal abilities, interests, and motivations and discuss how they might influence job and career selection. |
| | | 9.3.8.B.4 | Identify high school and county career and technical school courses and programs that support career or occupational areas of interest. |
| | | 9.3.8.B.5 | Use workplace readiness skills and career information learned from job shadowing, high school visits, speakers, volunteering, or other career exploration activities to assist with career exploration. |
| | | 9.3.8.B.6 | Evaluate communication, collaboration, and leadership skills and how they might be further |

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| | | | developed in preparation for a future career through involvement in school, home, work, and extracurricular activities. |
| | | 9.3.8.B.7 | Explain what is meant by “jobs” and “careers,” and examine how each tends to be distributed regionally, nationally, and globally. |
| | | 9.3.8.B.8 | Compare and contrast how traditional and nontraditional occupational roles have changed or remained the same regionally, nationally, and globally. |
| | | 9.3.8.B.9 | Inventory the requirements for entering different career areas of interest using online job information, such as the federal Occupational Information Network (O*NET) or the New Jersey State Career Development Website, and determine why those requirements are needed for success in a chosen career. |
| | | 9.3.8.B.10 | Evaluate employment trends (including job outlook and wage trends) in areas of career interest using online resources, such as the federal Occupational Information Network (O*NET) or the New Jersey State Career Development Website. |
| | | 9.3.8.B.11 | Prepare a sample résumé and cover letter as part of an application for part-time or summer employment. |
| | | 9.3.8.B.12 | Explain how personal behavior, dress, attitudes, and other choices can impact the success or failure of a job applicant. |

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| | State and federal agencies are responsible for regulating workplaces to ensure that employees are safe from harm and exploitation. | 9.3.8.B.13 | Locate information for working papers, what is required to obtain them, and who must sign them. |
| | | 9.3.8.B.14 | Use online state and federal agency resources to identify jobs that are permitted or prohibited for minors. |
| | Both employers and employees have professional, legal, and ethical responsibilities in the workplace and in the global marketplace. | 9.3.8.B.15 | Analyze a past or current local, national, or international incident that violated professional, legal, and/ or ethical responsibilities in employment settings and the impact on the employee, employees and others. |
| | There is a relationship between personal behavior and employability. | 9.3.8.B.16 | Relate academic achievement, as represented by high school diplomas, college degrees, and industry credentials, to employability and to potential level of income. |
| | | 9.3.8.B.17 | Recognize that an individual's online behavior (e.g., social networking, photo exchanges, video postings) may impact opportunities for employment or advancement. |
| | | 9.3.8.B.18 | Compare and contrast current and past employer hiring and employment practices related to substance use (e.g., tobacco, drugs, and alcohol). |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.3 21ST Career Awareness, Exploration & Preparation:** all students will apply knowledge about and engage in the process of career awareness, exploration and preparation in order to navigate the globally competitive work environment of the information age. | | |
| **Strand** | **C. Career Preparation** | | |
| **By the end of grade** | **Content Understandings** | **CPI #** | **CPI** |
| **12** | Career preparation requires purposeful planning based on research, self-knowledge, and informed choices. | 9.3.12.C.1 | Assess and modify Personalized Student Learning Plans to support declared career goals. |
| | | 9.3.12.C.2 | Characterize education and skills needed to achieve career goals, and take steps to prepare for postsecondary options, including making course selections, preparing for and taking assessments, and participating in extra-curricular activities. |
| | | 9.3.12.C.3 | Develop personal interests and activities that support declared career goals and plans. |
| | | 9.3.12.C.4 | Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest. |
| | | 9.3.12.C.5 | Identify transferable skills in career choices and design alternative career plans based on those skills. |
| | | 9.3.12.C.6 | Develop job readiness skills by participating in structured learning experiences and employment |

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| | | | seeking opportunities. |
| | | 9.3.12.C.7 | Pursue a variety of activities related to career preparation (e.g., volunteer, seek employment, and/or apply for training grants, higher education grants, and loans. |
| | | 9.3.12.C.8 | Interpret how changing economic and societal needs influence employment trends and future education. |
| | | 9.3.12.C.9 | Investigate career opportunities in the United States or abroad that involve working with people from diverse cultures and that require knowledge of other languages or cultures. |
| | | 9.3.12.C.10 | Differentiate entrepreneurship opportunities as options for career planning, and identify the knowledge, skills, abilities, and resources required for owning a business. |
| | State and federal laws and regulations require specific employment and workplace safety and health policies and procedures in order to ensure that workers are free from exploitation and to ensure a safe and healthy work environment. | 9.3.12.C.11 | Evaluate the responsibilities of employers and employees for maintaining workplace safety, and explain health rights related to a particular occupation/career. |
| | | 9.3.12.C.12 | Determine the impact of past and/or recent lawsuits and/or court decisions regarding employment laws. |
| | | 9.3.12.C.13 | Comply with workplace child labor regulations and safety and health policies during structured learning experiences. |
| | Both employers and employees | 9.3.12.C.14 | Interpret and justify written employer organizational |

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| | have professional, legal, and ethical responsibilities in the workplace and in the global marketplace. | | policies and procedures for job performance. |
| | | 9.3.12.C.15 | Propose potential solutions for current workplace ethics court cases involving multinational companies. |
| | | 9.3.12.C.16 | Determine the consequences of quality control failures in the United States and in another country based on issues reported in the media. |
| | | 9.3.12.C.17 | Analyze relationships between companies and the communities in which they are located, and explain how the presence of companies in a community may have a positive or negative impact. |
| | There is a relationship between personal behavior and employability. | 9.3.12.C.18 | Determine how an individual's driving record (e.g., tickets, points, penalties for driving while intoxicated) and/or credit score may impact opportunities for employment, job retention, or job advancement. |
| | | 9.3.12.C.19 | Compare and contrast employee substance abuse policies (e.g., tobacco, drugs, and alcohol) by industry sector. |
| | | 9.3.12.C.20 | Analyze employment trends by industry sector to determine how employment and training requirements change over time. |
| | | 9.3.12.C.21 | Determine the extent to which an individual's online behavior (e.g., social networking, photo exchanges, video postings) may impact opportunities for employment, job retention, or job advancement. |
| | | 9.3.12.C.22 | Compare and contrast New Jersey school district |

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| | | | policies with employer policies related to individual behavior and responsibilities (e.g., absenteeism and tardiness, plagiarism, harassment). |
| | | 9.3.12.C.23 | Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors. |
| | | 9.3.12.C.24 | Analyze why employers use different interview techniques. |

## STANDARD 9.4A: AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER

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| **Content Area** | **21st -Century Life & Careers** |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) |
| **Strand** | **A. Agriculture, Food & Natural Resources Career Cluster** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI)<br>*CPIs common to all 16 Career Clusters are in italics.* |
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| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12A.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12A.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12A.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12A.4 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12A.5 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.* |

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| | | 9.4.12A.6 | *Locate, organize, and reference written information from various sources to communicate with co-workers and clients/participants.* |
| | | 9.4.12A.7 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12A.8 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12A.9 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12A.10 | *Interpret verbal and nonverbal cues/behaviors to enhance communication with co-workers and clients/participants.* |
| | | 9.4.12A.11 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12A.12 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12A.13 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12A.14 | *Exhibit public relations skills in order to increase internal and external customer/client satisfaction.* |
| | | 9.4.12A.15 | Use oral and written communication skills in creating, expressing, and interpreting information and ideas including technical terminology and information related to Agriculture, Food, and |

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| | | | Natural Resources (AFNR). |
| | **Problem Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12A.16 | *Employ critical thinking skills independently and in teams to solve problems and make decisions, (e.g., analyze, synthesize, and evaluate).* |
| | | 9.4.12A.17 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12A.18 | *Identify, write, and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12A.19 | *Conduct technical research to gather information necessary for decision-making.* |
| | | 9.4.12A.20 | Access and utilize suitable resources to identify and study public policies, issues, and regulations impacting AFNR management. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12A.21 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12A.22 | *Operate electronic mail applications to communicate within a workplace.* |
| | | 9.4.12A.23 | *Operate Internet applications to perform workplace tasks.* |
| | | 9.4.12A.24 | *Operate writing and publishing applications to prepare business communications.* |
| | | 9.4.12A.25 | *Operate presentation applications to prepare presentations.* |

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| | | 9.4.12A.26 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12A.27 | *Employ database applications to manage data.* |
| | | 9.4.12A.28 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12A.29 | *Employ computer operations applications to manage work tasks.* |
| | | 9.4.12A.30 | *Use computer-based equipment, containing embedded computers or processors, to control devices.* |
| | | 9.4.12A.31 | Access, manage, integrate, and create information using information technology tools specific to AFNR in order to facilitate people, machines, and logistics. |
| | **Systems**:<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century | 9.4.12A.32 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12A.33 | *Describe and use quality control systems and practices in classrooms and/or worksites to ensure quality products and services.* |
| | | 9.4.12A.34 | Examine and summarize roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment to understand the nature and scope of AFNR organizations and the AFNR industry. |

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| | industries and careers impacts business operations. | | |
| | | 9.4.12A.35 | Identify how key organizational systems affect organizational performance and the quality of products and services to demonstrate an understanding of how AFNR systems are managed and improved. |
| | **Safety, Health, and Environmental:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12A.36 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12A.37 | *Demonstrate knowledge of employee rights and responsibilities and employers obligations to maintain workplace safety and health.* |
| | | 9.4.12A.38 | *Identify emergency procedures as necessary to provide aid in workplace accidents.* |
| | | 9.4.12A.39 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12A.40 | *Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance.* |
| | | 9.4.12A.41 | *Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance.* |
| | | 9.4.12A.42 | Demonstrate knowledge of safe and healthful working conditions and environment in the classroom and/or worksites that adhere to |

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| | | | employee rights and responsibilities and employer obligations in order to promote well-being in the AFNR workplace. |
| | | 9.4.12A.43 | Identify and assess types and sources of workplace hazards common to the AFNR industry in order to demonstrate a working understanding of key health and safety concerns. |
| | | 9.4.12A.44 | Examine and summarize importance of health, safety, and environmental management systems in AFNR organizations to express their importance to organizational performance and regulatory compliance. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12A.45 | *Employ leadership skills to accomplish classroom and/or organizational goals and objectives.* |
| | | 9.4.12A.46 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals in the classroom and/or worksite.* |
| | | 9.4.12A.47 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively in the classroom and/or worksite.* |
| | | 9.4.12A.48 | *Establish and maintain effective working relationships with classmates and/or worksite mentors and co-workers in order to accomplish objectives and tasks.* |
| | | 9.4.12A.49 | *Conduct and participate in meetings to accomplish classroom and/or worksite work tasks.* |

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| | | 9.4.12A.50 | *Employ mentoring skills to inspire and assist classmates.* |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct to positively affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12A.51 | *Apply ethical reasoning to a variety of classroom and/or worksite situations in order to make ethical decisions.* |
| | | 9.4.12A.52 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12A.53 | Demonstrate classroom and/or workplace ethics specific to AFNR occupations in order to reflect effective stewardship of resources. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities to build successful careers in a global economy. | 9.4.12A.54 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in classrooms and/or be employable in the worksite.* |
| | | 9.4.12A.55 | *Develop a personal career plan to meet career goals and objectives.* |
| | | 9.4.12A.56 | *Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.* |
| | | 9.4.12A.57 | *Maintain a career portfolio to document knowledge, skills and experience in a career field.* |
| | | 9.4.12A.58 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |

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| | | 9.4.12A.59 | *Identify and exhibit traits for retaining employment to maintain employment once secured.* |
| | | 9.4.12A.60 | *Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12A.61 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12A.62 | *Research professional development opportunities needed to keep current on relevant trends and information within the industry.* |
| | | 9.4.12A.63 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12A.64 | *Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.* |
| | | 9.4.12A.65 | Explain written organizational policies, rules, and procedures common to AFNR career cluster workplaces to ensure employees perform job functions effectively. |
| | | 9.4.12A.66 | Select, research, and examine critical aspects of career opportunities in one or more AFNR career pathways in order to gain an understanding of the breadth of career and occupations within this cluster. |

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| | **Technical Skills:** The required technologies to pursue targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster. | 9.4.12A.67 | *Employ information management techniques and strategies in the classroom and/or worksite to assist in decision-making.* |
| | | 9.4.12A.68 | *Employ planning and time management skills and tools in the classroom and/or worksite to enhance results and complete work tasks.* |
| | | 9.4.12A.69 | Demonstrate knowledge of tools, equipment, machinery, and technology to work in areas related to AFNR. |
| | | 9.4.12A.70 | Compare and contrast issues affecting the AFNR industry, including biotechnology, employment, safety, environmental and animal welfare to demonstrate an understanding of the trends and issues important to careers in this industry. |
| | | 9.4.12A.71 | Envision emerging technology and globalization and project its influence on widespread markets to demonstrate an understanding of technologies and trends that will impact the AFNR industry. |

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| **Content Area** | **21st -Century Life & Careers** |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) |
| **Strand** | **Agriculture, Food & Natural Resources** |
| **Pathway** | **9.4.A(1) Food Products and Processing Systems** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.A.(1).1 | Examine and conduct food product development and research activities that demonstrate application of food science principles to enhance product quality and appeal. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment | 9.4.12.A.(1).2 | Design procedures and plans that demonstrate application of food processing principles to manage quality control in the food product and processing industry. |

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| | impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.A.(1).3 | Plan services associated with the preservation and packaging of food and food products to prepare products for distribution. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.A.(1).4 | Identify and apply food processing, handling, and storage factors to demonstrate their potential impact on product quality and safety, including bioterrorism concerns. |

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| **Content Area** | **21st -Century Life & Careers** | | |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) | | |
| **Strand** | **Agriculture, Food & Natural Resources** | | |
| **Pathway** | **9.4.A(2) Plant Systems** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.A.(2).1 | Examine and apply knowledge of basic plant anatomy and physiology, using taxonomic and other classifications to build a working understanding of functional differences among plant structures. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.A.(2).2 | Describe and implement the principles of plant production and management in both domesticated and natural environments, applying principles of anatomy and physiology to enhance plant production. |
| | | 9.4.12.A.(2).3 | Evaluate and implement the fundamentals of production and harvesting when producing plants to demonstrate plant management and production techniques |
| | | 9.4.12.A.(2).4 | Exercise elements of design commonly used by professionals in plant systems careers by enhancing an environment (e.g., floral, forest, |

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| | | | landscape, or farm) for a variety of purposes |

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| **Content Area** | **21st -Century Life & Careers** | | |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) | | |
| **Strand** | **Agriculture, Food & Natural Resources** | | |
| **Pathway** | **9.4.A(3) Animal Systems** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.A.(3).1 | Recognize and interpret animal behaviors and execute protocols for safe handling to protect both animals and humans. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.A.(3).2 | Describe and implement the principles of animal production and management in domesticated and/or natural environments, applying knowledge of anatomy and physiology to enhance animal production. |
| | | 9.4.12.A.(3).3 | Analyze and implement proper nutrition using accepted protocols and processes to maintain animal performance. |
| | | 9.4.12.A.(3).4 | Analyze and summarize factors that influence an |

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| | | | animal's reproductive cycle to demonstrate an understanding of the species. |
| | | 9.4.12.A.(3).5 | Evaluate environmental factors affecting animal performance and implement procedures for enhancing performance to demonstrate effective application of principles to optimize performance. |

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| **Content Area** | **21st -Century Life & Careers** | | |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) | | |
| **Strand** | **Agriculture, Food & Natural Resources** | | |
| **Pathway** | **9.4.A(4) Power, Structural, and Technical Systems** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.A.(4).1 | Examine structural requirements and estimate project costs in order to facilitate effective planning for projects within this pathway. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional | 9.4.12.A.(4).2 | Plan design and construction support services to facilitate the development of agricultural machinery, equipment, buildings, structures, |

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| | ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | | and technical systems. |
| | | 9.4.12.A.(4).3 | Read and relate structural plans to specifications and building codes to facilitate building construction. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.A.(4).4 | Explain physical science principles and apply them to engineering applications involving mechanical equipment, structures, biological systems, land treatment, power utilization, and technology to facilitate work within this pathway. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.A.(4).5 | Explain principles of operation and maintenance and apply them to mechanical equipment, structures, biological systems, land treatment, power utilization, and technology to facilitate work within this pathway. |
| | | 9.4.12.A.(4).6 | Explain principles of service and repair and apply them to mechanical equipment, structures, biological systems, land treatment, power utilization, and technology in order to maintain equipment used in this pathway. |
| | | 9.4.12.A.(4).7 | Construct technical sketches, drawings, and plans using basic skills in blueprint design and development to facilitate design tasks within this pathway. |

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| | | 9.4.12.A.(4).8 | Identify a variety of technologies available to accomplish fast, accurate production in the workplaces in this pathway. |
| | | 9.4.12.A.(4).9 | Assess control systems that use available power sources to facilitate work within agricultural systems. |
| | | 9.4.12.A.(4).10 | Examine and summarize applications of geospatial technology to demonstrate a broad knowledge of technologies influencing the pathway. |

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| **Content Area** | **21st -Century Life & Careers** | | |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) | | |
| **Strand** | **Agriculture, Food & Natural Resources** | | |
| **Pathway** | **9.4.A(5) Natural Resources Systems** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.A.(5).1 | Communicate about natural resources using effective public venues to heighten awareness regarding conservation and resource preservation. |
| | | 9.4.12.A.(5).2 | Communicate about natural resource production practices and processing procedures to heighten public awareness regarding the responsible and sustainable use of natural resources. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.A.(5).3 | Apply scientific principles and processes to natural resource system problems and issues when planning natural resource management activities, to demonstrate understanding of the need, feasibility, and application of logical, reasoned solutions. |

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| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.A.(5).4 | Identify, describe, and develop system management activities in natural habitats to demonstrate recognition of the important relationship between natural resource preservation and human intervention. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.A.(5).5 | Practice responsible control and management procedures and techniques to protect or maintain natural resources in a variety of settings in this pathway. |

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| **Content Area** | **21st -Century Life & Careers** |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) |
| **Strand** | **Agriculture, Food & Natural Resources** |
| **Pathway** | **9.4.A(6) Environmental Service Systems** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.A.(6).1 | Evaluate environmental services using analytic procedures and instruments and apply scientific principles to environmental systems management activities. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers | 9.4.12.A.(6).2 | Apply scientific principles to environmental systems management activities. |
| | | 9.4.12.A.(6).3 | Identify and describe environmental service systems needed to manage a facility environment (e.g., pollution control, water treatment, wastewater treatment, solid waste management, and energy). |

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| | impacts business operations. | | |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.A.(6).4 | Examine and interpret public policies and regulations impacting environmental services to determine their effect on building operations. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.A.(6).5 | Evaluate environmental services using analytic procedures and instruments. |
| | | 9.4.12.A.(6).6 | Use surveying and drafting tools, equipment, machinery, and technology to accomplish planning and other tasks in this pathway. |

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| **Content Area** | **21st -Century Life & Careers** | | |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) | | |
| **Strand** | **Agriculture, Food & Natural Resources** | | |
| **Pathway** | **9.4.A(7) Agribusiness Systems** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.A.(7).1 | Employ leadership skills to accomplish classroom/worksite goals and objectives in an Agriculture, Food, and Natural Resources (AFNR) business environment. |
| | | 9.4.12.A.(7).2 | Demonstrate good record keeping strategies and techniques to accomplish AFNR business objectives. |

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| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.A.(7).3 | Employ leadership skills to accomplish goals and objectives common to business environments in this industry. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway | 9.4.12.A.(7).4 | Demonstrate good recordkeeping strategies and techniques to accomplish business objectives common to this industry. |
| | | 9.4.12.A.(7).5 | Appraise, select, and employ technological resources to accomplish business objectives common to this industry. |
| | | 9.4.12.A.(7).6 | Describe sales and marketing principles common to organizations in this pathway to accomplish business objectives. |

## STANDARD 9.4B: ARCHITECTURE & CONSTRUCTION CAREER CLUSTER

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| **Content Area** | **21st -Century Life & Careers** |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) |
| **Strand** | **9.4.B Architecture & Construction Career Cluster** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI)<br>*CPIs common to all 16 Career Clusters are in italics.* |
|---|---|---|---|
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12B.1 | *Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12B.2 | *Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12B.3 | *Demonstrate science knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12B.4 | Perform math operations, such as estimating and distributing materials and supplies, to complete classroom/workplace tasks. |
| | | 9.4.12B.5 | Apply principles of physics, as they relate to worksite/jobsite situations, to work with materials and load applications |

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| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information | 9.4.12B.6 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12B.7 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.* |
| | | 9.4.12B.8 | *Locate, organize, and reference written information from various sources to communicate with co-workers and clients/participants.* |
| | | 9.4.12B.9 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12B.10 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12B.11 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12B.12 | *Interpret verbal and nonverbal cues/behaviors to enhance communication with co-workers and clients/participants.* |
| | | 9.4.12B.13 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12B.14 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |

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| | | 9.4.12B.15 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12B.16 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | | 9.4.12B.17 | Use vocabulary and visual cues commonly used in design and construction to communicate successfully. |
| | **Problem Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12B.18 | *Employ critical thinking skills independently and in teams to solve problems and make decisions, (e.g., analyze, synthesize, and evaluate).* |
| | | 9.4.12B.19 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12B.20 | *Identify, write, and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12B.21 | *Conduct technical research to gather information necessary for decision-making.* |
| | | 9.4.12B.22 | Create and implement project plans to accomplish realistic planning in design and construction situations, considering available resources and requirements of a project/problem. |
| | | 9.4.12B.23 | Describe how design and construction project plans and schedules respond to unexpected events and conditions. |
| | **Information Technology** | 9.4.12B.24 | *Employ technological tools to expedite workflow.* |

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| | **Applications:** Technology is used to access, manage, integrate, and disseminate information. | | |
| | | 9.4.12B.25 | *Operate electronic mail applications to communicate within a workplace.* |
| | | 9.4.12B.26 | *Operate Internet applications to perform workplace tasks* |
| | | 9.4.12B.27 | *Operate writing and publishing applications to prepare business communications.* |
| | | 9.4.12B.28 | *Operate presentation applications to prepare presentations.* |
| | | 9.4.12B.29 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12B.30 | *Employ database applications to manage data.* |
| | | 9.4.12B.31 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12B.32 | *Employ computer operations applications to manage work tasks.* |
| | | 9.4.12B.33 | *Use computer-based equipment, containing embedded computers or processors, to control devices.* |
| | | 9.4.12B.34 | Examine comments and suggestions from customers to formulate improvements in services/products and to enhance training of staff. |

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| | **Systems**:<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12B.35 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12B.36 | *Describe and use quality control systems and practices in classrooms and/or worksites to ensure quality products and services.* |
| | | 9.4.12B.37 | Examine how roles and responsibilities among trades/professions work in concert to complete a project/job. |
| | | 9.4.12B.38 | Examine all factors affecting the project planning process. |
| | | 9.4.12B.39 | Describe union-management relationships and contracts that involve creating a cooperative work environment. |
| | **Safety, Health, and Environmental:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12B.40 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12B.41 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12B.42 | *Identify emergency procedures as necessary to provide aid in workplace accidents.* |
| | | 9.4.12B.43 | *Identify response techniques to create a disaster and/or emergency response plan.* |

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| | | 9.4.12B.44 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | | 9.4.12B.45 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |
| | | 9.4.12B.46 | Assess and describe the types and sources of hazards to ensure a safe environment. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12B.47 | *Employ leadership skills to accomplish classroom and/or organizational goals and objectives.* |
| | | 9.4.12B.48 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals in the classroom and/or worksite.* |
| | | 9.4.12B.49 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively in the classroom and/or worksite.* |
| | | 9.4.12B.50 | *Establish and maintain effective working relationships with classmates and/or worksite mentors and co-workers in order to accomplish objectives and tasks.* |
| | | 9.4.12B.51 | *Conduct and participate in meetings to accomplish classroom and/or worksite work tasks.* |
| | | 9.4.12B.52 | *Employ mentoring skills to inspire and assist classmates.* |

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| | | 9.4.12B.53 | Establish specific goals to manage project assignments in a timely manner. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct to positively affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12B.54 | *Apply ethical reasoning to a variety of classroom and/or worksite situations in order to make ethical decisions.* |
| | | 9.4.12B.55 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12B.56 | Recognize legal and ethical relationships between employees and employers to establish workplace/jobsite rules, regulations, and guidelines in a design and/or construction setting. |
| | | 9.4.12B.57 | Read regulations and contracts to ensure ethical and safety elements are observed. |
| | | 9.4.12B.58 | Identify and summarize ethical and legal standards to avoid conflicts of interest in a design and/or construction setting. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities to build successful careers in a global economy. | 9.4.12B.59 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in classrooms and/or be employable in the worksite.* |
| | | 9.4.12B.60 | *Develop a personal career plan to meet career goals and objectives.* |
| | | 9.4.12B.61 | *Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.* |

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| | | 9.4.12B.62 | *Maintain a career portfolio to document knowledge, skills and experience in a career field.* |
| | | 9.4.12B.63 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12B.64 | *Identify and exhibit traits for retaining employment to maintain employment once secured.* |
| | | 9.4.12B.65 | *Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12B.66 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12B.67 | *Research professional development opportunities needed to keep current on relevant trends and information within the industry.* |
| | | 9.4.12B.68 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12B.69 | *Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.* |
| | | 9.4.12B.70 | Explain written organizational policies, rules, and procedures that are common to this cluster and that are used to help employees perform their jobs effectively. |

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| | | 9.4.12B.71 | Recognize the responsibilities of and personal characteristics needed to succeed in careers in this cluster to develop individual goals for professionalism. |
| | **Technical Skills:** The required technologies to pursue targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster. | 9.4.12B.72 | *Employ information management techniques and strategies in the classroom and/or worksite to assist in decision-making.* |
| | | 9.4.12B.73 | *Employ planning and time management skills and tools in the classroom and/or worksite to enhance results and complete work tasks.* |
| | | 9.4.12B.74 | Read, interpret, and use technical drawings, documents, and specifications to plan a project. |
| | | 9.4.12B.75 | Use and maintain appropriate tools, machinery, equipment, and resources to accomplish project goals. |

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| **Content Area** | **21st -Century Life & Careers** |
| **Standard** | **9.4 Career and Technical Education:** All students who complete a career and technical education program will acquire academic and technical skills for careers in emerging and established professions that lead to technical skill proficiency, credentials, certificates, licenses, and/or degrees. (For descriptions of the 16 career clusters, see the Career Clusters Table.) |
| **Strand** | **9.4.B Architecture & Construction Career Cluster** |
| **Pathway** | **9.4B(1) Design/Pre-construction** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.B.(1).1 | Demonstrate communication skills and strategies that are used to work effectively with potential clients and others |
| | | 9.4.12.B.(1).2 | Employ appropriate representational media to communicate concepts and design. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services. | 9.4.12.B.(1).3 | Integrate structural, environmental, safety, building envelope, and building service systems in the design of buildings and structures. |
| | | 9.4.12.B.(1).4 | Review traditional project phases and various roles within them to plan for and implement phases within a project |

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| | • Understanding the global context of 21st-century industries and careers impacts business operations. | | |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.B.(1).5 | Evaluate and select suitable environmental impact practices to enhance project acceptance and quality. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.B.(1).6 | Appreciate the diversity of needs, values, and social patterns in project design to appropriately meet client needs. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.B.(1).7 | Identify objective construction guidelines for the accommodation of people with different physical abilities to meet accessibility requirements. |

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| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.B.(1).8 | Employ basic methods of data collection and analysis to provide information for projects. |
| | | 9.4.12.B.(1).9 | Develop technical drawings drafted by hand and computer-generated plans to design structures. |
| | | 9.4.12.B.(1).10 | Demonstrate understanding of principles, conventions, standards, applications, and restrictions pertaining to the manufacture and use of construction materials, components, and assemblies, and incorporate this understanding into project design. |
| | | 9.4.12.B.(1).11 | Apply basic organizational, spatial, structural, and constructional principles to the design of interior and exterior space so that design plans are effective. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.B Architecture & Construction Career Cluster** | | |
| **Pathway** | **9.4.B(2) Construction** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.B.(2).1 | Describe contractual relationships established among all parties involved in the building process to ensure successful build of a project. |
| | | 9.4.12.B.(2).2 | Describe submittal approval procedures that ensure effective flow of information in the construction process. |
| | | 9.4.12.B.(2).3 | Evaluate construction subcontracts and describe their relationship to construction projects. |
| | | 9.4.12.B.(2).4 | Identify project turnover procedures needed to successfully manage construction projects. |
| | | 9.4.12.B.(2).5 | Plan building in accordance with contracts to meet budget and schedule. |
| | | 9.4.12.B.(2).6 | Describe testing and inspection procedures used to ensure successful completion of construction projects. |
| | | 9.4.12.B.(2).7 | Assess the purpose for scheduling as it relates to successful completion of construction projects. |

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| | | 9.4.12.B.(2).8 | Identify closeout procedures needed to effectively complete construction projects. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.B.(2).9 | Demonstrate understanding of risk management principles and other strategies and tactics used to maintain, increase, or decrease risk. |
| | | 9.4.12.B.(2).10 | Create a jobsite safety program to ensure safe practices and procedures. |
| | | 9.4.12.B.(2).11 | Recognize and employ universal construction signs and symbols to function safely. |
| | | 9.4.12.B.(2).12 | Describe procedures for jobsite security to prevent liability. |
| | | 9.4.12.B.(2).13 | Create a classroom and/or jobsite environmental program. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.B.(2).14 | Manage relationships with teachers and classmates to successfully complete a construction project |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct | 9.4.12.B.(2).15 | Demonstrate knowledge of proper changeover procedures for successful completion of a construction project |

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| | affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | | |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.B.(2).16 | Examine building systems and components to evaluate their usefulness to construction projects. |
| | | 9.4.12.B.(2).17 | Use craft skills to meet or exceed teacher and/or employer expectations. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.B Architecture & Construction Career Cluster** | | |
| **Strand** | **9.4.B(3) Maintenance and Operations Pathway** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.A.(3).1 | Recognize and employ universal construction signs and symbols to function safely. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.A.(3).2 | Use troubleshooting procedures when solving a maintenance problem to maintain project. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.A.(3).3 | Apply construction skills when completing classroom projects and/or repairing, restoring, or renovating existing worksite structures to ensure long-term use of buildings and structures. |
| | | 9.4.12.A.(3).4 | Evaluate and assess an existing structure to |

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| | | | determine the repairs or renovations required to restore operation of the structure. |
| | | 9.4.12.A.(3).5 | Plan and practice preventive maintenance activities to service existing structures. |
| | | 9.4.12.A.(3).6 | Assess and evaluate operational systems to achieve smooth operation of facilities. |

## STANDARD 9.4C: ARTS, A/V TECHNOLOGY & COMMUNICATIONS CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **9.4.C Audio/Visual, Technology & Film Career Cluster** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI)<br>*CPIs common to all 16 Career Clusters are in italics.* |
|---|---|---|---|
| 12 | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12C.1 | *Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12C.2 | *Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12C.3 | *Demonstrate science knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information | 9.4.12C.4 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12C.5 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.* |
| | | 9.4.12C.6 | *Locate, organize, and reference written information from various sources to communicate with co-workers and clients/participants.* |

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| | | 9.4.12C.7 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12C.8 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12C.9 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12C.10 | *Interpret verbal and nonverbal cues/behaviors to enhance communication with co-workers and clients/participants.* |
| | | 9.4.12C.11 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12C.12 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12C.13 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12C.14 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | **Problem Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12C.15 | *Employ critical thinking skills independently and in teams to solve problems and make decisions, (e.g., analyze, synthesize, and evaluate).* |
| | | 9.4.12C.16 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |

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| | | 9.4.12C.17 | *Identify, write, and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12C.18 | *Conduct technical research to gather information necessary for decision-making.* |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12C.19 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12C.20 | *Operate electronic mail applications to communicate within a workplace.* |
| | | 9.4.12C.21 | *Operate Internet applications to perform workplace tasks.* |
| | | 9.4.12C.22 | *Operate writing and publishing applications to prepare business communications.* |
| | | 9.4.12C.23 | *Operate presentation applications to prepare presentations.* |
| | | 9.4.12C.24 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12C.25 | *Employ database applications to manage data.* |
| | | 9.4.12C.26 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12C.27 | *Employ computer operations applications to manage work tasks.* |

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| | | 9.4.12C.28 | *Use computer-based equipment, containing embedded computers or processors, to control devices.* |
| | **Systems**:<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12C.29 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12C.30 | *Describe and use quality control systems and practices in classrooms and/or worksites to ensure quality products and services.* |
| | | 9.4.12C.31 | Analyze and summarize the history and evolution of this industry to understand the current place the field holds within society and the economy. |
| | | 9.4.12C.32 | Examine the various organizational structures adopted by groups within this field to understand the diversity and variety of functions within the industry. |
| | | 9.4.12C.33 | Analyze the economic base of this industry to demonstrate understanding of economic factors influencing the industry as a whole. |
| | | 9.4.12C.34 | Analyze and summarize evidence of interdependence between the technical and the artistic sides of this career cluster to demonstrate understanding of the systems involved in the cluster. |
| | | 9.4.12C.35 | Analyze and summarize the formal and informal influences on the abstract and formal structures of business organizations within this cluster to demonstrate an understanding of the influences on |

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| | **Safety, Health, and Environmental:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12C.36 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12C.37 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12C.38 | *Identify emergency procedures as necessary to provide aid in workplace accidents.* |
| | | 9.4.12C.39 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12C.40 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | | 9.4.12C.41 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |
| | | 9.4.12C.42 | Maintain safe and healthful working conditions by completing work tasks in accordance with rights and responsibilities that protect employees' well-being in this cluster. |
| | | 9.4.12C.43 | Assess methods used to reduce hazards common to a range of worksites in this cluster to promote safe and accident-free work environments. |

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| | | 9.4.12C.44 | Examine and summarize the responsibilities of various entities for promoting a safe and healthy environment to demonstrate understanding of how acceptable workplace conditions are maintained in the cluster. |
| | | 9.4.12C.45 | Examine and summarize safety-related problems common to this cluster, including those that may result from working with electrical circuits, to demonstrate a broad understanding of health and safety concerns. |
| | | 9.4.12C.46 | Apply safety procedures commonly used in this cluster when operating equipment to demonstrate a broad understanding of important safety practices. |
| | | 9.4.12C.47 | Examine and summarize the lifestyle implications and physical demands of work activities in this cluster to demonstrate a broad understanding of the nature of work in the industry. |
| | | 9.4.12C.48 | Demonstrate personal habits and procedures that ensure personal safety and well-being while on work-related assignments in various locations. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of | 9.4.12C.49 | *Employ leadership skills to accomplish classroom and/or organizational goals and objectives.* |
| | | 9.4.12C.50 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals in the classroom and/or worksite.* |
| | | 9.4.12C.51 | *Employ teamwork skills to achieve collective goals* |

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| | organizational goals. | | *and use team members' talents effectively in the classroom and/or worksite.* |
| | | 9.4.12C.52 | *Establish and maintain effective working relationships with classmates and/or worksite mentors and co-workers in order to accomplish objectives and tasks.* |
| | | 9.4.12C.53 | *Conduct and participate in meetings to accomplish classroom and/or worksite work tasks.* |
| | | 9.4.12C.54 | *Employ mentoring skills to inspire and assist classmates.* |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct to positively affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12C.55 | *Apply ethical reasoning to a variety of classroom and/or worksite situations in order to make ethical decisions.* |
| | | 9.4.12C.56 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12C.57 | Exhibit ethical conduct in writing, creating, printing, broadcasting, and performing in order to uphold high standards for professional behavior in the cluster. |
| | | 9.4.12C.58 | Analyze and apply laws affecting enterprises in this cluster to maintain up-to-date compliance with key regulations affecting the industry. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities | 9.4.12C.59 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in classrooms and/or be employable in the worksite.* |

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| | to build successful careers in a global economy. | 9.4.12C.60 | *Develop a personal career plan to meet career goals and objectives.* |
| | | 9.4.12C.61 | *Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.* |
| | | 9.4.12C.62 | *Maintain a career portfolio to document knowledge, skills and experience in a career field.* |
| | | 9.4.12C.63 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12C.64 | *Identify and exhibit traits for retaining employment to maintain employment once secured.* |
| | | 9.4.12C.65 | *Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12C.66 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12C.67 | *Research professional development opportunities needed to keep current on relevant trends and information within the industry.* |
| | | 9.4.12C.68 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12C.69 | *Examine employment opportunities in entrepreneurship to consider entrepreneurship as an* |

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| | | | *option for career planning.* |
| | | 9.4.12C.70 | Explain written organizational policies, rules, and procedures that are common to this cluster and that are used to help employees perform their jobs effectively. |
| | | 9.4.12C.71 | Identify, examine, and select career opportunities in one or more pathways in this cluster in order to explore career options. |
| | **Technical Skills:** The required technologies to pursue targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster. | 9.4.12C.72 | *Employ information management techniques and strategies in the classroom and/or worksite to assist in decision-making.* |
| | | 9.4.12C.73 | *Employ planning and time management skills and tools in the classroom and/or worksite to enhance results and complete work tasks.* |
| | | 9.4.12C.74 | Demonstrate the use of technical knowledge and skills that are common to multiple pathways in this cluster to allow for mobility among related occupations. |
| | | 9.4.12C.75 | Summarize knowledge of the systems used in multiple pathways in this cluster to keep abreast of new technological advancements and tools important to work in this cluster. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.C Audio/Visual, Technology & Film Career Cluster** | | |
| **Pathway** | **9.4.C(1) Audio & Visual Technology and Film** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.C.(1).1 | Demonstrate knowledge and understanding of how technical production support can enhance audio, video, and film production systems. |
| | **Employability and Career Development:** Employability skills and career and | 9.4.12.C.(1).2 | Examine and summarize careers in this pathway to build an understanding of available opportunities. |

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| | entrepreneurship opportunities build the capacity for successful careers in a global economy. | | |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.C.(1).3 | Employ knowledge and skills related to audio production equipment to demonstrate an understanding of basic tools used in this pathway. |
| | | 9.4.12.C.(1).4 | Employ knowledge and skills related to video production equipment to demonstrate an understanding of basic tools used in this pathway. |
| | | 9.4.12.C.(1).5 | Edit audio and video productions to demonstrate basic production system skills. |
| | | 9.4.12.C.(1).6 | Design an audio-video production to acquire an understanding of the entire production process. |

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| **Content Area** | **21st Century Life &Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **C. Arts, A/V Technology, & Communications Career Cluster** | | |
| **Pathway** | **9.4.C(2) Journalism and Broadcasting** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.C.(2).1 | Demonstrate writing processes used for a range of journalism media to build a base of skills for careers in the field. |
| | | 9.4.12.C.(2).2 | Demonstrate writing processes used for broadcast media to build a base of skills for careers in the field. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and | 9.4.12.C.(2).3 | Demonstrate knowledge and understanding of how technical support can be used to enhance broadcast productions. |
| | | 9.4.12.C.(2).4 | Examine and summarize business issues related to the pathway to gain awareness of factors that |

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| | services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | | influence programming, content, and distribution in this industry |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.C.(2).5 | Examine and summarize ethical and legal issues related to the pathway to build awareness of responsible conduct of employees in this industry. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.C.(2).6 | Examine and summarize careers in this pathway to build an understanding of available opportunities. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.C.(2).7 | Demonstrate the ability to plan and deliver a broadcast production to exhibit readiness for completing key functions in the field. |

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| **Content Area** | **21st Century Life &Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **C. Arts, A/V Technology, & Communications Career Cluster** | | |
| **Pathway** | **9.4.C(3) Printing Technology** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.C.(3).1 | Demonstrate knowledge of the printing process, including customer service and sales, scheduling, and quality control, to deliver products that meet customer needs and expectations. |
| | | 9.4.12.C.(3).2 | Analyze and summarize output processes, including digital, film, directive plate-making, and cylinders, to build an understanding of delivery of printed products. |
| | | 9.4.12.C.(3).3 | Examine the finishing and distribution operations related to printing to build an understanding of how to complete the printing process. |
| | **Employability and Career Development:** Employability skills and career and | 9.4.12.C.(3).4 | Employ knowledge of basic printing processes to demonstrate readiness for careers in the pathway. |

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| | entrepreneurship opportunities build the capacity for successful careers in a global economy. | | |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.C.(3).5 | Employ processes required for the production of various printed products to build an understanding of print technologies. |
| | | 9.4.12.C.(3).6 | Demonstrate preparation of customer materials for imaging to deliver products that meet customer needs and expectations. |
| | | 9.4.12.C.(3).7 | Analyze image retrieval through refinement, page assembly processes, and typeset and trapping to build an understanding of how to prepare products for printing. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Career and Technical Education** | | |
| **Strand** | **C. Arts, A/V Technology, & Communications Career Cluster** | | |
| **Pathway** | **9.4.C(4) Printing** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **DANCE** | | |
| | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.C.(4).1 | Demonstrate an awareness of the role of dance in various cultures to build an understanding of the nature and scope of dance in society. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century | 9.4.12.C.(4).2 | Compare and contrast the roles of choreographers, dancers, and others involved in the production and presentation of dance performances to build an understanding of career opportunities in the pathway. |
| | | 9.4.12.C.(4).3 | Compare and contrast the roles of playwrights, actors, and others involved in the production and presentation of theatrical performances to build a perspective regarding individual roles involved in the pathway. |
| | | 9.4.12.C.(4).4 | Summarize and explain commercial aspects of the dramatic arts to demonstrate knowledge of the external and internal influences on the pathway |

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| | industries and careers impacts business operations. | | |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.C.(4).5 | Demonstrate basic dance movement and analyze basic skills needed for performing to build an understanding of career demands in the pathway. |
| | | 9.4.12.C.(4).6 | Demonstrate complex steps and patterns from various dance styles and traditions to convey an understanding of techniques, principles, and processes used in the pathway. |
| | | 9.4.12.C.(4).7 | Demonstrate a varied repertoire of music through vocal or instrumental performance, alone and with others, to show competence with fundamental elements used in the pathway. |
| | | 9.4.12.C.(4).8 | Apply acting technique to a range of dramatic characters and situations to build a repertoire of skills. |
| | | 9.4.12.C.(4).9 | Write stage, film, television, or electronic media scripts in a variety of traditional and current formats to demonstrate fundamental skills. |
| | | 9.4.12.C.(4).10 | Analyze and explain how specific elements of technical design (e.g., lighting, sound, costumes, make-up, etc.) each contribute to arts performances in order to build a broad understanding of the role of technical design in arts productions. |

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| | | 9.4.12.C.(4).11 | Research past and present productions and analyze the stage sets, costumes, lighting, and other technical effects that supported various performances in order to build a broad understanding of the role of technical design in arts productions. |
| | | 9.4.12.C.(4).12 | Demonstrate how technology may be used to reinforce, enhance, or alter performances to convey a broad understanding of the role of technical design in arts productions. |
| | **MUSIC** | | |
| | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.C.(4).13 | Demonstrate knowledge of music theory to convey an understanding of fundamental themes and patterns. |
| | | 9.4.12.C.(4).14 | Analyze aural examples of musical compositions representing diverse styles, cultures, and historical periods to build a broad understanding of the styles in the pathway. |
| | **THEATER AND PLAYWRITING** | | |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.C.(4).15 | Analyze the physical, emotional, and social dimensions of characters found in dramatic texts from various styles and media to acquire an understanding of key issues affecting the creation of characters |
| | **TECHNICAL DESIGN AND PRODUCTION SYSTEMS** | | |

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| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.C.(4).16 | Analyze and explain how artistic processes, organizational structure, and business principles are interrelated in the creation of arts productions to build an understanding of various influences. |
| | | 9.4.12.C.(4).17 | Analyze stage and production management to acquire a broad understanding of the role of technical design and other facets of arts productions. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Career and Technical Education** | | |
| **Strand** | **C. Arts, A/V Technology, & Communications Career Cluster** | | |
| **Pathway** | **9.4.C(5) Telecommunications Technologies** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.C.(5).1 | Employ decision-making and problem-solving techniques when completing repair and replacement procedures to convey understanding of how services are delivered within this pathway. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.C.(5).2 | Employ knowledge of telecommunications security to build an understanding of protocols involved in maintaining consumer safety. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as | 9.4.12.C.(5).3 | Demonstrate knowledge of codes and regulations that impact this pathway. |

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| | the confidence of customers, business partners, and investors. | | |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.C.(5).4 | Use industry-specific terminology, tools, and test equipment to convey understanding of how services are delivered in this pathway. |
| | | 9.4.12.C.(5).5 | Demonstrate installation techniques and processes using telecommunication tools and materials to convey understanding of how services are delivered in this pathway. |
| | | 9.4.12.C.(5).6 | Analyze schematics, diagrams, and blueprints using industry-specific vocabulary. |
| | | 9.4.12.C.(5).7 | Apply knowledge of telecommunications when providing service and solving problems for customers to maintain high quality customer relationships. |
| | | 9.4.12.C.(5).8 | Apply knowledge of network applications to demonstrate how to deliver network systems. |

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Career and Technical Education** |
| **Strand** | **C. Arts, A/V Technology, & Communications Career Cluster** |
| **Pathway** | **9.4.C(6) Visual Arts** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.C.(6).1 | Research the history of the visual arts and analyze the role of the visual arts in society to develop a broad understanding of the nature and scope of the pathway. |
| | | 9.4.12.C.(6).2 | Analyze how elements and principles are applied in a broad range of specific works of art. |
| | | 9.4.12.C.(6).3 | Explain what and how specific works of art communicate meaning and how they are used as a means to express ideas. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.C.(6).4 | Research careers and the qualifications they require to build an understanding of opportunities in the pathway |

## STANDARD 9.4D: BUSINESS, MANAGEMENT & ADMINISTRATION CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.D Business, Management & Administration Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.D.1 | *Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12.D.2 | *Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12.D.3 | *Demonstrate science knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12.D.4 | Solve mathematical problems and use the information to make business decisions and enhance business management duties. |
| | | 9.4.12.D.5 | Examine and apply business and economic principles and concepts in making informed business decisions that support continued business operations. |
| | **Communication Skills:** All clusters rely on effective oral and written communication | 9.4.12.D.6 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |

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| | strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information | | |
| | | 9.4.12.D.7 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.* |
| | | 9.4.12.D.8 | *Locate, organize, and reference written information from various sources to communicate with co-workers and clients/participants.* |
| | | 9.4.12.D.9 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.D.10 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.D.11 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.D.12 | *Interpret verbal and nonverbal cues/behaviors to enhance communication with co-workers and clients/participants.* |
| | | 9.4.12.D.13 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.D.14 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12.D.15 | *Listen to and speak with diverse individuals to enhance communication skills.* |

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| | | 9.4.12.D.16 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | **Problem Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.D.17 | *Employ critical thinking skills independently and in teams to solve problems and make decisions, (e.g., analyze, synthesize, and evaluate).* |
| | | 9.4.12.D.18 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.D.19 | *Identify, write, and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.D.20 | *Conduct technical research to gather information necessary for decision-making.* |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.D.21 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.D.22 | *Operate electronic mail applications to communicate within a workplace.* |
| | | 9.4.12.D.23 | *Operate Internet applications to perform workplace tasks.* |
| | | 9.4.12.D.24 | *Operate writing and publishing applications to prepare business communications.* |
| | | 9.4.12.D.25 | *Operate presentation applications to prepare presentations.* |
| | | 9.4.12.D.26 | *Employ spreadsheet applications to organize and manipulate data.* |

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| | | 9.4.12.D.27 | *Employ database applications to manage data.* |
| | | 9.4.12.D.28 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.D.29 | *Employ computer operations applications to manage work tasks.* |
| | | 9.4.12.D.30 | *Use computer-based equipment, containing embedded computers or processors, to control devices.* |
| | | 9.4.12.D.31 | Employ technological tools to expedite workflow. |
| | **Systems**:<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers | 9.4.12.D.32 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.D.33 | *Describe and use quality control systems and practices in classrooms and/or worksites to ensure quality products and services.* |
| | | 9.4.12.D.34 | Identify new ideas, opportunities, and methods to create or start a new project or venture |
| | | 9.4.12.D.35 | Analyze the contribution of accounting systems to the fiscal stability of businesses. |
| | | 9.4.12.D.36 | Employ tools, strategies, and systems used to maintain, monitor, control, and plan the use of financial resources. |

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| | impacts business operations. | 9.4.12.D.37 | Identify methods that businesses use to recruit, train, and develop human resources. |
| | **Safety, Health, and Environmental:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.D.38 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.D.39 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.D.40 | *Identify emergency procedures as necessary to provide aid in workplace accidents.* |
| | | 9.4.12.D.41 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.D.42 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | | 9.4.12.D.43 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the | 9.4.12.D.44 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals in the classroom and/or worksite.* |
| | | 9.4.12.D.45 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively in the classroom and/or worksite.* |

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| | accomplishment of organizational goals. | 9.4.12.D.46 | *Establish and maintain effective working relationships with classmates and/or worksite mentors and co-workers in order to accomplish objectives and tasks.* |
| | | 9.4.12.D.47 | *Conduct and participate in meetings to accomplish classroom and/or worksite work tasks.* |
| | | 9.4.12.D.48 | *Employ mentoring skills to inspire and assist classmates.* |
| | | 9.4.12.D.49 | Employ mentoring skills to assist others. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct to positively affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.D.50 | *Apply ethical reasoning to a variety of classroom and/or worksite situations in order to make ethical decisions.* |
| | | 9.4.12.D.51 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.D.52 | Describe management's responsibility to know and abide by laws and regulations that affect business operations. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities to build successful careers in a global economy. | 9.4.12.D.53 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in classrooms and/or be employable in the worksite.* |
| | | 9.4.12.D.54 | *Develop a personal career plan to meet career goals and objectives.* |
| | | 9.4.12.D.55 | *Demonstrate skills related to seeking and applying* |

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| | | | *for employment to find and obtain a desired job.* |
| | | 9.4.12.D.56 | *Maintain a career portfolio to document knowledge, skills and experience in a career field.* |
| | | 9.4.12.D.57 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.D.58 | *Identify and exhibit traits for retaining employment to maintain employment once secured.* |
| | | 9.4.12.D.59 | *Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.D.60 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.D.61 | *Research professional development opportunities needed to keep current on relevant trends and information within the industry.* |
| | | 9.4.12.D.62 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.D.63 | *Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.* |
| | | 9.4.12.D.64 | Explore, obtain, and develop strategies for ensuring a successful business career. |

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| | **Technical Skills:** The required technologies to pursue targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster. | 9.4.12.D.65 | *Employ information management techniques and strategies in the classroom and/or worksite to assist in decision-making.* |
| | | 9.4.12.D.66 | *Employ planning and time management skills and tools in the classroom and/or worksite to enhance results and complete work tasks.* |
| | | 9.4.12.D.67 | Access, process, maintain, and evaluate information that assists in business decision-making. |
| | | 9.4.12.D.68 | Plan the use of financial resources to protect solvency. |
| | | 9.4.12.D.69 | Identify tools and strategies to influence, plan, control, and organize an organization or department. |
| | | 9.4.12.D.70 | Identify and understand processes and systems used to monitor, plan, and control day-to-day business activities. |
| | | 9.4.12.D.71 | Demonstrate knowledge of the principles that facilitate high quality customer relationships. |
| | | 9.4.12.D.72 | Employ systems, strategies, and techniques used to collect, organize, analyze, and share information within an organization. |
| | | 9.4.12.D.73 | Plan, implement, monitor, and evaluate projects. |
| | | 9.4.12.D.74 | Assess strategies used in maintaining quality standards in order to ensure high quality. |

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| | | 9.4.12.D.75 | Examine and select risk management strategies and techniques in order to minimize potential business loss. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.D Business, Management & Administration Career Cluster** | | |
| **Pathway** | **9.4.D(1) Administrative Services** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.D.(1).1 | Obtain and convey ideas and information in order to conduct business transactions. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, | 9.4.12.D.(1).2 | Demonstrate knowledge of the principles of human resource development to enhance productivity and job satisfaction. |

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| | and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.D.(1).3 | Access, process, maintain, and evaluate information for projects based upon business decision-making. |
| | | 9.4.12.D.(1).4 | Demonstrate knowledge of the principles of conducting successful day-to-day business activities to sustain business functions and to prepare for unexpected events. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.D Business, Management & Administration Career Cluster** | | |
| **Pathway** | **9.4.D(2) Business Information Technology** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.D.(2).1 | Demonstrate knowledge of laws and regulations affecting business operations and transactions in order to ensure compliance with industry requirements. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and | 9.4.12.D.(2).2 | Demonstrate knowledge of the principles of effective use of financial resources. |
| | | 9.4.12.D.(2).3 | Access, process, maintain, and evaluate information for projects based upon business decision-making processes. |
| | | 9.4.12.D.(2).4 | Demonstrate knowledge of the principles of conducting successful day-to-day business activities in order to sustain business functions. |
| | | 9.4.12.D.(2).5 | Plan an organization or department with the goal of maximizing its contribution to business |

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| | services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | | success. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.D Business, Management & Administration Career Cluster** | | |
| **Pathway** | **9.4.D.(3) General Management** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.D.(3).1 | Demonstrate knowledge of economic concepts fundamental to global business operations. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.D.(3).2 | Obtain and convey ideas and information that impact projects based upon business decisions and organizational activities. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact | 9.4.12.D.(3).3 | Demonstrate knowledge of day-to-day business functions that ensure continued business operations. |
| | | 9.4.12.D.(3).4 | Plan an organization or department with the goal of optimizing overall business success. |
| | | 9.4.12.D.(3).5 | Develop strategic plans to manage business |

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| | business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | | growth, profit, and goals. |
| | | 9.4.12.D.(3).6 | Demonstrate knowledge of financial resources that protect the fiscal well-being of businesses |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.D.(3).7 | Demonstrate knowledge of techniques, strategies, and systems used by management to foster self-understanding and enhance business relationships. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.D.(3).8 | Describe management's responsibility to know and abide by laws and regulations that affect business operations and transactions. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.D Business, Management & Administration Career Cluster** | | |
| **Pathway** | **9.4.D(4) Business Financial Management & Accounting** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.D.(4).1 | Operate appropriate financial software to generate useable data. |
| | | 9.4.12.D.(4).2 | Operate electronic spreadsheet software to create formulas and reports. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.D.(4).3 | Observe policies and regulations when performing calculations for a given situation. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.D.(4).4 | Re-check computations in written documents for accuracy and quality. |
| | | 9.4.12.D.(4).5 | Calculate and enter data for a given situation on appropriate forms or reports. |

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| | | 9.4.12.D.(4).6 | Record and schedule appointments and calendars to manage functions. |
| | | 9.4.12.D.(4).7 | Organize priorities to assure deadlines will be met. |
| | | 9.4.12.D.(4).8 | Organize documents, forms, and manuals to maintain orderly flow of work. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.D Business, Management & Administration Career Cluster** | | |
| **Pathway** | **9.4.D(5) Human Resources** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.D.(5).1 | Obtain and convey ideas and information that aid projects based upon business decision-making. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.D.(5).2 | Access, process, maintain, evaluate, and disseminate information based upon business functioning to support projects. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations. | 9.4.12.D.(5).3 | Demonstrate knowledge of ways to use financial resources to ensure the financial well-being of businesses. |
| | | 9.4.12.D.(5).4 | Demonstrate knowledge of human resource management principles to enhance productivity and job satisfaction. |
| | | 9.4.12.D.(5).5 | Plan a human resource department with the goal |

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| | • Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | | of maximizing the department's contribution to business success. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.D.(5).6 | Evaluate and plan day-to-day business activities to foster a healthy and safe work environment. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.D.(5).7 | Demonstrate knowledge of strategies for motivating and supervising others to achieve completion of projects and goals. |
| | **Ethics and Legal** | 9.4.12.D.(5).8 | Explain laws and regulations affecting business |

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| | **Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | | operations and transactions in order to ensure compliance with industry requirements. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.D.(5).9 | Employ and manage the tools, techniques, and systems involved in creating, communicating, and delivering value to the public. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.D Business, Management & Administration Career Cluster** | | |
| **Pathway** | **9.4.D(6) Operations Management** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.D.(6).1 | Demonstrate knowledge of positive, ongoing customer relationship practices. |
| | | 9.4.12.D.(6).2 | Plan the use of financial resources. |
| | | 9.4.12.D.(6).3 | Plan and monitor day-to-day activities based upon maintaining and improving operational business functions. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional | 9.4.12.D.(6).4 | Demonstrate knowledge of laws and regulations affecting business operations and transactions to ensure compliance with industry requirements. |

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| | ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | | |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.D.(6).5 | Demonstrate knowledge of inventory tracking technology to facilitate operational controls |

## STANDARD 9.4E: EDUCATION & TRAINING CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.E Education & Training Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.E.1 | *Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12.E.2 | *Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12.E.3 | *Demonstrate science knowledge and skills required to pursue the full range of postsecondary education and career opportunities.* |
| | | 9.4.12.E.4 | Solve mathematical problems and use the information to make business decisions and enhance business management duties. |
| | | 9.4.12.E.5 | Demonstrate knowledge of the fundamental principles of psychology to enhance learner achievement. |
| | | 9.4.12.E.6 | Demonstrate knowledge of the fundamental |

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| | | | principles of sociology to enhance learner achievement. |
| | | 9.4.12.E.7 | Analyze knowledge of the relationships between education and society to enhance learner achievement. |
| | | 9.4.12.E.8 | Demonstrate knowledge of a variety of instructional models to enhance learner achievement. |
| | | 9.4.12.E.9 | Demonstrate knowledge of a range of assessment methods to enhance learner achievement. |
| | | 9.4.12.E.10 | Demonstrate knowledge of economic principles to enhance understanding of professional practices. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.E.11 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.E.12 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.* |
| | | 9.4.12.E.13 | *Locate, organize, and reference written information from various sources to communicate with co-workers and clients/participants.* |
| | | 9.4.12.E.14 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.E.15 | *Use correct grammar, punctuation, and terminology* |

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| | | | *to write and edit documents.* |
| | | 9.4.12.E.16 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.E.17 | *Interpret verbal and nonverbal cues/behaviors to enhance communication with co-workers and clients/participants.* |
| | | 9.4.12.E.18 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.E.19 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12.E.20 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.E.21 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | | 9.4.12.E.22 | Identify verbal communication skills that enhance learning and that strengthen stakeholder commitment to the learning organization. |
| | | 9.4.12.E.23 | Identify communication skills for interactive situations that enhance learning and that strengthen stakeholder commitment to the learning organization. |
| | | 9.4.12.E.24 | Identify writing skills that enhance learning and that strengthen stakeholder commitment to the learning |

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| | | | organization. |
| | | 9.4.12.E.25 | Identify reading strategies within content areas that enhance learner achievement. |
| | **Problem Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.E.26 | *Employ critical thinking skills independently and in teams to solve problems and make decisions, (e.g., analyze, synthesize, and evaluate).* |
| | | 9.4.12.E.27 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.E.28 | *Identify, write, and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.E.29 | *Conduct technical research to gather information necessary for decision-making.* |
| | | 9.4.12.E.30 | Model behavior that promotes learner achievement by applying problem-solving and critical thinking skills. |
| | | 9.4.12.E.31 | Evaluate educational perspectives, policies, and procedures using critical thinking to intelligently develop solutions to educational issues. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.E.32 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.E.33 | *Operate electronic mail applications to communicate within a workplace.* |
| | | 9.4.12.E.34 | *Operate Internet applications to perform workplace* |

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| | | 9.4.12.E.35 | *Operate writing and publishing applications to prepare business communications.* |
| | | 9.4.12.E.36 | *Operate presentation applications to prepare presentations.* |
| | | 9.4.12.E.37 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.E.38 | *Employ database applications to manage data.* |
| | | 9.4.12.E.39 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.E.40 | *Employ computer operations applications to manage work tasks.* |
| | | 9.4.12.E.41 | *Use computer-based equipment, containing embedded computers or processors, to control devices.* |
| | **Systems**:<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact | 9.4.12.E.42 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.E.43 | *Describe and use quality control systems and practices in classrooms and/or worksites to ensure quality products and services.* |

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| | business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.E.44 | Explain system theory and its relationship to the learning system. |
| | | 9.4.12.E.45 | Assess instructional systems that facilitate learning within educational and training settings. |
| | **Safety, Health, and Environmental:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.E.46 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.E.47 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.E.48 | *Identify emergency procedures as necessary to provide aid in workplace accidents.* |
| | | 9.4.12.E.49 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.E.50 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |

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| | | 9.4.12.E.51 | Evaluate risks to safety, health, and the environment in learning settings. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.E.52 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.E.53 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals in the classroom and/or worksite.* |
| | | 9.4.12.E.54 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively in the classroom and/or worksite.* |
| | | 9.4.12.E.55 | *Establish and maintain effective working relationships with classmates and/or worksite mentors and co-workers in order to accomplish objectives and tasks.* |
| | | 9.4.12.E.56 | *Conduct and participate in meetings to accomplish classroom and/or worksite work tasks.* |
| | | 9.4.12.E.57 | *Employ mentoring skills to inspire and assist classmates.* |
| | | 9.4.12.E.58 | Facilitate professional practice by employing project and strategic planning skills for projects. |
| | | 9.4.12.E.59 | Facilitate professional practice by employing knowledge of group processes and skills for working collaboratively. |
| | **Ethics and Legal** | 9.4.12.E.60 | *Apply ethical reasoning to a variety of classroom* |

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| | **Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct to positively affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | | *and/or worksite situations in order to make ethical decisions.* |
| | | 9.4.12.E.61 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.E.62 | Analyze and explain ethical and legal boundaries of professional practice in learning settings to enhance professionalism in education and training. |
| | | 9.4.12.E.63 | Analyze and explain legal rights that apply to stakeholders and practitioners within learning settings to enhance professionalism in education and training. |
| | | 9.4.12.E.64 | Demonstrate knowledge of ethical and legal behavior to enhance professionalism in education and training. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities to build successful careers in a global economy. | 9.4.12.E.65 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in classrooms and/or be employable in the worksite.* |
| | | 9.4.12.E.66 | *Develop a personal career plan to meet career goals and objectives.* |
| | | 9.4.12.E.67 | *Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.* |
| | | 9.4.12.E.68 | *Maintain a career portfolio to document knowledge, skills and experience in a career field.* |

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| | | 9.4.12.E.69 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.E.70 | *Identify and exhibit traits for retaining employment to maintain employment once secured.* |
| | | 9.4.12.E.71 | *Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.E.72 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.E.73 | *Research professional development opportunities needed to keep current on relevant trends and information within the industry.* |
| | | 9.4.12.E.74 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.E.75 | *Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.* |
| | | 9.4.12.E.76 | *Research state-specific licensing, certification, and credentialing requirements to practice in educational and training settings.* |
| | **Technical Skills:** The required technologies to pursue targeted careers for all | 9.4.12.E.77 | *Employ information management techniques and strategies in the classroom and/or worksite to assist in decision-making.* |

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| | pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster. | | |
| | | 9.4.12.E.78 | *Employ planning and time management skills and tools in the classroom and/or worksite to enhance results and complete work tasks.* |
| | | 9.4.12.E.79 | Assess and select instructional strategies that enhance learner achievement. |
| | | 9.4.12.E.80 | Employ organizational and logic skills to facilitate professional practice. |
| | | 9.4.12.E.81 | Conduct, interpret, and share research findings to enhance professional practice. |
| | | 9.4.12.E.82 | Employ group management skills to enhance professional practice. |
| | | 9.4.12.E.83 | Research formative and summative assessment skills needed to enhance professional practice. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.E Education & Training Career Cluster** | | |
| **Pathway** | **9.4.E(1) Professional Support Services** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Problem Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.E.(1).1 | Research the success of various resources and support services available in learning organizations and apply this understanding to enhance the learning environment. |
| | **Technical Skills:** The required technologies to pursue targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster. | 9.4.12.E.(1).2 | Evaluate strategies, techniques, and tools used to determine the needs of diverse learners. |
| | | 9.4.12.E.(1).3 | Identify and describe ways that the needs of learners can be used to enhance learner achievement. |
| | | 9.4.12.E.(1).4 | Evaluate strategies, techniques, and tools to raise awareness of the needs of diverse learners. |
| | | 9.4.12.E.(1).5 | Promote learning progress by using planning methods based on learner needs. |
| | | 9.4.12.E.(1).6 | Identify resources and support services in learning organizations to meet learner needs. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.E Education & Training Career Cluster** | | |
| **Pathway** | **9.4.E(2) Teaching and Training** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.E.(2).1 | Use fundamental knowledge of subject matter to plan/prepare effective instruction. |
| | | 9.4.12.E.(2).2 | Apply knowledge of learning and developmental theory to describe individual learners. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward | 9.4.12.E.(2).3 | Demonstrate how knowledge of learning theory can be used to establish a positive climate that promotes learning. |
| | | 9.4.12.E.(2).4 | Demonstrate how knowledge of learning theory and motivational, social, and psychological theories can be used to guide learners' personal conduct. |
| | | 9.4.12.E.(2).5 | Demonstrate how knowledge of learning theory and organizational and relationship-building skills can be used to manage instructional activities and related procedures. |
| | | 9.4.12.E.(2).6 | Demonstrate knowledge of learning theory when planning the physical elements of an educational or training setting to optimize learning. |

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| | | 9.4.12.E.(2).7 | Identify research used to improve professional knowledge and skills used in learning environments. |
| | | 9.4.12.E.(2).8 | Develop learning organizational vision by employing community-building skills and strategies. |
| | | 9.4.12.E.(2).9 | Demonstrate knowledge of strategies needed to maintain relationships with stakeholders to increase stakeholder support for learning organizations. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.E.(2).10 | Use content knowledge and instructional skills to construct standards-based educational goals. |
| | | 9.4.12.E.(2).11 | Examine and select teaching/learning theories and instructional skills to plan appropriate educational strategies. |
| | | 9.4.12.E.(2).12 | Use knowledge of content, teaching/learning, and assessment to plan appropriate assessment/evaluation strategies. |
| | | 9.4.12.E.(2).13 | Identify and locate materials/resources needed to support instructional plans. |
| | | 9.4.12.E.(2).14 | Design courses/programs to meet the needs of learners and organizations. |
| | | 9.4.12.E.(2).15 | Assess and select appropriate instructional strategies to advance learning in a learning setting. |

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| | | 9.4.12.E.(2).16 | Evaluate classroom-based learner responses to plan appropriate in-process adaptations to instructional plans and advance learner achievement. |
| | | 9.4.12.E.(2).17 | Evaluate formal assessment/evaluation tools and associated data to adjust learning plans and advance learner achievement. |
| | | 9.4.12.E.(2).18 | Evaluate examples of teaching and training performance to determine effectiveness of instructional practices. |
| | | 9.4.12.E.(2).19 | Demonstrate knowledge of recordkeeping methods used to monitor and guide learner progress. |

## STANDARD 9.4F: FINANCE CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.F Finance Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.F.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.F.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.F.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | | 9.4.12.F.4 | Solve mathematical problems to obtain information for decision-making in financial settings. |
| | | 9.4.12.F.5 | Discuss economic principles and concepts that are fundamental to financial operations. |
| | | 9.4.12.F.6 | Apply sociological knowledge of group behavior to understand financial decision-making by consumers. |
| | | 9.4.12.F.7 | Apply psychological knowledge of individual behavior to understand financial motivations of consumers. |

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| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.F.8 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.F.9 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.* |
| | | 9.4.12.F.10 | *Locate, organize, and reference written information from various sources to communicate with coworkers and clients/participants.* |
| | | 9.4.12.F.11 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.F.12 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.F.13 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.F.14 | *Interpret verbal and nonverbal cues/behaviors to enhance communication with coworkers and clients/participants.* |
| | | 9.4.12.F.15 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.F.16 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |

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| | | 9.4.12.F.17 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.F.18 | Exhibit public relations skills in order to increase internal and external customer/client satisfaction. |
| | **Problem Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.F.19 | *Employ critical thinking skills independently and in teams to solve problems and make decisions, e.g., analyze, synthesize, and evaluate.* |
| | | 9.4.12.F.20 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.F.21 | *Identify, write, and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.F.22 | *Conduct technical research to gather information necessary for decision-making.* |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.F.23 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.F.24 | *Operate electronic mail applications to communicate within a workplace.* |
| | | 9.4.12.F.25 | *Operate Internet applications to perform workplace tasks.* |
| | | 9.4.12.F.26 | *Operate writing and publishing applications to prepare business communications.* |
| | | 9.4.12.F.27 | *Operate presentation applications to prepare presentations.* |

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| | | 9.4.12.F.28 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.F.29 | *Employ database applications to manage data.* |
| | | 9.4.12.F.30 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.F.31 | *Employ computer operations applications to manage work tasks.* |
| | | 9.4.12.F.32 | *Use computer-based equipment, containing embedded computers or processors, to control devices.* |
| | **Systems**:<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century | 9.4.12.F.33 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.F.34 | *Describe and use quality control systems and practices in classrooms and/or worksites to ensure quality products and services.* |
| | | 9.4.12.F.35 | Discuss the concepts, processes, and skills used to identify new ideas, opportunities, and methods and to create or start a new finance project or venture. |
| | | 9.4.12.F.36 | Analyze the contribution of accounting systems to the fiscal stability of businesses. |
| | | 9.4.12.F.37 | Describe tools, strategies, and systems used to maintain, monitor, control, and plan the use of |

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| | industries and careers impacts business operations. | | financial resources. |
| | | 9.4.12.F.38 | Demonstrate industry-specific knowledge of human resources management to enhance productivity and job satisfaction. |
| | | 9.4.12.F.39 | Describe tools, techniques, and systems used to create, communicate, and deliver value to customers, as well as to manage customer relationships in ways that benefit both the organization and stakeholders. |
| | | 9.4.12.F.40 | Demonstrate knowledge of customer relations techniques and strategies used in this cluster to foster positive, ongoing relationships with customers. |
| | | 9.4.12.F.41 | Plan day-to-day activities to enable continued functioning of businesses in this cluster. |
| | **Safety, Health, and Environmental:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.F.42 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.F.43 | *Demonstrate knowledge of employee rights and responsibilities and employers obligations to maintain workplace safety and health.* |
| | | 9.4.12.F.44 | *Identify emergency procedures as necessary to provide aid in workplace accidents.* |
| | | 9.4.12.F.45 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.F.46 | *Explain health, safety, and environmental* |

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| | | | *management systems in organizations and their importance to organizational performance and regulatory compliance.* |
| | | 9.4.12.F.47 | *Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance.* |
| | | 9.4.12.F.48 | Demonstrate knowledge of safety, health, and environmental controls to enhance productivity in finance. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.F.49 | *Employ leadership skills to accomplish classroom and/or organizational goals and objectives.* |
| | | 9.4.12.F.50 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals in the classroom and/or worksite.* |
| | | 9.4.12.F.51 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively in the classroom and/or worksite.* |
| | | 9.4.12.F.52 | *Establish and maintain effective working relationships with classmates and/or worksite mentors and coworkers in order to accomplish objectives and tasks.* |
| | | 9.4.12.F.53 | *Conduct and participate in meetings to accomplish classroom and/or worksite work tasks.* |
| | | 9.4.12.F.54 | *Employ mentoring skills to inspire and assist classmates.* |

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| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct to positively affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.F.55 | *Apply ethical reasoning to a variety of classroom and/or worksite situations in order to make ethical decisions.* |
| | | 9.4.12.F.56 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.F.57 | Demonstrate knowledge of laws, regulations, and ethical behavior that affect finance operations and transactions. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities to build successful careers in a global economy. | 9.4.12.F.58 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in classrooms and/or be employable in the worksite.* |
| | | 9.4.12.F.59 | *Develop a personal career plan to meet career goals and objectives.* |
| | | 9.4.12.F.60 | *Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.* |
| | | 9.4.12.F.61 | *Maintain a career portfolio to document knowledge, skills and experience in a career field.* |
| | | 9.4.12.F.62 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.F.63 | *Identify and exhibit traits for retaining employment to maintain employment once secured.* |

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| | | 9.4.12.F.64 | *Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.F.65 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.F.66 | *Research professional development opportunities needed to keep current on relevant trends and information within the industry.* |
| | | 9.4.12.F.67 | *Examine licensing, certification and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.F.68 | *Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.* |
| | **Technical Skills:** The required technologies to pursue targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster. | 9.4.12.F.69 | *Employ information management techniques and strategies in the classroom and/or worksite to assist in decision-making.* |
| | | 9.4.12.F.70 | *Employ planning and time management skills and tools in the classroom and/or worksite to enhance results and complete work tasks.* |
| | | 9.4.12.F.71 | Plan the use of financial resources to protect solvency. |
| | | 9.4.12.F.72 | Plan a finance organization/department. |
| | | 9.4.12.F.73 | Plan day-to-day activities required for continued |

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| | | | business functioning. |
| | | 9.4.12.F.74 | Discuss techniques and strategies used in finance to foster positive, ongoing relationships with customers. |
| | | 9.4.12.F.75 | Access and evaluate financial information to assist business decision-making. |
| | | 9.4.12.F.76 | Evaluate a financial product or service mix in order to respond to market opportunities. |
| | | 9.4.12.F.77 | Demonstrate knowledge of financial risk-management strategies and techniques used to minimize business loss. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.F Finance Career Cluster** | | |
| **Pathway** | **9.4.12.F(1) Accounting** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.F.(1).1 | Describe laws and regulations affecting business operations and transactions in order to ensure compliance with industry requirements. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional | 9.4.12.F.(1).2 | Describe laws and regulations affecting business operations and transactions in order to ensure compliance with industry requirements. |

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| | ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | | |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.F.(1).3 | Apply career planning concepts, tools, and strategies to explore, plan, obtain, and develop a career in this pathway. |
| | | 9.4.12.F.(1).4 | Use accounting tools, strategies, and systems to plan the use and management of financial resources. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.F Finance Career Cluster** | | |
| **Pathway** | **9.4.F(2) Banking** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI).** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.F.(2).1 | Demonstrate knowledge of personalized communication strategies used in this pathway to determine client needs and wants and to develop responses intended to influence purchasing decisions and enhance future business opportunities. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and | 9.4.12.F.(2).2 | Demonstrate knowledge of customer relations strategies that promote ongoing positive relationships with banking customers and enhance organizational image. |
| | | 9.4.12.F.(2).3 | Plan the use of financial resources that enhance banking performance. |
| | | 9.4.12.F.(2).4 | Demonstrate knowledge of tools, strategies, and systems needed to operate banking equipment. |
| | | 9.4.12.F.(2).5 | Plan day-to-day activities within a banking organization to ensure secure operations. |

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| | services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | | |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.F.(2).6 | Describe laws and regulations affecting business operations and transactions in order to ensure compliance with industry requirements. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.F.(2).7 | Apply career planning concepts, tools, and strategies to explore, plan, obtain, and develop a career in this pathway. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.F Finance Career Cluster** | | |
| **Pathway** | **9.4.F(3) Business Finance** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.F.(3).1 | Plan the use of financial resources to ensure business stability. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional | 9.4.12.F.(3).2 | Describe laws and regulations affecting business operations and transactions in order to ensure compliance with industry requirements. |

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| | ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | | |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.F.(3).3 | Apply career planning concepts, tools, and strategies to explore, plan, obtain, and develop a career in this pathway. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.F.(3).4 | Demonstrate knowledge of risk-management strategies and techniques used in this industry to minimize business losses. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.F Finance Career Cluster** | | |
| **Pathway** | **9.4.F(4) Insurance** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.F.(4).1 | Demonstrate knowledge of personalized communication strategies used in this industry to determine client needs and wants and to develop responses intended to influence purchasing decisions and enhance future business opportunities. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the | 9.4.12.F.(4).2 | Access and evaluate information that assists in making decisions in this industry. |
| | | 9.4.12.F.(4).3 | Plan day-to-day activities to ensure continued functioning of businesses in this industry. |

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| | quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | | |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.F.(4).4 | Describe laws and regulations affecting business operations and transactions in order to ensure compliance with industry requirements. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.F.(4).5 | Apply career planning concepts, tools, and strategies to explore plan, obtain, and develop a career in this pathway. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.F.(4).6 | Demonstrate knowledge of underwriting techniques and strategies to gather, access, and evaluate risks posed by potential clients in this industry. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.F Finance Career Cluster** | | |
| **Pathway** | **9.4.F(5) Securities and Investment** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12F(5).1.1 | Demonstrate knowledge of personalized communication strategies used in this industry to determine client needs and wants and to develop responses intended to influence purchasing decisions and enhance future business opportunities. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational | 9.4.12F(5).2.1 | Plan the use of financial resources to prepare for performing key duties in this industry. |
| | | 9.4.12F(5).3.1 | Plan day-to-day operations activities to ensure continued functioning of businesses in this industry. |

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| | systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | | |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12F(5).4.1 | Describe laws and regulations affecting business operations and transactions in order to ensure compliance with industry requirements. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12F(5).5.1 | Apply career planning concepts, tools, and strategies to explore plan, obtain, and develop a career in this pathway. |

## STANDARD 9.4G: GOVERNMENT & PUBLIC ADMINISTRATION CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.G. Government & Public Administration Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.G.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.G.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.G.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | | 9.4.12.G.4 | Interpret and apply concepts of geography to demonstrate understanding of the academic foundations used in government and public administration. |
| | | 9.4.12.G.5 | Distinguish the functions of government and public administration in society to demonstrate an understanding of key issues in governance. |

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| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.G.6 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.G.7 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.* |
| | | 9.4.12.G.8 | *Locate, organize, and reference written information from various sources to communicate with coworkers and clients/participants.* |
| | | 9.4.12.G.9 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.G.10 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.G.11 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.G.12 | *Interpret verbal and nonverbal cues/behaviors to enhance communication with coworkers and clients/participants.* |
| | | 9.4.12.G.13 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.G.14 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |

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| | | 9.4.12.G.15 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.G.16 | *Exhibit public relations skills in order to increase internal and external customer/client satisfaction.* |
| | | 9.4.12.G.17 | Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice. |
| | | 9.4.12.G.18 | Evaluate appropriate communication formats that would facilitate the flow of ideas and information among government, public administration, the business community, and the general public. |
| | | 9.4.12.G.19 | Identify various negotiation skills that would achieve the goals of government. |
| | | 9.4.12.G.20 | Communicate in one or more foreign languages that would be used to perform government and public administration functions. |
| | **Problem Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.G.21 | *Employ critical thinking skills independently and in teams to solve problems and make decisions, e.g., analyze, synthesize, and evaluate.* |
| | | 9.4.12.G.22 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.G.23 | *Identify, write, and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.* |

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| | | 9.4.12.G.24 | *Conduct technical research to gather information necessary for decision-making.* |
| | | 9.4.12.G.25 | Demonstrate how democratic principles are applied in the process of governmental and administrative policy-making to achieve the public will. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.G.26 | Employ technological tools to expedite workflow. |
| | | 9.4.12.G.27 | Operate electronic mail applications to communicate within a workplace. |
| | | 9.4.12.G.28 | Operate Internet applications to perform workplace tasks. |
| | | 9.4.12.G.29 | Operate writing and publishing applications to prepare business communications. |
| | | 9.4.12.G.30 | Operate presentation applications to prepare presentations. |
| | | 9.4.12.G.31 | Employ spreadsheet applications to organize and manipulate data. |
| | | 9.4.12.G.32 | Employ database applications to manage data. |
| | | 9.4.12.G.33 | Employ collaborative/groupware applications to facilitate group work. |
| | | 9.4.12.G.34 | Employ computer operations applications to manage work tasks. |
| | | 9.4.12.G.35 | Use computer-based equipment, containing |

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| | | | embedded computers or processors, to control devices. |
| | | 9.4.12.G.36 | *Use emerging and specialized technologies to execute classroom and/or work-related tasks and processes that would achieve common objectives specific to government and public administration.* |
| | **Systems**:<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.G.37 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.G.38 | *Describe and use quality control systems and practices in classrooms and/or worksites to ensure quality products and services.* |
| | | 9.4.12.G.39 | Analyze and summarize the systems used by this cluster to achieve strategic objectives. |
| | **Safety, Health, and Environmental:**<br>Implementation of health, safety, and environmental | 9.4.12.G.40 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |

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| | management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.G.41 | *Demonstrate knowledge of employee rights and responsibilities and employers obligations to maintain workplace safety and health.* |
| | | 9.4.12.G.42 | *Identify emergency procedures as necessary to provide aid in workplace accidents.* |
| | | 9.4.12.G.43 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.G.44 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | | 9.4.12.G.45 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |
| | | 9.4.12.G.46 | Describe safe and healthful working conditions and environment that would promote well-being in governmental and public administrative workplaces. |
| | | 9.4.12.G.47 | Demonstrate knowledge of occupational safety and health, employee rights, and responsibilities and employers' obligations that would promote safe and healthful working conditions when executing government and public administration work tasks. |
| | | 9.4.12.G.48 | Assess types and sources of workplace hazards common to government and public administration work settings in order to demonstrate understanding of health and safety concerns. |

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| | | 9.4.12.G.49 | Identify hazards common to government and public administration work settings and select procedures for maintaining a safe environment. |
| | | 9.4.12.G.50 | Design plans and policies to respond to public health, safety, and environmental needs of the public. |
| | | 9.4.12.G.51 | Identify public hazards and determine abatement strategies to implement safety procedures. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.G.52 | *Employ leadership skills to accomplish classroom and/or organizational goals and objectives.* |
| | | 9.4.12.G.53 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals in the classroom and/or worksite.* |
| | | 9.4.12.G.54 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively in the classroom and/or worksite.* |
| | | 9.4.12.G.55 | *Establish and maintain effective working relationships with classmates and/or worksite mentors and coworkers in order to accomplish objectives and tasks.* |
| | | 9.4.12.G.56 | *Conduct and participate in meetings to accomplish classroom and/or worksite work tasks.* |
| | | 9.4.12.G.57 | *Employ mentoring skills to inspire and assist classmates.* |

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| | | 9.4.12.G.58 | Develop an organizational vision and strategic plan that would inform stakeholders of the goals of a government or public administration agency. |
| | | 9.4.12.G.59 | Design human resource strategies to maximize organizational potential in government and public administration agencies. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct to positively affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.G.60 | *Apply ethical reasoning to a variety of classroom and/or worksite situations in order to make ethical decisions.* |
| | | 9.4.12.G.61 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.G.62 | Assess and select a standard of practice that would be sufficient to meet legal and ethical requirements and meet the public's expectations for government and public administration. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities to build successful careers in a global economy. | 9.4.12.G.63 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in classrooms and/or be employable in the worksite.* |
| | | 9.4.12.G.64 | *Develop a personal career plan to meet career goals and objectives.* |
| | | 9.4.12.G.65 | *Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.* |

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| | | 9.4.12.G.66 | *Maintain a career portfolio to document knowledge, skills and experience in a career field.* |
| | | 9.4.12.G.67 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.G.68 | *Identify and exhibit traits for retaining employment to maintain employment once secured.* |
| | | 9.4.12.G.69 | *Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.G.70 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.G.71 | *Research professional development opportunities needed to keep current on relevant trends and information within the industry.* |
| | | 9.4.12.G.72 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.G.73 | *Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.* |
| | | 9.4.12.G.74 | Interpret written organizational policies, rules, and procedures that would ensure government and public administration employees effectively perform their jobs. |

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| | | 9.4.12.G.75 | Compare and evaluate career opportunities in one or more government and public administration career pathways to broaden awareness of careers available in the agencies related to the career cluster. |
| | **Technical Skills:** The required technologies to pursue targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster. | 9.4.12.G.76 | *Employ information management techniques and strategies in the classroom and/or worksite to assist in decision-making.* |
| | | 9.4.12.G.77 | *Employ planning and time management skills and tools in the classroom and/or worksite to enhance results and complete work tasks.* |
| | | 9.4.12.G.78 | Describe how human, financial, material, and information resources may be utilized in a manner that instills public trust. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.G. Government & Public Administration Career Cluster** | | |
| **Pathway** | **9.4.G(1) Governance** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.G.(1).1 | Use research and organizational skills to identify factual information applicable to matters of public policy. |
| | | 9.4.12.G.(1).2 | Develop and articulate reasoned, persuasive arguments to support public policy options or positions. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.G.(1).3 | Select appropriate political processes that would gain consensus for resolution of differing opinions and positions. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and | 9.4.12.G.(1).4 | Design advocacy strategies for new policies or policy changes to gain support for new laws, regulations, ordinances, programs, or procedures; or reform or revocation of existing laws, regulations, ordinances, programs, or procedures. |

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| | regulatory compliance, as well as the confidence of customers, business partners, and investors. | | |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.G. Government & Public Administration Career Cluster** | | |
| **Pathway** | **9.4.G(2) Foreign Service** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.G.(2).1 | Describe how foreign service professionals' knowledge of history, law, geography, natural resources, and economics; of sociology, politics, business, and culture; and of U.S. foreign policy would be used to create American foreign policy positions and objectives for diplomacy with other countries. |
| | | 9.4.12.G.(2).2 | Describe how foreign service professionals' knowledge of world history, law, geography, natural resources, and economics; of sociology, politics, business, and culture; and of U.S. foreign policy would be used to promote new or modified U.S. Foreign Service efforts. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.G.(2).3 | Describe how knowledge of U.S. and host-country laws, regulations, policies, and procedures can be used to manage administrative matters. |
| | | 9.4.12.G.(2).4 | Describe how knowledge of U.S. and host-country laws, regulations, policies, and procedures can be used to manage administrative matters. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.G. Government & Public Administration Career Cluster** | | |
| **Pathway** | **9.4.G(3) Planning** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.F.(3).1 | Analyze strategies that facilitate coherent integration of multiple plans or coordination of government/agency functions. |
| | | 9.4.12.F.(3).2 | Develop comprehensive plans for land use, housing, parks and recreation, transportation, economic development, and public facilities to manage change and allocate resources. |
| | | 9.4.12.F.(3).3 | Formulate plans and policies that meet social, economic, and physical needs and achieve the goals of the government or public agency. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.G. Government & Public Administration Career Cluster** | | |
| **Pathway** | **9.4.G(4) National Security** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.F.(4).1 | Participate in courses that instruct persons who perform tasks related to national and homeland security. |
| | | 9.4.12.F.(4).2 | Recognize appropriate duties, responsibilities, and authority of all levels of personnel in an organization to facilitate maximum utilization of human resources. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.F.(4).3 | Demonstrate leadership skills and strategies necessary to ensure compliance with rules of engagement and other applicable ethical standards. |

## STANDARD 9.4H: HEALTH SCIENCE CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.H Health Sciences Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.H.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.H.2 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.H.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | | 9.4.12.H.4 | Demonstrate knowledge of human structure and function as well as diseases and disorders to pursue the full range of postsecondary education and career opportunities in this cluster. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.H.5 | *Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |
| | | 9.4.12.H.6 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.* |

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| | | 9.4.12.H.7 | *Locate, organize, and reference written information from various sources to communicate with others.* |
| | | 9.4.12.H.8 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.H.9 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.H.10 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.H.11 | *Interpret verbal and nonverbal cues/behaviors to enhance communication.* |
| | | 9.4.12.H.12 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.H.13 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12.H.14 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.H.15 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | **Problem Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving | 9.4.12.H.16 | *Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |
| | | 9.4.12.H.17 | *Employ critical thinking and interpersonal skills to* |

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| | independently and in teams. | | *resolve conflicts.* |
| | | 9.4.12.H.18 | *Identify, write, and monitor performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.H.19 | *Conduct technical research to gather information necessary for decision-making.* |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.H.20 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.H.21 | *Operate electronic mail applications to communicate.* |
| | | 9.4.12.H.22 | *Operate Internet applications to perform tasks,* |
| | | 9.4.12.H.23 | *Operate writing and publishing applications to prepare communications.* |
| | | 9.4.12.H.24 | *Operate presentation applications to prepare and deliver presentations.* |
| | | 9.4.12.H.25 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.H.26 | *Employ database applications to manage data.* |
| | | 9.4.12.H.27 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.H.28 | *Employ computer operations applications to manage tasks.* |

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| | | 9.4.12.H.29 | *Use computer-based equipment containing embedded computers or processors to control devices.* |
| | **Systems**:<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.H.30 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.H.31 | *Describe and use quality control systems and practices to ensure quality products and services.* |
| | | 9.4.12.H.32 | Identify key systems that affect the roles, services, and quality of care performed within a department, an organization, and the overall healthcare environment. |
| | **Safety, Health, and Environmental:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, | 9.4.12.H.33 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.H.34 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |

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| | regulatory compliance, and continuous improvement. | 9.4.12.H.35 | *Identify emergency procedures that are necessary to provide aid in workplace accidents.* |
| | | 9.4.12.H.36 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.H.37 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals | 9.4.12.H.38 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.H.39 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals.* |
| | | 9.4.12.H.40 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively.* |
| | | 9.4.12.H.41 | *Establish and maintain effective relationships in order to accomplish objectives and tasks,* |
| | | 9.4.12.H.42 | *Conduct and participate in meetings to accomplish tasks.* |
| | | 9.4.12.H.43 | *Employ mentoring skills to assist others.* |
| | | 9.4.12.H.44 | Demonstrate an understanding of the roles and responsibilities of all members of the healthcare team, including their ability to promote the delivery of quality healthcare. |

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| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct to positively affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.H.45 | *Apply ethical reasoning to a variety of situations in order to make ethical decisions.* |
| | | 9.4.12.H.46 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.H.47 | Demonstrate an understanding of the legal responsibilities, limitations, and implications affecting different types of workers in the healthcare delivery setting in order to ensure compliance with legal requirements. |
| | | 9.4.12.H.48 | Demonstrate an understanding of accepted ethical practices with respect to cultural, social, and ethnic differences, and explain how this understanding helps ensure delivery of quality healthcare. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.H.49 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |
| | | 9.4.12.H.50 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.H.51 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |
| | | 9.4.12.H.52 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |
| | | 9.4.12.H.53 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept* |

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| | | | *employment positions that match career goals.* |
| | | 9.4.12.H.54 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.H.55 | *Identify and explore careers in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.H.56 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.H.57 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.H.58 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.H.59 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.H.60 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.H.61 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |
| | | 9.4.12.H.62 | Demonstrate knowledge of technical skills required for career pathways in this cluster, including occupational safety techniques, OSHA Standard Precautions, and safety procedures designed to protect clients, co-workers, and self. |

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| | | 9.4.12.H.63 | Demonstrate knowledge of technical skills required for career pathways in this cluster by obtaining related certificates, such as Cardiopulmonary Resuscitation (CPR) and First Aid. |

| Content Area | 21st Century Life & Career Skills | | |
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| Standard | 9.4 21ST Century Career and Technical Education | | |
| Strand | H. Health Science Career Cluster | | |
| Pathway | 9.4.H(1) Therapeutic Services | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.H.(1).1 | Explain planned procedures and goals to patients/clients and use a range of response strategies to address patient/client questions and concerns. |
| | | 9.4.12.H.(1).2 | Communicate patient/client information among team members allowing for feedback as needed to facilitate a team approach to patient care. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.H.(1).3 | Demonstrate knowledge of facility protocol and regulatory guidelines for collecting patient/client information. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster | 9.4.12.H.(1).4 | Demonstrate knowledge of the process for assessing, monitoring, and reporting patient/client health status to the treatment team within scope of |

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| | and pathway. | | practice. |
| | | 9.4.12.H.(1).5 | Demonstrate knowledge of the protocols for using patient/client health status information within scope of practice to document, evaluate, and adapt treatment plans. |
| | | 9.4.12.H.(1).6 | Demonstrate knowledge of how to evaluate patient/client needs, strengths, and problems within scope of practice to determine if treatment goals are being reached. |

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **H. Health Science Career Cluster** |
| **Pathway** | **9.4.H(2) Diagnostic Services** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.H.(2).1 | Communicate information within a healthcare classroom and demonstrate how to convey this information to appropriate departments and professionals in a timely manner to facilitate sharing of key diagnostic information used in treating patients. |
| | | 9.4.12.H.(2).2 | Demonstrate knowledge of how to explain procedures and goals to patients/clients accurately and effectively, using a range of response strategies to address patient/client questions and concerns. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, | 9.4.12.H.(2).3 | Interpret and respond to requests for procedures, plan implementation of services, and prepare for specific procedures in the course of conducting regular diagnostic services. |

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| | and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.H.(2).4 | Interpret and demonstrate knowledge of the purpose of different procedures, and perform procedures in the classroom. |
| | | 9.4.12.H.(2).5 | Demonstrate and apply knowledge of the principles of quality assurance, performance improvement, and timely reporting when conducting and reporting diagnostic evaluations, and use appropriate communication channels to maintain high standards of performance. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.H.(2).6 | Demonstrate knowledge of how to assess and report patient/client health status information to monitor and document patient progress. |
| | | 9.4.12.H.(2).7 | Demonstrate understanding of the principles of body mechanics for positioning, transferring, and transporting patients/clients by performing them without injury to the patient/client or self. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **H. Health Science Career Cluster** | | |
| **Pathway** | **9.4.H(3) Health Informatics** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.H.(3).1 | Communicate health/medical information accurately and within legal/regulatory guidelines to uphold the strictest standards of confidentiality. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services. | 9.4.12.H.(3).2 | Describe the resources, routes, and flow of information within the healthcare system and participate in the design and implementation of effective information systems or processes. |
| | | 9.4.12.H.(3).3 | Describe the scope of systems operations used to capture, retrieve, and maintain information from internal and external sources utilizing internal and external information and resources accurately and |

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| | • Understanding the global context of 21st-century industries and careers impacts business operations. | | efficiently. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.H.(3).4 | Describe the content and diverse uses of healthcare information, and accurately document, communicate, and maintain appropriate information in compliance with legal and regulatory requirements. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.H.(3).5 | Apply the quantitative and qualitative terminology and codes for a range of medical information and analyze the information for designated purposes in order to facilitate the flow of information among individuals in a healthcare environment. |
| | | 9.4.12.H.(3).6 | Read, interpret, and extract information from medical records and documents, applying knowledge of medical terminology and codes to facilitate the abstraction, coding, and other use of key information. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **H. Health Science Career Cluster** | | |
| **Pathway** | **9.4.H(4) Support Services** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.H.(4).1 | Review, differentiate, assess, and enhance responsibilities and task performance in order to safely follow established internal and external guidelines and provide effective, high quality support. |
| | | 9.4.12.H.(4).2 | Assess and identify appropriate ways to maximize the use of available resources for both purchasing and maintenance of equipment and materials. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and | 9.4.12.H.(4).3 | Adopt work practices to maintain a clean and healthy environment, and demonstrate best practices to reduce or eliminate pathogenic |

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| | environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | | organisms. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.H.(4).4 | Promote the establishment, maintenance, and improvement of healthcare facility standards and assist in the development and implementation of healthcare facility standards. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **H. Health Science Career Cluster** | | |
| **Pathway** | **9.4.H(5) Biotechnology Research and Development** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.H.(5).1 | Summarize the goals of biotechnology research and development and describe how biotechnological products that improve the quality of life are developed within legal and ethical protocols. |
| | | 9.4.12.H.(5).2 | Apply biochemistry, cell biology, genetics, mathematics, microbiology, molecular biology, organic chemistry, and statistics concepts to conduct effective biotechnology research and development. |
| | | 9.4.12.H.(5).3 | Demonstrate basic knowledge of recombinant DNA, genetic engineering, bioprocessing, monoclonal antibody production, nanotechnology, bioinformatics, genomics, proteomics, and transcriptomics that is used to conduct biotechnology research and development. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and | 9.4.12.H.(5).4 | Summarize and explain the ethical, moral, and legal issues related to biotech research, product development, and product use in society. |

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| | regulatory compliance, as well as the confidence of customers, business partners, and investors. | | |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.H.(5).5 | Identify and explain processes used for biotechnology product design, development, and production and describe how they work together to demonstrate an understanding of the biotechnology product development process. |
| | | 9.4.12.H.(5).6 | Demonstrate the principles of solution preparation, sterile techniques, contamination control, and measurement and calibration of instruments following biosafety protocols to maintain a safe laboratory environment. |

## STANDARD 9.4I: HOSPITALITY & TOURISM CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.I Hospitality & Tourism Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.I.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.I.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.I.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | | 9.4.12.I.4 | Demonstrate knowledge of marketing techniques used to sell products and services in this cluster. |
| | | 9.4.12.I.5 | Apply knowledge of cultures and information from geographical studies to develop products and services for this industry. |
| | | 9.4.12.I.6 | Identify effects of the economy on this industry to effectively plan products and services. |

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| | | 9.4.12.I.7 | Compare and contrast management styles that are appropriate to various types of establishments in this cluster to gain familiarity with the requirements for all venues. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.I.8 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.I.9 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.* |
| | | 9.4.12.I.10 | *Locate, organize, and reference written information from various sources to communicate with others.* |
| | | 9.4.12.I.11 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.I.12 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.I.13 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.I.14 | *Interpret verbal and nonverbal cues/behaviors to enhance communication.* |
| | | 9.4.12.I.15 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.I.16 | *Develop and interpret tables, charts, and figures to* |

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| | | | *support written and oral communications.* |
| | | 9.4.12.I.17 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.I.18 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.I.19 | *Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |
| | | 9.4.12.I.20 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.I.21 | *Identify, write, and monitor performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.I.22 | *Conduct technical research to gather information necessary for decision-making.* |
| | | 9.4.12.I.23 | Demonstrate the principles of budgeting and forecasting to maximize profitability and growth of establishments in this cluster. |
| | | 9.4.12.I.24 | Examine comments and suggestions from the customer service area to formulate improvements in services/products and to enhance training of staff. |
| | **Information Technology Applications:** Technology is used to access, manage, | 9.4.12.I.25 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.I.26 | *Operate electronic mail applications to communicate.* |

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| | integrate, and disseminate information. | | |
| | | 9.4.12.I.27 | *Operate Internet applications to perform tasks,* |
| | | 9.4.12.I.28 | *Operate writing and publishing applications to prepare communications.* |
| | | 9.4.12.I.29 | *Operate presentation applications to prepare and deliver presentations.* |
| | | 9.4.12.I.30 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.I.31 | *Employ database applications to manage data.* |
| | | 9.4.12.I.32 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.I.33 | *Employ computer operations applications to manage tasks.* |
| | | 9.4.12.I.34 | *Use computer-based equipment containing embedded computers or processors to control devices.* |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations. | 9.4.12.I.35 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.I.36 | *Describe and use quality control systems and practices to ensure quality products and services.* |
| | | 9.4.12.I.37 | Evaluate organizational systems used in this cluster to determine which more effectively serve customers. |

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| | • Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.I.38 | Identify and compare services and products from related industries to understand how they affect hospitality and tourism products and services. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.I.39 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.I.40 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.I.41 | *Identify emergency procedures that are necessary to provide aid in workplace accidents.* |
| | | 9.4.12.I.42 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.I.43 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | | 9.4.12.I.44 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |

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| | | 9.4.12.I.45 | Maintain safe and healthful working conditions and environments in this cluster to promote well-being. |
| | | 9.4.12.I.46 | Demonstrate knowledge of employee rights and responsibilities and employers' obligations concerning occupational safety and health in order to promote safe and healthful working conditions in this cluster. |
| | | 9.4.12.I.47 | Assess types and sources of workplace hazards common to hospitality and tourism work settings in order to demonstrate a working understanding of key health and safety concerns in this cluster. |
| | | 9.4.12.I.48 | Demonstrate knowledge of methods used in this cluster to control hazards and maintain safe environments. |
| | | 9.4.12.I.49 | Review safety and sanitation procedures and apply them to ensure a safe and healthy work environment. |
| | | 9.4.12.I.50 | Analyze the effects of nutrition, stress, and exercise on employee performance in this cluster. |
| | | 9.4.12.I.51 | Analyze the potential effects of exposure to common chemicals and other hazardous materials used in this cluster in order to prevent health problems that may result from their use. |
| | | 9.4.12.I.52 | Recognize potential, real, and perceived hazards and emergency situations common to this cluster and implement appropriate safety and security measures. |

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| | | 9.4.12.I.53 | Evaluate security measures to protect customers and limit business liability. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.I.54 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.I.55 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals.* |
| | | 9.4.12.I.56 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively.* |
| | | 9.4.12.I.57 | *Establish and maintain effective relationships in order to accomplish objectives and tasks.* |
| | | 9.4.12.I.58 | *Conduct and participate in meetings to accomplish tasks.* |
| | | 9.4.12.I.59 | *Employ mentoring skills to assist others.* |
| | | 9.4.12.I.60 | Demonstrate knowledge of how conflict resolution strategies are used in this cluster to resolve conflicts and satisfy others. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well | 9.4.12.I.61 | *Apply ethical reasoning to a variety of situations in order to make ethical decisions.* |
| | | 9.4.12.I.62 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |

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| | as the confidence of customers, business partners, and investors. | 9.4.12.I.63 | Describe the ethical and legal responsibilities of businesses in this cluster and explain their implications for guest/customer and employee conduct. |
| | | 9.4.12.I.64 | Examine professional and workplace ethics and legal responsibilities to develop guidelines for responsible conduct in this cluster. |
| | | 9.4.12.I.65 | Identify ethical issues and concerns in this cluster to aid in making career choices. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.I.66 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |
| | | 9.4.12.I.67 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.I.68 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |
| | | 9.4.12.I.69 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |
| | | 9.4.12.I.70 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.I.71 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.I.72 | *Identify and explore careers in one or more career pathways to build an understanding of the* |

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| | | | *opportunities available in the cluster.* |
| | | 9.4.12.I.73 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.I.74 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.I.75 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.I.76 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |
| | | 9.4.12.I.77 | Explain written organizational policies, rules, and procedures that are common to this cluster and that are used to help employees perform their jobs effectively. |
| | | 9.4.12.I.78 | Compare and evaluate career pathways within this cluster to build understanding of the requirements across multiple pathways. |
| | | 9.4.12.I.79 | Compare opportunities in independently owned and chain-affiliated businesses in this cluster to understand the advantages and disadvantages of working in each. |
| | | 9.4.12.I.80 | Demonstrate understanding of advancement procedures and the promotional work ladder in this cluster to plan career objectives. |

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| | | 9.4.12.I.81 | Demonstrate understanding of roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment and identify how they affect the quality of the product or service this cluster offers. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.I.82 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.I.83 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |
| | | 9.4.12.I.84 | Demonstrate recognized customer service skills and technology needed to be successful in this cluster. |
| | | 9.4.12.I.85 | Demonstrate understanding of different types of payment options that customers use to pay for services in this cluster. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.I Hospitality & Tourism Career Cluster** | | |
| **Pathway** | **9.4.I(1) Restaurant Food and Beverage Service** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.I.(1).1 | Use basic reading, writing, and mathematical skills to provide food production and services to ensure a positive guest/customer experience. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.I.(1).2 | Use knowledge of cultures and information from geographical studies to guide guest/customer service decisions. |
| | | 9.4.12.I.(1).3 | Demonstrate listening, writing, and speaking skills to enhance guest/customer satisfaction. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, | 9.4.12.I.(1).4 | Improve staff performance by planning staffing decisions using accepted managerial skills. |
| | | 9.4.12.I.(1).5 | Research costs, pricing, and market demands, as well as effective marketing strategies used in the pathway, to manage business profitability. |

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| | and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.I.(1).6 | Manage problems in ways that ensure continuity of quality service in industry businesses. |
| | | 9.4.12.I.(1).7 | Evaluate companies' standard operating procedures related to food and beverage production and guest services to understand how they help ensure the provision of quality products and services. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.I.(1).8 | Demonstrate knowledge of safety and sanitation procedures used in this industry and apply these procedures to maintain safe environments. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of | 9.4.12.I.(1).9 | Research and compare career opportunities and qualifications to broaden awareness of careers available in this industry. |

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| | customers, business partners, and investors. | | |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.I.(1).10 | Use computerized systems to manage food service operations and guest/customer services. |

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **9.4.I Hospitality & Tourism Career Cluster** |
| **Pathway** | **9.4.I(2) Lodging** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.I.(2).1 | Use telecommunications equipment to accomplish tasks. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st- | 9.4.12.I.(2).2 | Develop a staffing guide to schedule various lodging departments or specific staff positions. |
| | | 9.4.12.I.(2).3 | Explain how businesses in this industry manage inventories to maintain adequate quantities of both recycled and non-recycled items. |
| | | 9.4.12.I.(2).4 | Analyze functions performed by different divisions and departments within a lodging operation and explain the interactions among areas. |

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| | century industries and careers impacts business operations. | | |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.I.(2).5 | Explain how security and other control procedures are used to protect guests/customers and minimize risks in this industry. |
| | | 9.4.12.I.(2).6 | Explain how cash control procedures are used to protect funds in this industry. |
| | | 9.4.12.I.(2).7 | Explain how guests/customers and property are protected in this industry to minimize business losses and liability. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.I.(2).8 | Research the duties of and qualifications for managerial positions in back-of-the-house lodging operations to guide career choices. |
| | | 9.4.12.I.(2).9 | Research the duties and qualifications for managerial positions in front-of-the-house lodging operations to guide career choices. |
| | | 9.4.12.I.(2).10 | Compare and contrast entry-level, skilled level, and managerial positions in the lodging industry and distinguish qualifications and characteristics needed for each type of position. |
| | | 9.4.12.I.(2).11 | Compare opportunities in independently owned and chain-affiliated businesses in this industry to understand the advantages and disadvantages of each. |

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| | | 9.4.12.I.(2).12 | Describe the importance of housekeeping standards to assure guest/customer satisfaction. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.I.(2).13 | Explain procedures used in this industry to meet guest/customer needs, including procedures for registration, rate assignment, room assignment, and determination of payment methods. |
| | | 9.4.12.I.(2).14 | Understand the importance of check-out procedures to ensure guest/customer satisfaction and verify settlement of account. |
| | | 9.4.12.I.(2).15 | Employ effective reservation procedures to meet guest/customer needs and to maximize occupancy. |
| | | 9.4.12.I.(2).16 | Determine the size of an annual linen purchase needed to maintain desired quantities based on varying occupancy levels. |
| | | 9.4.12.I.(2).17 | Explain the relationship between a status report and maintaining a property's quality and quantity standards for housekeeping. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.I Hospitality & Tourism Career Cluster** | | |
| **Pathway** | **9.4.I(3) Travel and Tourism** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.I.(3).1 | Identify time zones and explain how they impact travel arrangements. |
| | | 9.4.12.I.(3).2 | Explain how information about seasons and domestic and international maps are used to create or enhance travel |
| | | 9.4.12.I.(3).3 | Employ unit and time conversion skills to develop schedules and to compute cost, distance, and time (including travel time). |
| | | 9.4.12.I.(3).4 | Explain global positioning systems (GPS) and how they are used for travel. |
| | | 9.4.12.I.(3).5 | Explain global positioning systems (GPS) and how they are used for travel. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical | 9.4.12.I.(3).6 | Select the most effective communication techniques and media venues to convey marketing information to a target audience. |
| | | 9.4.12.I.(3).7 | Observe and summarize potential, real, and perceived hazards of surroundings to recognize and implement appropriate safety and security |

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| | terminology and information. | | measures (e.g., lighting, walking surface remediation, etc.). |
| | | 9.4.12.I.(3).8 | Create a proactive solution to address common safety hazards, including hazards involving lighting, sound, and surface areas. |
| | | 9.4.12.I.(3).9 | Establish procedures to educate customers about identified safety and security issues. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.I.(3).10 | Demonstrate familiarity with industry-specific terminology, including acronyms, abbreviations, and definitions, and use this terminology to communicate within the industry. |
| | | 9.4.12.I.(3).11 | Identify diverse transportation, lodging, cruise, and food service options that can be used to produce a customized product. |
| | | 9.4.12.I.(3).12 | Identify and compare services and products from related industries to understand how they affect travel and tourism products and services. |
| | | 9.4.12.I.(3).13 | Identify the community characteristics necessary to develop and maintain cooperative tourism efforts. |
| | | 9.4.12.I.(3).14 | Match customer needs, wants, and expectations to appropriate travel products. |
| | | 9.4.12.I.(3).15 | Design promotional packages to effectively market travel and tourism products. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.I Hospitality & Tourism Career Cluster** | | |
| **Pathway** | **9.4.I(4) Recreation, Amusement, and Attractions** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.I.(4).1 | Analyze each venue in this pathway to determine its merchandising, program, and product potential as well as the maintenance technology on which it depends. |
| | **Safety, Health, and** | 9.4.12.I.(4).2 | |

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| | **Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.I.(4).3 | Identify safety and security issues unique to each venue in this pathway to implement appropriate safety and security measures. |
| | | 9.4.12.I.(4).4 | Create a resource base to help manage emergency situations in this industry. |
| | | 9.4.12.I.(4).5 | Examine identified safety and security issues in this industry that require customer education in order to maintain a safe and accident-free venue. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.I.(4).6 | Identify career opportunities in this pathway to broaden awareness of careers available in the cluster. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.I.(4).7 | Examine identified admission procedures to manage and control individuals and groups. |
| | | 9.4.12.I.(4).8 | Compare different ticket sales options to establish best practices and to maximize sales. |
| | | 9.4.12.I.(4).9 | Evaluate the types of information and directions a guest/customer needs at facility entry points to become familiar with their surroundings. |
| | | 9.4.12.I.(4).10 | Identify effective marketing strategies used in this pathway. |

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| | | 9.4.12.I.(4).11 | Examine the different venues in this pathway to gain knowledge of merchandising, program, and product potential. |
| | | 9.4.12.I.(4).12 | Explore the types of products available in this pathway to gain awareness of the operational requirements of each. |
| | | 9.4.12.I.(4).13 | Examine and implement admission and traffic control procedures to manage and control people, groups, and vehicles. |

## STANDARD 9.4J: HUMAN SERVICES CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.J Human Services Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.J.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.J.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.J.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.J.4 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.J.5 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.* |
| | | 9.4.12.J.6 | *Locate, organize, and reference written information from various sources to communicate with others.* |

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| | | 9.4.12.J.7 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.J.8 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.J.9 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.J.10 | *Interpret verbal and nonverbal cues/behaviors to enhance communication.* |
| | | 9.4.12.J.11 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.J.12 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12.J.13 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.J.14 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.J.15 | *Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |
| | | 9.4.12.J.16 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.J.17 | *Identify, write, and monitor performance goals to* |

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| | | | *guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.J.18 | *Conduct technical research to gather information necessary for decision-making.* |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.J.19 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.J.20 | *Operate electronic mail applications to communicate.* |
| | | 9.4.12.J.21 | *Operate Internet applications to perform tasks,* |
| | | 9.4.12.J.22 | *Operate writing and publishing applications to prepare communications.* |
| | | 9.4.12.J.23 | *Operate presentation applications to prepare and deliver presentations.* |
| | | 9.4.12.J.24 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.J.25 | *Employ database applications to manage data.* |
| | | 9.4.12.J.26 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.J.27 | *Employ computer operations applications to manage tasks.* |
| | | 9.4.12.J.28 | *Use computer-based equipment containing embedded computers or processors to control devices.* |

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| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.J.29 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.J.30 | *Describe and use quality control systems and practices to ensure quality products and services.* |
| | | 9.4.12.J.31 | Apply principles of planning, design, development, and evaluation when creating professional programs to accomplish long-range goals. |
| | | 9.4.12.J.32 | Analyze and select human resources to accomplish team objectives in this cluster. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.J.33 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.J.34 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.J.35 | *Identify emergency procedures that are necessary to provide aid in workplace accidents.* |
| | | 9.4.12.J.36 | *Identify response techniques to create a disaster and/or emergency response plan.*<br>Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and |

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| | | | regulatory compliance. |
| | | 9.4.12.J.37 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |
| | | 9.4.12.J.38 | Describe and assess rules and laws affecting this cluster to promote occupational safety and health. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.J.39 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.J.40 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals.* |
| | | 9.4.12.J.41 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively.* |
| | | 9.4.12.J.42 | *Establish and maintain effective relationships in order to accomplish objectives and tasks.* |
| | | 9.4.12.J.43 | *Conduct and participate in meetings to accomplish tasks.* |
| | | 9.4.12.J.44 | *Employ mentoring skills to assist others.* |
| | | 9.4.12.J.45 | Describe quality service, explain what it means to provide quality human services to clients, and model those behaviors. |
| | **Ethics and Legal Responsibilities:** Legal | 9.4.12.J.46 | *Apply ethical reasoning to a variety of situations in order to make ethical decisions.* |

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| | responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | | |
| | | 9.4.12.J.47 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.J.48 | Model ethical and legal conduct in this cluster. |
| | | 9.4.12.J.49 | Describe actions that comply with legal requirements for personal liability to guide personal conduct in this cluster. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.J.50 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |
| | | 9.4.12.J.51 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.J.52 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |
| | | 9.4.12.J.53 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |
| | | 9.4.12.J.54 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.J.55 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.J.56 | *Identify and explore careers in one or more career pathways to build an understanding of the opportunities available in the cluster.* |

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| | | 9.4.12.J.57 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.J.58 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.J.59 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.J.60 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |
| | | 9.4.12.J.61 | Explain written organizational policies, rules, and procedures that are common to this cluster and that are used to help employees perform their jobs effectively. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.J.62 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.J.63 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |
| | | 9.4.12.J.64 | Describe and apply technical knowledge and skills required to be successful in careers in this cluster. |
| | | 9.4.12.J.65 | Analyze resources for cost effectiveness to assist with planning the delivery of human services. |

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| | | 9.4.12.J.66 | Describe human development principles to enhance the well-being of individuals served by this cluster. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.J Human Services Career Cluster** | | |
| **Pathway** | **9.4.J(1) Early Childhood Development and Services** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.J.(1).1 | Describe and use grammatically correct English to enhance learning, direct behavior, and strengthen classroom management. |
| | | 9.4.12.J.(1).2 | Demonstrate knowledge of principles of child growth and development, including social, emotional, physical, and cognitive milestones, to provide appropriate and comprehensive program offerings. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.J.(1).3 | Demonstrate listening and communication skills, including listening respectfully and attentively to the child to facilitate ongoing development. |
| | | 9.4.12.J.(1).4 | Demonstrate listening and communication skills, including listening respectfully and attentively to parents/guardians to facilitate the child's ongoing development. |
| | | 9.4.12.J.(1).5 | Demonstrate listening and communication skills, including listening respectfully and attentively to staff members to facilitate child development activities. |

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| | | 9.4.12.J.(1).6 | Write plainly, synthesizing and summarizing information to assure it is easily understood by parents/guardians and staff members. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.J.(1).7 | Analyze situations and apply problem-solving and critical thinking skills to provide solutions. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.J.(1).8 | Select and use appropriate technology to enhance and organize childcare and education programs. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.J.(1).9 | Research knowledge of safety and sanitation procedures associated with environments in this pathway to assure compliance and readiness for potential hazards. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.J.(1).10 | Describe an inviting and encouraging atmosphere to encourage parent/guardian and family participation. |
| | | 9.4.12.J.(1).11 | Create and plan parent-teacher conferences, open houses, and other family forums to enhance family and community involvement. |

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| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.J.(1).12 | Describe ethical and legal responsibilities, laws, and regulations to protect children and families. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.J.(1).13 | Research necessary education and state-specific requirements to practice in this pathway. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.J.(1).14 | Incorporate play and other activities in program plans to develop children's skills. |
| | | 9.4.12.J.(1).15 | Evaluate curriculum for multicultural awareness activities to ensure a culturally rich and inviting learning environment. |
| | | 9.4.12.J.(1).16 | Evaluate curriculum for inclusiveness of special needs children. |

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **9.4.J Human Services Career Cluster** |
| **Pathway** | **9.4.J(2) Family and Community Services** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.J.(2).1 | Increase awareness of applicable services in this pathway by identifying and articulating how individuals receive information in various individual, social, historical, economic, and cultural contexts. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.J.(2).2 | Evaluate and identify a range of effective communication strategies and skills necessary to establish a collaborative relationship with others in this pathway. |
| | | 9.4.12.J.(2).3 | Demonstrate knowledge of how to communicate with family systems to benefit clients. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.J.(2).4 | Recognize concerns and plan how to assist individuals to make informed decisions. |
| | | 9.4.12.J.(2).5 | Analyze and identify various treatment plans that adjust to meet client needs. |
| | | 9.4.12.J.(2).6 | Examine crisis prevention, intervention, and resolution strategies to formulate emergency plans. |

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| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.J.(2).7 | Explain the rules of confidentiality to inspire client confidence in this pathway. |
| | | 9.4.12.J.(2).8 | Examine laws governing abuse, neglect, confidentiality, and other health and safety situations to establish legal aspects of operation. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.J.(2).9 | Research degrees, certifications, diplomas, or credentials required for employment and careers in this pathway. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.J.(2).10 | Describe formal and informal assessment practices to create interventions to assist clients in this pathway. |
| | | 9.4.12.J.(2).11 | Locate available community support and service networks to align needs of clients with community resources. |
| | | 9.4.12.J.(2).12 | Locate community resources to demonstrate awareness of assistance available to help clients in this pathway. |
| | | 9.4.12.J.(2).13 | Research state and local social service providers to expand the base of resources available to assist clients in this pathway. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.J Human Services Career Cluster** | | |
| **Pathway** | **9.4.J(3) Personal Care Services** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.J.(3).1 | Describe and apply economic and accounting principles and practices to promote business success and growth in this pathway. |
| | | 9.4.12.J.(3).2 | Describe and apply principles of biology by identifying living tissues, cells, and organisms to select and provide safe and effective personal care products and services. |
| | | 9.4.12.J.(3).3 | Describe and apply principles of chemistry by explaining chemical processes and the composition, structure, and properties of substances to provide a broad range of personal care services. |
| | | 9.4.12.J.(3).4 | Describe and apply basic principles of human anatomy to classify potential problems and to provide needed personal care services. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas | 9.4.12.J.(3).5 | Demonstrate knowledge of advertising principles when selecting media to attract and retain clients in this pathway. |

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| | that incorporate technical terminology and information. | | |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.J.(3).6 | Demonstrate how to assist individuals by recognizing concerns and making informed decisions to provide appropriate personal care services. |
| | | 9.4.12.J.(3).7 | Develop individualized plans that reflect client/family preferences, needs, and interests to create a course of treatment/action. |
| | | 9.4.12.J.(3).8 | Demonstrate knowledge of time management principles and techniques to achieve objectives and effectively serve clients, their families, and the community. |
| | | 9.4.12.J.(3).9 | Interpret and evaluate client satisfaction and propose solutions, procedures, and products to enhance future services and client interactions. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.J.(3).10 | Employ technology to analyze data and information to make appropriate recommendations and conclusions for personal care services. |
| | | 9.4.12.J.(3).11 | Demonstrate how to maintain electronic records of client services using procedures to securely store and retrieve personal care and client information. |

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| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.J.(3).12 | Identify vendor resources to provide maximum benefit for clients, service providers, businesses, or organizations in this pathway. |
| | | 9.4.12.J.(3).13 | Identify and assess systems in this pathway that providers can use obtain the range of personal care resources needed for business practice, and that allow providers to access those resources at appropriate times. |
| | | 9.4.12.J.(3).14 | Describe organizational policies, procedures, and regulations used to establish organizational priorities, accomplish the mission, and provide high quality service to a diverse set of clients and families in this pathway. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.J.(3).15 | Select and summarize emergency policies and procedures to achieve a safe and healthy environment at all times. |
| | | 9.4.12.J.(3).16 | Maintain a clean record of safety when providing services in this pathway by recognizing and assessing risks and potentially hazardous situations. |

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| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.J.(3).17 | Employ leadership skills to maintain positive relationships that enhance personal care business opportunities. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.J.(3).18 | Research current information and resources on personal care services to attract new clients and satisfy and retain present clients. |
| | | 9.4.12.J.(3).19 | Demonstrate how to synthesize client and professional information to attract new clients and retain present clients. |
| | | 9.4.12.J.(3).20 | Demonstrate knowledge of administrative/clerical procedures and systems to provide client satisfaction. |
| | | 9.4.12.J.(3).21 | Select various methods of obtaining feedback from clients and their families to understand their expectations and promote high quality standards. |
| | | 9.4.12.J.(3).22 | Research techniques, principles, tools, and instruments for developing efficient and safe delivery of client services to enhance client satisfaction. |
| | | 9.4.12.J.(3).23 | Demonstrate principles of mechanics when choosing, evaluating, and maintaining service equipment to provide continued client services. |

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **9.4.J Human Services Career Cluster** |
| **Pathway** | **9.4.J(4) Consumer Services** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.J.(4).1 | Assess strategies used to motivate clients/consumers to follow through with recommendations to better serve the client/consumer interests. |
| | | 9.4.12.J.(4).2 | Explain consumer services, using appropriate language, in order to complete transactions. |
| | | 9.4.12.J.(4).3 | Create accurate public service information to educate various audiences about consumer services. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.J.(4).4 | Employ critical thinking skills when solving financial/economic problems to deliver appropriate recommendations to clients. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.J.(4).5 | Use standard business tools or procedures to create consumer service information and facilitate client interactions. |

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| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.J.(4).6 | Demonstrate how to establish physically and psychologically healthy environments to inspire client confidence in the consumer services provided. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.J.(4).7 | Describe ethical and legal responsibilities associated with providing consumer services to serve the best interests of clients/consumers. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.J.(4).8 | Research necessary credentials and licensures and meet state-specific requirements to prepare for a career in this pathway. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.J.(4).9 | Select appropriate business procedures and equipment to produce satisfying client outcomes and business success. |
| | | 9.4.12.J.(4).10 | Research industry-specific products and equipment and demonstrate understanding of product/equipment features and uses to inform |

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| | | | client and consumers. |
| | | 9.4.12.J.(4).11 | Locate and synthesize current research on products and services to enhance presentations to clients/consumers. |

## STANDARD 9.4K: INFORMATION TECHNOLOGY CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.K Information Technology Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.K.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.K.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.K.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.K.4 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.K.5 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.* |
| | | 9.4.12.K.6 | *Locate, organize, and reference written information from various sources to communicate with others.* |

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| | | 9.4.12.K.7 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.K.8 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.K.9 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.K.10 | *Interpret verbal and nonverbal cues/behaviors to enhance communication.* |
| | | 9.4.12.K.11 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.K.12 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12.K.13 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.K.14 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | | 9.4.12.K.15 | Demonstrate how to develop positive customer relations to build and maintain a customer base in this cluster. |
| | | 9.4.12.K.16 | Demonstrate how to perform scheduling functions to meet customer needs in this cluster. |
| | **Problem-Solving and Critical** | 9.4.12.K.17 | *Employ critical thinking skills (e.g., analyze,* |

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| | **Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | | *synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |
| | | 9.4.12.K.18 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.K.19 | *Identify, write, and monitor performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.K.20 | *Conduct technical research to gather information necessary for decision-making.* |
| | | 9.4.12.K.21 | Use information technology design processes and guidelines to produce a quality information technology product or service. |
| | | 9.4.12.K.22 | Implement problem-solving processes to evaluate and verify the nature of problems in this cluster. |
| | | 9.4.12.K.23 | Employ organizational and design principles to sort and group information used in this cluster. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.K.24 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.K.25 | *Operate electronic mail applications to communicate.* |
| | | 9.4.12.K.26 | *Operate Internet applications to perform tasks,* |
| | | 9.4.12.K.27 | *Operate writing and publishing applications to prepare communications.* |
| | | 9.4.12.K.28 | *Operate presentation applications to prepare and* |

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| | | | *deliver presentations.* |
| | | 9.4.12.K.29 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.K.30 | *Employ database applications to manage data.* |
| | | 9.4.12.K.31 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.K.32 | *Employ computer operations applications to manage tasks.* |
| | | 9.4.12.K.33 | *Use computer-based equipment containing embedded computers or processors to control devices.* |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century | 9.4.12.K.34 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.K.35 | *Describe and use quality control systems and practices to ensure quality products and services.* |
| | | 9.4.12.K.36 | Analyze and summarize the use of information technology to enhance business effectiveness. |
| | | 9.4.12.K.37 | Implement cross-functional teams to achieve project goals specific to this cluster. |
| | | 9.4.12.K.38 | Employ project management knowledge to oversee information technology projects. |

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| | industries and careers impacts business operations. | | |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.K.39 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.K.40 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.K.41 | *Identify emergency procedures that are necessary to provide aid in workplace accidents.* |
| | | 9.4.12.K.42 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.K.43 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | | 9.4.12.K.44 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and | 9.4.12.K.45 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.K.46 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals.* |

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| | business associates toward the accomplishment of organizational goals. | 9.4.12.K.47 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively.* |
| | | 9.4.12.K.48 | *Establish and maintain effective relationships in order to accomplish objectives and tasks.* |
| | | 9.4.12.K.49 | *Conduct and participate in meetings to accomplish tasks.* |
| | | 9.4.12.K.50 | *Employ mentoring skills to assist others.* |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.K.51 | *Apply ethical reasoning to a variety of situations in order to make ethical decisions.* |
| | | 9.4.12.K.52 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.K.53 | Apply standard practices and behaviors that meet legal and ethical requirements and exhibit positive cyber-citizenry to demonstrate understanding of legal issues faced by professionals in this cluster. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers | 9.4.12.K.54 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |
| | | 9.4.12.K.55 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.K.56 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |

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| | | 9.4.12.K.57 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |
| | | 9.4.12.K.58 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.K.59 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.K.60 | *Identify and explore careers in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.K.61 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.K.62 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.K.63 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.K.64 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |
| | | 9.4.12.K.65 | Identify and explain the implications that information technology has for business transformation and development to demonstrate an understanding of the impact the industry has on business. |

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| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.K.66 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.K.67 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |
| | | 9.4.12.K.68 | Demonstrate knowledge of the hardware components associated with information systems. |
| | | 9.4.12.K.69 | Compare classes of software associated with the development and maintenance of information systems to develop software and maintain computer systems. |
| | | 9.4.12.K.70 | Identify and compare new information systems trends and technologies to build an understanding of their potential influence on industry practices. |
| | | 9.4.12.K.71 | Summarize basic data communications components and trends to maintain and update information technology systems. |
| | | 9.4.12.K.72 | Demonstrate technical knowledge of the Internet to develop and maintain information technology systems. |
| | | 9.4.12.K.73 | Access and use Internet services to service and update information technology systems and to complete other information technology tasks. |
| | | 9.4.12.K.74 | Install and configure software programs to maintain and update information technology systems. |

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| | | 9.4.12.K.75 | Demonstrate knowledge of Web page basics to convey an understanding of Web page design and functioning. |
| | | 9.4.12.K.76 | Employ information technology knowledge and procedures when configuring or modifying an operating system to ensure optimal system functioning. |
| | | 9.4.12.K.77 | Perform standard computer backup procedures to protect information. |
| | | 9.4.12.K.78 | Recognize and analyze potential information technology security threats to develop and maintain security measures. |
| | | 9.4.12.K.79 | Maintain computer systems to ensure optimal functioning of information technology systems. |
| | | 9.4.12.K.80 | Provide support and training to maintain proper network functioning. |
| | | 9.4.12.K.81 | Identify and describe quality assurance concepts to develop an understanding of the requirements for quality information technology products/services. |
| | | 9.4.12.K.82 | Describe the use of computer forensics to prevent and solve information technology crimes and security breaches. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.K Information Technology Career Cluster** | | |
| **Pathway** | **9.4.K(1) Network Systems** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.K.(1).1 | Identify and analyze an individual's or a business organization's network system needs and requirements to design a network. |
| | | 9.4.12.K.(1).2 | Analyze a network system to determine if it meets specifications. |
| | | 9.4.12.K.(1).3 | Design a network system using industry-specific technologies, tools, and standards to demonstrate a basic understanding of network architecture. |
| | | 9.4.12.K.(1).4 | Perform network system installation and configuration to launch a network system. |
| | | 9.4.12.K.(1).5 | Perform network administration and monitoring to maintain a network system. |
| | | 9.4.12.K.(1).6 | Perform network maintenance and user support services to maintain a network system. |

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **9.4.K Information Technology Career Cluster** |
| **Pathway** | **9.4. K(2) Information Support and Services** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.K.(2).1 | Perform user support to maintain service. |
| | | 9.4.12.K.(2).2 | Manage software systems to maintain and update service. |
| | | 9.4.12.K.(2).3 | Use hardware design, operation, and maintenance knowledge and skills to provide user support. |
| | | 9.4.12.K.(2).4 | Demonstrate and apply knowledge of operating system design, operation, and maintenance to provide informational support and perform service tasks. |
| | | 9.4.12.K.(2).5 | Demonstrate the use of networking concepts to develop a network. |
| | | 9.4.12.K.(2).6 | Employ knowledge of information system analysis and design to evaluate information systems. |
| | | 9.4.12.K.(2).7 | Employ system installation and maintenance skills when setting up and maintaining an information system to demonstrate application of fundamental system knowledge. |

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| | | 9.4.12.K.(2).8 | Employ system administration and control skills to monitor an information system. |
| | | 9.4.12.K.(2).9 | Employ technical writing and documentation skills to keep records necessary for an information system. |
| | | 9.4.12.K.(2).10 | Identify and implement quality assurance processes to maximize information system operation. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.K Information Technology Career Cluster** | | |
| **Pathway** | **9.4.K(3) Web and Digital Communication** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.K.(3).1 | Prepare specifications for digital communication products to communicate specifications to various audiences. |
| | | 9.4.12.K.(3).2 | Create and implement a digital communication product to meet customer needs. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services. | 9.4.12.K.(3).3 | Gather and analyze customer requirements for digital communications to best meet consumer needs. |
| | | 9.4.12.K.(3).4 | Define the scope of work in a written form to summarize and meet customer requirements for digital communication. |
| | | 9.4.12.K.(3).5 | Identify and implement quality assurance processes to deliver quality digital communication products and services. |

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| | • Understanding the global context of 21st-century industries and careers impacts business operations. | | |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.K.(3).6 | Consider intellectual property issues when creating Web pages and comply with intellectual property rights statutes and regulations. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.K.(3).7 | Iterate through the design and development process to create a uniform Web-based or digital product |
| | | 9.4.12.K.(3).8 | Participate in a user-focused design and development process to produce Web-based and digital communication solutions. |
| | | 9.4.12.K.(3).9 | Design and employ the use of motion graphics to create a visual Web-based or digital design. |
| | | 9.4.12.K.(3).10 | Demonstrate the effective use of tools, including tools for product development, product management, and production, to complete Web-based or digital communication projects. |
| | | 9.4.12.K.(3).11 | Employ knowledge of Web design, programming, |

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| | | | and administration to develop and maintain Web-based applications. |
| | | 9.4.12.K.(3).12 | Perform maintenance and customer support functions for digital communication products to maintain quality products that meet customer needs. |
| | | 9.4.12.K.(3).13 | Test a digital communication product to evaluate its functionality. |

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **9.4.K Information Technology Career Cluster** |
| **Pathway** | **9.4.K(4) Programming and Software Development** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.K.(4).1 | Identify and analyze customer software needs and requirements to guide programming and software development. |
| | | 9.4.12.K.(4).2 | Create and use information technology strategies and project plans when solving specific problems to deliver a product that meets customer specifications. |
| | | 9.4.12.K.(4).3 | Identify and analyze system and software requirements to ensure maximum operating efficiency. |
| | | 9.4.12.K.(4).4 | Demonstrate the effective use of software development tools to develop software applications. |
| | | 9.4.12.K.(4).5 | Use the software development process to design a software application and deliver it to the customer. |
| | | 9.4.12.K.(4).6 | Produce a computer application, in code, to demonstrate proficiency in developing an application using the appropriate programming language. |

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| | | 9.4.12.K.(4).7 | Implement software testing procedures to ensure quality products. |
| | | 9.4.12.K.(4).8 | Perform quality assurance tasks to produce quality products. |
| | | 9.4.12.K.(4).9 | Perform maintenance and customer support functions to maintain software applications. |
| | | 9.4.12.K.(4).10 | Develop and maintain a database to store information. |

## STANDARD 9.4L: LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.L Law, Public Safety, Corrections, & Security Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.L.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.L.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.L.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | | 9.4.12.L.4 | Demonstrate English language arts knowledge and skills, including industry-specific applications, to enable pursuit of the full range of postsecondary education and career opportunities associated with the cluster. |

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| | | 9.4.12.L.5 | Demonstrate mathematics knowledge and skills, including industry-specific applications, to enable pursuit of the full range of postsecondary education and career opportunities associated with the cluster. |
| | | 9.4.12.L.6 | Demonstrate science knowledge and skills, including industry-specific applications, to enable pursuit of a full range of postsecondary education and career opportunities associated with the cluster. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.L.7 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.L.8 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.* |
| | | 9.4.12.L.9 | *Locate, organize, and reference written information from various sources to communicate with others.* |
| | | 9.4.12.L.10 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.L.11 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.L.12 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |

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| | | 9.4.12.L.13 | *Interpret verbal and nonverbal cues/behaviors to enhance communication.* |
| | | 9.4.12.L.14 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.L.15 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12.L.16 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.L.17 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.L.18 | *Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |
| | | 9.4.12.L.19 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.L.20 | *Identify, write, and monitor performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.L.21 | *Conduct technical research to gather information necessary for decision-making.* |

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| | | 9.4.12.L.22 | Formulate ideas, proposals, and solutions to address problems common to this cluster to ensure effective and efficient delivery of safety and/or security services to targeted consumers. |
| | | 9.4.12.L.23 | Apply critical thinking strategies to facilitate team discussions about solutions to problems common to this cluster to contribute to the formulation of effective solutions. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.L.24 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.L.25 | *Operate electronic mail applications to communicate.* |
| | | 9.4.12.L.26 | *Operate Internet applications to perform tasks,* |
| | | 9.4.12.L.27 | *Operate writing and publishing applications to prepare communications.* |
| | | 9.4.12.L.28 | *Operate presentation applications to prepare and deliver presentations.* |
| | | 9.4.12.L.29 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.L.30 | *Employ database applications to manage data.* |
| | | 9.4.12.L.31 | *Employ collaborative/groupware applications to facilitate group work.* |

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| | | 9.4.12.L.32 | *Employ computer operations applications to manage tasks.* |
| | | 9.4.12.L.33 | *Use computer-based equipment containing embedded computers or processors to control devices.* |
| | | 9.4.12.L.34 | Demonstrate the effective use of computer-based equipment (i.e., containing embedded computers or processors) to control electromechanical devices commonly used in this cluster. |
| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.L.35 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.L.36 | *Describe and use quality control systems and practices to ensure quality products and services.* |

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| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.L.37 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.L.38 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.L.39 | *Identify emergency procedures that are necessary to provide aid in workplace accidents.* |
| | | 9.4.12.L.40 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.L.41 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | | 9.4.12.L.42 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |
| | | 9.4.12.L.43 | Assess measures to maintain safe and healthful working conditions in environments common to this cluster in order to protect employees' well-being. |
| | | 9.4.12.L.44 | Complete work tasks in accordance with applicable employer rules concerning occupational safety and health to promote safe and healthful working conditions in this cluster. |

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| | | 9.4.12.L.45 | Assess methods to reduce accident hazards common to office, facility, and mobile operations environments in this cluster to promote safe and accident-free work environments. |
| | | 9.4.12.L.46 | Assess group health hazards common to environments in this cluster to promote healthy work environments. |
| | | 9.4.12.L.47 | Research and evaluate records and reports about the safety, health, and environmental performance of workplaces in this cluster to identify potential hazards and workplace problems. |
| | | 9.4.12.L.48 | Demonstrate procedures involved with administering basic first-aid and CPR in order to respond to workplace emergencies in this cluster. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.L.49 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.L.50 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals.* |
| | | 9.4.12.L.51 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively.* |
| | | 9.4.12.L.52 | *Establish and maintain effective relationships in order to accomplish objectives and tasks.* |

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| | | 9.4.12.L.53 | *Conduct and participate in meetings to accomplish tasks.* |
| | | 9.4.12.L.54 | *Employ mentoring skills to assist others.* |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.L.55 | *Apply ethical reasoning to a variety of situations in order to make ethical decisions.* |
| | | 9.4.12.L.56 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.L.57 | Analyze and summarize the legal responsibilities associated with different roles and functions in this cluster to build understanding of appropriate professional, ethical behavior. |
| | | 9.4.12.L.58 | Analyze and synthesize information about the laws, ordinances, regulations, and organizational rules that affect this cluster to demonstrate understanding of expectations for employees in the field. |
| | | 9.4.12.L.59 | Evaluate strategies for responding to unethical or illegal actions of individuals and organizations and demonstrate how they are used to respond to unethical situations. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities | 9.4.12.L.60 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |

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| | build the capacity for successful careers. | 9.4.12.L.61 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.L.62 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |
| | | 9.4.12.L.63 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |
| | | 9.4.12.L.64 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.L.65 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.L.66 | *Identify and explore careers in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.L.67 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.L.68 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.L.69 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |

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| | | 9.4.12.L.70 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |
| | | 9.4.12.L.71 | Interpret written policies, procedures, and rules that describe and govern effective performance in workplaces in this cluster. |
| | | 9.4.12.L.72 | Compare and evaluate career pathways within this cluster to build understanding of the requirements across multiple pathways. |
| | | 9.4.12.L.73 | Analyze the characteristics required for success in different careers in this cluster to develop a personal perspective on the nature of the work, entry-level requirements, career paths, and challenges of this industry. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.L.74 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.L.75 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.L Law, Public Safety, Corrections, & Security Career Cluster** | | |
| **Pathway** | **9.4.L(1) Corrections Services** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.L.(1).1 | Demonstrate knowledge of psychosocial principles and strategies to facilitate and deal with human behavior encountered in corrections environments. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.L.(1).2 | Apply active listening skills in multiple settings common to corrections environments, such as group meetings and presentations, in order to obtain and clarify information and to implement directives and procedures. |
| | | 9.4.12.L.(1).3 | Execute verbal and oral communication techniques to deliver presentations and communicate technical information related to corrections environments. |
| | | 9.4.12.L.(1).4 | Demonstrate knowledge of how to interpret, analyze, and evaluate nonverbal messages to distinguish fact from fabrication in messages received in corrections environments. |

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| | | 9.4.12.L.(1).5 | Demonstrate knowledge of how to design effective written and visual materials using specific academic writing strategies to document and communicate incidents, activities, evidence, observations, and other important information related to corrections environments. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.L.(1).6 | Demonstrate knowledge of conflict resolution techniques and skills in order to resolve conflicts among individuals. |
| | | 9.4.12.L.(1).7 | Demonstrate knowledge of how to analyze hostile situations and execute anger and/or conflict management strategies in order to take charge of problems that arise in corrections settings. |
| | | 9.4.12.L.(1).8 | Demonstrate knowledge of how to observe and evaluate the surrounding environment for signs of potential problems and/or danger in order to proactively address potential problems in corrections settings. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.L.(1).9 | Use information technology systems to track public offenders in order to maintain accurate records within and among corrections institutions. |

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| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.L.(1).10 | Analyze and interpret standard operational procedures used in the criminal justice system in order to maintain security in corrections environments. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.L.(1).11 | Research, analyze, and interpret appropriate state and federal laws and documents to ensure corrections facility compliance with these requirements. |
| | | 9.4.12.L.(1).12 | Demonstrate understanding of regulations and procedures designed to ensure the health and well-being of inmates in corrections facilities. |

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| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.L.(1).13 | Assume leadership responsibilities commonly assigned to employees in corrections environments in order to demonstrate the ability to lead and collaborate with others. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.L.(1).14 | Analyze and interpret constitutional rights and other laws affecting corrections systems in order to promote a system with zero errors in performance regarding respect for individual rights. |
| | | 9.4.12.L.(1).15 | Analyze and summarize key implications that the U. S. legal system has for corrections services to demonstrate understanding and knowledge of influences on corrections systems. |
| | | 9.4.12.L.(1).16 | Analyze and select techniques used to manage crisis situations in corrections environments to protect individuals and society. |
| | | 9.4.12.L.(1).17 | Apply knowledge of mental disorders, physical disabilities, communication disorders, and unusual behaviors to describe how to identify, communicate with, and assist individuals requiring additional assistance in order to perform regular corrections officer duties. |

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| | | 9.4.12.L.(1).18 | Describe model behaviors used during interactions with prisoners that demonstrate concern for persons with disabilities or impairments in order to foster public cooperation and make corrections services more effective. |
| | | 9.4.12.L.(1).19 | Describe protocols created to reduce or address sexual harassment or abuse while performing corrections duties in order to reduce violations of this kind in corrections environments. |
| | | 9.4.12.L.(1).20 | Describe how to appraise situations that require the use of force and how to select appropriate times to use varying degrees of force, including deadly force, in order to demonstrate understanding of the proper use of force in corrections environments. |
| | | 9.4.12.L.(1).21 | Model appropriate reactions to situations involving Fourth Amendment rights, such as arrest authority, search and seizure, and probable cause, in order to demonstrate an understanding of the amendment's impact on actions of corrections officers and on corrections environments. |
| | | 9.4.12.L.(1).22 | Evaluate and summarize the rights of an individual being interrogated under the Fifth and Sixth Amendments in order to ensure trial, jury, and due process rights for individuals within corrections environments. |

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| | | 9.4.12.L.(1).23 | Analyze and summarize the impact of the Fourteenth Amendment as it relates to due process and equal protection in order to ensure protection of constitutional rights for individuals in corrections environments. |
| | | 9.4.12.L.(1).24 | Analyze and summarize limits on and types of interrogation procedures in order to protect the rights of both U.S. and non-U.S. citizens in corrections environments. |
| | | 9.4.12.L.(1).25 | Analyze and summarize the ethical and legal responsibilities of corrections staff to demonstrate understanding of responsible staff behavior, and to ensure the protection of legal rights in corrections environments. |
| | | 9.4.12.L.(1).26 | Analyze and interpret constitutional rights and other laws affecting corrections systems in order to promote a system with zero errors in performance regarding respect for individual rights. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.L.(1).27 | Use reliable sources to research and evaluate employment opportunities in corrections services in order to find corrections careers that align with individual mental and physical abilities. |
| | | 9.4.12.L.(1).28 | Model skills and behaviors that demonstrate an adequate level of drive in order to seek, apply for, obtain, and accept employment in the corrections services field. |

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| | | 9.4.12.L.(1).29 | Create, implement, and revise a plan for continuing education and training in the correctional services field in order to promote career advancement, personal development, and a positive image for corrections services employees. |
| | | 9.4.12.L.(1).30 | Compare and contrast custodial and non-custodial career opportunities in correctional environments in order to identify multiple opportunities for employment in the corrections services field. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.L.(1).31 | Summarize and apply knowledge of technical skills and procedures common to careers in this field to effectively complete day-to-day operations of corrections facilities. |

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **9.4.L Law, Public Safety, Corrections, & Security Career Cluster** |
| **Pathway** | **9.4.L(2) Emergency and Fire Management Services** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.L.(2).1 | Speak and write using communications equipment and platforms common to fire and emergency management services in order to communicate effectively and professionally while executing work duties. |
| | | 9.4.12.L.(2).2 | Operate radio communications systems common to emergency and fire management services in order to effectively convey and receive urgent information. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.L.(2).3 | Describe how to use first-responder and other emergency response skills to manage an incident scene in order to conduct and manage on-scene accident activities until relieved by a superior officer. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.L.(2).4 | Demonstrate knowledge of up-to-date information technology applications to facilitate handling of fire and emergency management situations. |

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| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.L.(2).5 | Demonstrate knowledge of up-to-date information technology applications to facilitate handling of fire and emergency management situations. |
| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.L.(2).6 | Model behaviors, strategies, and protocols that demonstrate an understanding of the objectives of, and a commitment to the mission of, fire and emergency management operations in order to carry out duties while responding to a range of incidents. |

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| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.L.(2).7 | Describe safety procedures and protocols associated with local, state, and federal regulations in order to effectively and safely conduct fire and emergency management duties. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.L.(2).8 | Develop an individual professional growth plan in order to improve team building and leadership skills required to function in guiding roles within the fire and emergency management field. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.L.(2).9 | Summarize laws, ordinances, regulations, and organizational rules that govern fire and emergency management operations in order to perform assigned duties within these established rules and protocols. |

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| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.L.(2).10 | Compare and contrast relevant aspects of careers in fire and emergency management services in order to demonstrate an understanding of opportunities available in the field. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.L.(2).11 | Describe protocols for handling emergency situations that range from minor medical and fire emergencies to area-wide incidents in order to demonstrate understanding of key skills used to respond effectively in such instances. |
| | | 9.4.12.L.(2).12 | Demonstrate knowledge of requirements for operating, maintaining, and repairing equipment in order to ensure that equipment is functional and ready for use in fire, medical, and other emergency situations. |
| | | 9.4.12.L.(2).13 | Examine equipment and summarize the range of applications for its use in fire and emergency management incidents in order to demonstrate the ability to use the equipment when needed. |
| | | 9.4.12.L.(2).14 | Design an appropriate Incident Command System in order to ensure the effective management of logistical procedures at an incident scene. |

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| | | 9.4.12.L.(2).15 | Demonstrate understanding of common codes and symbols used to identify materials as hazardous in order to properly handle potentially hazardous material in fire and emergency management environments. |
| | | 9.4.12.L.(2).16 | Analyze and summarize hazardous materials transportation modes in order to ensure the safe transport of substances from fire, medical, and other emergency scenes. |
| | | 9.4.12.L.(2).17 | Develop public information plans involving both key community audiences and local fire and emergency management facilities in order to enhance public awareness of fire and other emergency prevention and safety measures. |
| | | 9.4.12.L.(2).18 | Evaluate special operation rescue teams designed to address situations with unusual needs and explain when they would be called upon in order to demonstrate the ability to recognize emergency situations that warrant their use. |
| | | 9.4.12.L.(2).19 | Examine and summarize the range of factors and issues involved in using Preparedness and Response Systems in order to demonstrate understanding of the systems available for managing large-scale disasters. |

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| | | 9.4.12.L.(2).20 | Examine and summarize the key functions and techniques of critical infrastructure protection in order to ensure protection of potential targets from terrorism and/or natural disasters. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.L Law, Public Safety, Corrections, & Security Career Cluster** | | |
| **Pathway** | **9.4.L(3) Security and Protective Services** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.L.(3).1 | Compare and contrast proprietary and contracted security operations to demonstrate an understanding of the benefits and challenges of each in providing protective and security services. |
| | | 9.4.12.L.(3).2 | Examine crime prevention concepts to understand how they can be applied and how they relate to security and protective services functions. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.L.(3).3 | Exhibit active listening and speaking techniques when communicating to accurately receive and transmit security-related directives, technical concepts, and other information. |
| | | 9.4.12.L.(3).4 | Employ verbal communication techniques to deliver presentations and communicate technical information. |

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| | | 9.4.12.L.(3).5 | Demonstrate knowledge of how to interpret, analyze, and evaluate nonverbal messages to distinguish fact from fabrication. |
| | | 9.4.12.L.(3).6 | Demonstrate competency in writing using a range of formats common to this pathway. |
| | | 9.4.12.L.(3).7 | Employ verbal communication techniques when using radio and other communications devices common to this pathway. |
| | | 9.4.12.L.(3).8 | Describe the importance of good public relations techniques and how they can be used in security settings and crisis situations. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.L.(3).9 | Demonstrate the use of conflict resolution skills to resolve conflicts among individuals. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.L.(3).10 | Demonstrate the use of information technology tools common to this pathway. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter- | 9.4.12.L.(3).11 | Compare and contrast the criminal justice field and the security field, examining roles, responsibilities, tools, and techniques, in order to better understand the needs of this pathway. |

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| | organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.L.(3).12 | Apply basic management principles to demonstrate effective supervision and management of a security force or an organization's security program. |
| | | 9.4.12.L.(3).13 | Analyze and summarize the importance of and the roles individuals play in intelligence analysis in order to understand its importance to crime prevention and homeland security. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.L.(3).14 | Describe safety, health, and environmental responsibilities of security personnel for establishing and maintaining safe work environments. |

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| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.L.(3).15 | Examine and summarize the importance of establishing relationships with people, organizations, and functions in order to demonstrate the role of liaison in the security and protective services field. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.L.(3).16 | Analyze and summarize the impact of industry-specific legal issues on the security and protective services field. |
| | | 9.4.12.L.(3).17 | Apply ethical and legal reasoning in a range of situations faced by security and protective services personnel. |
| | | 9.4.12.L.(3).18 | Model appropriate responses to situations involving Fourth Amendment rights to demonstrate an understanding of the amendment's impact on actions related to security and protective services. |
| | | 9.4.12.L.(3).19 | Evaluate and summarize the rights of an individual being interrogated under the Fifth and Sixth Amendments in order to ensure trial, jury, and due process rights for individuals. |

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| | | 9.4.12.L.(3).20 | Analyze and summarize the impact of the Fourteenth Amendment as it relates to due process and equal protection in order to ensure that security and protective services professionals respect the constitutional rights of individuals they encounter. |
| | | 9.4.12.L.(3).21 | Analyze and summarize the limits and types of interrogation procedures in order to protect the rights of both and non-U.S. citizens. |
| | | 9.4.12.L.(3).22 | Compare and contrast alternatives to unethical or illegal actions taken by organizations in private security situations, select the best approach, and justify that selection. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.L.(3).23 | Explain how risk management principles can be applied to protect assets in a range of security settings. |
| | | 9.4.12.L.(3).24 | Demonstrate a basic understanding of security systems and their role in an overall security strategy. |
| | | 9.4.12.L.(3).25 | Examine and summarize procedures for basic incident responses in order to demonstrate an understanding of the security officer's role and responsibility in handling them. |

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| | | 9.4.12.L.(3).26 | Demonstrate proficiency in the performance of selected tasks related to the roles and responsibilities of security officers. |
| | | 9.4.12.L.(3).27 | Compare and contrast personnel security approaches in government and commercial settings. |
| | | 9.4.12.L.(3).28 | Compare and contrast types and techniques of security investigations as they apply to business settings. |
| | | 9.4.12.L.(3).29 | Examine and summarize the need to protect sensitive information, and the concepts and techniques used by security professionals to ensure the security of information and other intangible assets. |
| | | 9.4.12.L.(3).30 | Examine and summarize the need to protect information technology and associated systems to understand the role of security professionals in protecting these assets. |
| | | 9.4.12.L.(3).31 | Analyze and summarize the value of initial and follow-up security training programs for employees to understand the security specialist's role in preparing and providing that training. |

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| | | 9.4.12.L.(3).32 | Analyze and summarize the roles of security surveys, inspections, and exercises to properly assess security needs, test existing protection measures, and prepare employees for unexpected situations. |
| | | 9.4.12.L.(3).33 | Examine and summarize the concepts of “preparedness” and “response” for disaster situations to demonstrate understanding of the security professional’s role in unforeseen events. |
| | | 9.4.12.L.(3).34 | Compare and contrast the elements and techniques of critical infrastructure protection to reduce the risk associated with key terrorist targets and to reduce the impact of natural disasters. |
| | | 9.4.12.L.(3).35 | Compare and contrast crime prevention concepts to understand how they can be applied and how they relate to security and protective services functions. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.L Law, Public Safety, Corrections, & Security Career Cluster** | | |
| **Pathway** | **9.4.L(4) Law Enforcement Services** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.L.(4).1 | Demonstrate knowledge of the U.S. legal system and legal responsibilities related to law enforcement services. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.L.(4).2 | Demonstrate knowledge of verbal and nonverbal communication strategies encountered in the pathway, including body language, gestures, verbal content, tone, and inflection, in order to interpret suspect behavior and implement effective communication techniques. |
| | | 9.4.12.L.(4).3 | Demonstrate writing skills that facilitate accurate and clear note-taking and report writing in order to effectively complete police incident reports. |

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| | | 9.4.12.L.(4).4 | Demonstrate the ability to properly operate communications equipment used in law enforcement dispatch centers, and obtain 9-1-1 Dispatch Certification. |
| | | 9.4.12.L.(4).5 | Demonstrate knowledge of how to evaluate verbally and physically hostile situations in order to implement anger/conflict management strategies and resolve problems that arise in law enforcement settings. |
| | | 9.4.12.L.(4).6 | Demonstrate empathy for individuals from special populations, with a focus on hate crime and sex crime victims, in order to foster public cooperation and enhance the effectiveness of law-enforcement. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.L.(4).7 | Demonstrate understanding of the role computer forensics plays in identifying patterns and solving crimes in order to convey understanding of how computers influence the resolution of crimes. |
| | **Systems:**<br>• Roles within teams, work units, departments, | 9.4.12.L.(4).8 | Evaluate and select agency-approved community policing strategies to foster community involvement and cooperation in law enforcement |

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| | organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.L.(4).9 | Plan and develop a program, in collaboration with the community, to enhance understanding of crime prevention and loss-prevention activities. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.L.(4).10 | Demonstrate behaviors that model integrity and a commitment to ethical behavior, including casual contexts, such as when offered free coffee, in order to convey character traits required for employment in the pathway. |
| | | 9.4.12.L.(4).11 | Examine and summarize Fourth Amendment concerns in the areas of search and seizure and probable cause. |
| | | 9.4.12.L.(4).12 | Examine and summarize the rights of an individual being interrogated under the Fifth and Sixth Amendments in order to ensure trial, jury, and due process rights for individuals in the law enforcement environments. |

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| | | 9.4.12.L.(4).13 | Examine and summarize the impact of the Fourteenth Amendment as it relates to due process and equal protection, with a focus on both current events and historical accounts in order to ensure that law enforcement professionals respect the constitutional rights of individuals they encounter. |
| | | 9.4.12.L.(4).14 | Examine and summarize limits on and types of interrogation procedures, with a focus on Miranda rights and the Fifth Amendment, in order to protect the rights of both U.S. and non-U.S. citizens in the course of providing law enforcement services. |
| | | 9.4.12.L.(4).15 | Examine and summarize state and local ordinances and law enforcement procedures regarding driving under the influence and public intoxication. |
| | | 9.4.12.L.(4).16 | Examine and summarize procedures and protocols involved in basic civil law enforcement procedures in order to serve writs, warrants, and summonses. |
| | | 9.4.12.L.(4).17 | Describe how to ensure compliance with established procedures to avoid the violation of constitutional rights. |

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| | | 9.4.12.L.(4).18 | Describe how to ensure compliance with established procedures to avoid the violation of constitutional protections regarding search and seizure, with a focus on the Terry stop (stop and frisk) and attaining warrants. |
| | | 9.4.12.L.(4).19 | Examine and summarize state and local laws and law enforcement procedures related to driving under the influence violations, with a focus on field sobriety tests, in order to enhance enforcement. |
| | | 9.4.12.L.(4).20 | Describe how to present testimony in legal proceedings in accordance with courtroom procedures, and demonstrate this skill by participating in mock trials. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.L.(4).21 | Analyze and assess appropriate techniques for managing crisis situations in order to maintain public safety. |
| | | 9.4.12.L.(4).22 | Examine and summarize crowd management strategies and skills used by law enforcement professionals in order to maintain control over large gatherings. |
| | | 9.4.12.L.(4).23 | Examine and summarize procedures and protocols used to address and resolve domestic violence issues. |

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| | | 9.4.12.L.(4).24 | Describe established procedures and laws affecting motor vehicle traffic stops in order to enhance compliance and enforcement. |
| | | 9.4.12.L.(4).25 | Examine and summarize procedures for properly processing crime scenes for fingerprint evidence. |
| | | 9.4.12.L.(4).26 | Examine and summarize strategies to properly protect, document and process crime scenes and all related evidence. |
| | | 9.4.12.L.(4).27 | Describe how to conduct interviews and interrogations using appropriate law enforcement procedures in order to ensure the protection of individual rights and effective information gathering. |
| | | 9.4.12.L.(4).28 | Examine and summarize techniques and protocols for effectively and safely responding to crimes in progress, including radio techniques, in order to ensure individual and public safety. |
| | | 9.4.12.L.(4).29 | Assess and select appropriate responses and procedures for assisting individuals who require special assistance from law enforcement personnel, such as individuals with mental disorders, physical disabilities, communication disorders, and other special needs. |

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| | | 9.4.12.L.(4).30 | Examine and summarize protocols and procedures intended to protect the rights of juvenile victims and offenders. |
| | | 9.4.12.L.(4).31 | Describe how to investigate and document a motor vehicle accident in compliance with prescribed procedures. |
| | | 9.4.12.L.(4).32 | Describe how to evaluate situations that require the use of force, how to analyze and select the appropriate level of force, and how to determine when to use personal protective equipment. |
| | | 9.4.12.L.(4).33 | Describe the signs and symptoms of possible child abuse and neglect. |
| | | 9.4.12.L.(4).34 | Describe the safe handling and the inherent dangers associated with the handling of dangerous drugs and the behavioral symptoms of drug use. |
| | | 9.4.12.L.(4).35 | Demonstrate proper handcuffing techniques. |
| | | 9.4.12.L.(4).36 | Examine and summarize the skills used in operating RADAR speed-measuring equipment in order to enforce existing traffic laws. |

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| | | 9.4.12.L.(4).37 | Examine and summarize the range of law enforcement issues involved in Preparedness and Response Systems to demonstrate understanding of systems involved in preparing for and managing large-scale disasters. |
| | | 9.4.12.L.(4).38 | Examine and summarize the key law enforcement functions and techniques related to critical infrastructure protection in order to protect potential targets from terrorism and/or natural disasters. |
| | | 9.4.12.L.(4).39 | Assess intelligence analysis techniques and procedures used to deter crime and identify homeland security initiatives to demonstrate an understanding of the influence intelligence may have on law enforcement. |
| | | 9.4.12.L.(4).40 | Examine and summarize the rights of victims and witnesses as well as procedures for protecting them. |
| | | 9.4.12.L.(4).41 | Describe how to conduct building searches. |
| | | 9.4.12.L.(4).42 | Describe the paper collection of evidence to prevent corruption of crime scenes. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.L Law, Public Safety, Corrections, & Security Career Cluster** | | |
| **Pathway** | **9.4.L(5) Legal Services** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.L.(5).1 | Analyze and summarize the roles of the three branches of the U.S. Government (i.e., the judicial, legislative, and executive branches) in order to demonstrate an understanding of how government influences legal services. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.L.(5).2 | Demonstrate techniques for effective listening in order to manage receipt of orally communicated information in legal services environments. |
| | | 9.4.12.L.(5).3 | Demonstrate verbal and oral communications skills for communicating effectively in legal services environments. |
| | | 9.4.12.L.(5).4 | Analyze and interpret nonverbal communications in order to distinguish fact from fabrication in messages received in legal services environments. |

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| | | 9.4.12.L.(5).5 | Demonstrate specific academic writing strategies used by professionals in legal services environments. |
| | | 9.4.12.L.(5).6 | Use legal terminology accurately to effectively communicate within the legal services community. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.L.(5).7 | Demonstrate skill using information technology tools that legal services professionals use to perform daily tasks. |
| | | 9.4.12.L.(5).8 | Analyze and summarize the role computer forensics plays in preventing and solving crimes in order to demonstrate an understanding of key factors influencing the resolution of crimes. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.L.(5).9 | Evaluate and model appropriate reactions to situations involving Fourth Amendment rights in order to demonstrate an understanding of the impact this amendment has on individuals providing legal services and their actions. |
| | | 9.4.12.L.(5).10 | Evaluate and summarize the rights of an individual being interrogated under the Fifth and Sixth Amendments in order to ensure trial, jury, and due process rights for individuals in legal services environments. |

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| | | 9.4.12.L.(5).11 | Analyze and summarize the impact of the Fourteenth Amendment as it relates to due process and equal protection in order to ensure that legal service professionals respect the constitutional rights of individuals they encounter. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.L.(5).12 | Demonstrate the technical knowledge and skills required of legal services professionals in order to prepare for the full range of careers in the pathway. |

## STANDARD 9.4M: MANUFACTURING CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.M. Manufacturing Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.M.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.M.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.M.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.M.4 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.M.5 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.* |
| | | 9.4.12.M.6 | *Locate, organize, and reference written information from various sources to communicate with others.* |

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| | | 9.4.12.M.7 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.M.8 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.M.9 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.M.10 | *Interpret verbal and nonverbal cues/behaviors to enhance communication.* |
| | | 9.4.12.M.11 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.M.12 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12.M.13 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.M.14 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.M.15 | *Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |
| | | 9.4.12.M.16 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |

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| | | 9.4.12.M.17 | *Identify, write, and monitor performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.M.18 | *Conduct technical research to gather information necessary for decision-making.* |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.M.19 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.M.20 | *Operate electronic mail applications to communicate.* |
| | | 9.4.12.M.21 | *Operate Internet applications to perform tasks,* |
| | | 9.4.12.M.22 | *Operate writing and publishing applications to prepare communications.* |
| | | 9.4.12.M.23 | *Operate presentation applications to prepare and deliver presentations.* |
| | | 9.4.12.M.24 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.M.25 | *Employ database applications to manage data.* |
| | | 9.4.12.M.26 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.M.27 | *Employ computer operations applications to manage tasks.* |

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| | | 9.4.12.M.28 | *Use computer-based equipment containing embedded computers or processors to control devices.* |
| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.M.29 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.M.30 | *Describe and use quality control systems and practices to ensure quality products and services.* |
| | | 9.4.12.M.31 | Summarize and explain how manufacturing businesses operate to demonstrate an understanding of key functions of organizations in the cluster. |
| | | 9.4.12.M.32 | Analyze and summarize how manufacturing businesses improve performance to demonstrate an understanding of various methods for enhancing production. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.M.33 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.M.34 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.M.35 | *Identify emergency procedures that are necessary to provide aid in workplace accidents.* |

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| | | 9.4.12.M.36 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.M.37 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | | 9.4.12.M.38 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |
| | | 9.4.12.M.39 | Maintain safe and healthful working conditions and environments to ensure employee safety. |
| | | 9.4.12.M.40 | Understand employee rights and responsibilities and employers obligations concerning occupational safety and health. |
| | | 9.4.12.M.41 | Assess types and sources of workplace hazards common to manufacturing business environments in order to maintain safe working conditions. |
| | | 9.4.12.M.42 | Demonstrate understanding of how to control workplace hazards in manufacturing business environments in order to maintain safe working conditions. |
| | | 9.4.12.M.43 | Summarize safety, health, and environmental management systems to convey an understanding of how manufacturing businesses comply with governmental policies and procedures. |

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| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.M.44 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.M.45 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals.* |
| | | 9.4.12.M.46 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively.* |
| | | 9.4.12.M.47 | *Establish and maintain effective relationships in order to accomplish objectives and tasks.* |
| | | 9.4.12.M.48 | *Conduct and participate in meetings to accomplish tasks.* |
| | | 9.4.12.M.49 | *Employ mentoring skills to assist others.* |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.M.50 | *Apply ethical reasoning to a variety of situations in order to make ethical decisions.* |
| | | 9.4.12.M.51 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for | 9.4.12.M.52 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |

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| | successful careers in a global economy. | 9.4.12.M.53 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.M.54 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |
| | | 9.4.12.M.55 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |
| | | 9.4.12.M.56 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.M.57 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.M.58 | *Identify and explore careers in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.M.59 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.M.60 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.M.61 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.M.62 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |

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| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.M.63 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.M.64 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |
| | | 9.4.12.M.65 | Describe and employ technical knowledge and skills required for careers in manufacturing in order to perform basic workplace activities. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.M. Manufacturing Career Cluster** | | |
| **Pathway** | **9.4.M(1) Manufacturing Production Process Development** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.M.(1).1 | Demonstrate how to communicate with co-workers and/or external customers to ensure that manufacturing production processes meet business requirements. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.M.(1).2 | Research new manufacturing processes to manage production of new and/or improved products. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations. | 9.4.12.M.(1).3 | Develop quality improvement processes to maintain quality during the manufacturing production process. |
| | | 9.4.12.M.(1).4 | Develop a continuous improvement plan to ensure production of high quality products that meet customer expectations. |

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| | • Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.M.(1).5 | Strategize ways to improve production processes in order to achieve manufacturing goals and meet customer and product standards. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.M.(1).6 | Assess and select a variety of techniques and solutions to ensure safe production of products as well as safe and productive workplaces. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.M.(1).7 | Design a new product that meets identified customer needs, while also demonstrating the use of strategies and techniques for developing manufacturing production processes. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Pathway** | **9.4.M. Manufacturing Career Cluster** | | |
| **Strand** | **9.4.M(2) Production** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.M.(2).1 | Demonstrate how to communicate with others to ensure production meets business requirements. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations. | 9.4.12.M.(2).2 | Coordinate work teams when designing and/or producing products to enhance performance of the production process. |
| | | 9.4.12.M.(2).3 | Recognize problems related to production processes, and design corrections to assure that products meet quality standards. |

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| | • Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.M.(2).4 | Describe production process audits and inspections used to maintain quality and encourage continuous improvement |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.M.(2).5 | Summarize and employ safety protocols to maintain a safe and productive production workplace. |
| | | 9.4.12.M.(2).6 | Research the safe use of manufacturing process equipment in order to protect personal well-being in the work environment. |
| | | 9.4.12.M.(2).7 | Identify equipment safety resources (e.g., equipment manufacturers and national safety organizations). |
| | | 9.4.12.M.(2).8 | Maintain equipment, tools, and workstations to provide safe work environments and meet company regulations. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.M.(2).9 | Design a product that satisfies a customer's desires to demonstrate the relationship between production processes and meeting customer needs. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.M. Manufacturing Career Cluster** | | |
| **Pathway** | **9.4.(3) Maintenance, Installation, and Repair** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.M.(3).1 | Communicate with others regarding maintenance, installation, and repair issues and trends in order to meet business needs. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business | 9.4.12.M.(3).2 | Analyze the impact of staffing, including the impact of separation from employment and absenteeism, on the production process. |

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| | operations. | | |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.M.(3).3 | Demonstrate knowledge of maintenance and repair processes and protocols used to maintain safe and productive workplaces. |
| | | 9.4.12.M.(3).4 | Demonstrate knowledge of the safe use of manufacturing equipment in order to ensure safety during maintenance, installation, and repair work. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.M.(3).5 | Develop hands-on knowledge of equipment operation to identify maintenance needs and maximize performance. |
| | | 9.4.12.M.(3).6 | Analyze and select installation, customization, or upgrade techniques in order to ensure the proper functioning of manufacturing equipment. |
| | | 9.4.12.M.(3).7 | Create a preventive maintenance schedule to maintain manufacturing equipment, tools, and workstations. |
| | | 9.4.12.M.(3).8 | Describe predictive and preventive maintenance strategies used to ensure that production processes run smoothly. |
| | | 9.4.12.M.(3).9 | Identify and diagnose equipment problems in order to effectively repair manufacturing equipment. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.M. Manufacturing Career Cluster** | | |
| **Pathway** | **9.4.M(4) Quality Assurance** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.M.(4).1 | Use communications strategies common to quality assurance careers to ensure that production meets business requirements. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century | 9.4.12.M.(4).2 | Analyze and select strategies for coordinating work teams to produce a product that meets quality assurance standards. |
| | | 9.4.12.M.(4).3 | Evaluate production operations for product and process quality to maintain quality assurance. |
| | | 9.4.12.M.(4).4 | Demonstrate understanding of ways to enhance product and process to meet quality standards. |
| | | 9.4.12.M.(4).5 | Develop continuous improvement activities for use in the manufacturing environment to enhance the quality of products or processes. |

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| | industries and careers impacts business operations. | 9.4.12.M.(4).6 | Employ processes, data, and tools to produce a product that satisfies customer needs for quality, value-added products. |
| | | 9.4.12.M.(4).7 | Analyze and select continuous improvement processes to maintain quality products and processes. |
| | | 9.4.12.M.(4).8 | Inspect manufacturing materials, report quality issues, and release only manufacturing materials that meet quality specifications. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.M.(4).9 | Describe safety inspections and training needed to maintain quality assurance and to provide safe and productive manufacturing workplaces. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.M. Manufacturing Career Cluster** | | |
| **Pathway** | **9.4.M(5) Logistics and Inventory Control** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.M.(5).1 | Communicate with co-workers and/or external customers about logistics and inventory control issues to ensure production meets business requirements. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.M.(5).2 | Describe and/or implement safety inspections and practices common to the pathway to maintain safe and productive classrooms and/or workplaces. |
| | | 9.4.12.M.(5).3 | Examine emerging safety issues related to using green energy and to green environments |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and | 9.4.12.M.(5).4 | Ship and receive products and materials using logistics and inventory control procedures and processes to meet business requirements. |

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| | pathway | | Use logistics and inventory control processes and procedures to demonstrate how to manage inventory to meet production requirements. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.M. Manufacturing Career Cluster** | | |
| **Pathway** | **9.4.M(6) Health, Safety, and Environmental Assurance** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.M.(6).1 | Evaluate procedures used to plan for safety in a new production process in order to ensure health, safety, and environmental well-being. |
| | | 9.4.12.M.(6).2 | Analyze investigations of health, safety, and/or environmental incidents and hazards in order to maintain healthy and safe manufacturing work environments. |
| | | 9.4.12.M.(6).3 | Evaluate preventive inspections of health, safety, and/or environmental hazards in order to ensure healthy and safe manufacturing work environments. |
| | | 9.4.12.M.(6).4 | Evaluate a job safety and health analysis of manufacturing jobs, equipment, and processes in order to identify priorities for health, safety, and environmental assurance programs. |
| | | 9.4.12.M.(6).5 | Analyze safety inspections findings and implement appropriate safety practices in order to improve the health and safety of manufacturing workplaces. |

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| | | 9.4.12.M.(6).6 | Evaluate and summarize training in health, safety, and/or environmental issues needed to provide safe, healthy, and productive manufacturing work environments. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.M.(6).7 | Demonstrate the safe use of manufacturing equipment in order to assure heath and safety in work environments. |
| | | 9.4.12.M.(6).8 | Examine and summarize health, safety, and/or environmental programs, projects, policies, or procedures in order to ensure healthy and safe manufacturing work environments. |
| | | 9.4.12.M.(6).9 | Examine and summarize continuous improvement protocols, techniques, and practices in order to enhance the health and safety of manufacturing work environments. |
| | | 9.4.12.M.(6).10 | Examine and summarize health, safety, and/or environmental quality assurance programs in order to ensure healthy and safe manufacturing work environments. |

## STANDARD 9.4N: MARKETING, SALES & SERVICE CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.N Marketing Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:**<br>Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.N.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.N.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.N.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | | 9.4.12.N.4 | Solve mathematical problems to obtain information for marketing decision-making. |
| | | 9.4.12.N.5 | Understand economic principles and concepts fundamental to business operations. |
| | | 9.4.12.N.6 | Apply sociological knowledge of group behavior to understand customer decision-making. |

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| | | 9.4.12.N.7 | Apply psychological knowledge of individual behavior to understand customer motivation. |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.N.8 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.N.9 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.* |
| | | 9.4.12.N.10 | *Locate, organize, and reference written information from various sources to communicate with others.* |
| | | 9.4.12.N.11 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.N.12 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.N.13 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.N.14 | *Interpret verbal and nonverbal cues/behaviors to enhance communication.* |
| | | 9.4.12.N.15 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.N.16 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |

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| | | 9.4.12.N.17 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.N.18 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | | 9.4.12.N.19 | Obtain and convey marketing ideas and information to facilitate business operations. |
| | | 9.4.12.N.20 | Evaluate and summarize the concepts and strategies used to communicate information about products, services, images, and/or ideas to achieve desired outcomes. |
| | | 9.4.12.N.21 | Demonstrate knowledge of personalized communication strategies used in this cluster to determine client needs and wants and to develop responses intended to influence purchasing decisions and enhance future business opportunities. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.N.22 | *Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |
| | | 9.4.12.N.23 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.N.24 | *Identify, write, and monitor performance goals to guide progress in assigned areas of responsibility and accountability.* |

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| | | 9.4.12.N.25 | *Conduct technical research to gather information necessary for decision-making.* |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.N.26 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.N.27 | *Operate electronic mail applications to communicate.* |
| | | 9.4.12.N.28 | *Operate Internet applications to perform tasks,* |
| | | 9.4.12.N.29 | *Operate writing and publishing applications to prepare communications.* |
| | | 9.4.12.N.30 | *Operate presentation applications to prepare and deliver presentations.* |
| | | 9.4.12.N.31 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.N.32 | *Employ database applications to manage data.* |
| | | 9.4.12.N.33 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.N.34 | *Employ computer operations applications to manage tasks.* |
| | | 9.4.12.N.35 | *Use computer-based equipment containing embedded computers or processors to control devices.* |
| | | 9.4.12.N.36 | Apply technological tools used by marketers to expedite workflow. |

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| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.N.37 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.N.38 | *Describe and use quality control systems and practices to ensure quality products and services.* |
| | | 9.4.12.N.39 | Analyze and summarize the concepts, processes, and skills associated with identifying new ideas, opportunities, and methods and with creating or starting new marketing projects or business ventures. |
| | | 9.4.12.N.40 | Analyze the contribution of accounting systems to the fiscal stability of businesses. |
| | | 9.4.12.N.41 | Demonstrate knowledge of tools, strategies, and systems used to maintain, monitor, control, and plan the use of financial resources for marketing activities. |
| | | 9.4.12.N.42 | Demonstrate knowledge of tools techniques, and systems that marketers use to plan, staff, lead, and organize their human resources. |
| | | 9.4.12.N.43 | Demonstrate knowledge of the tools, techniques, and systems that marketers use to create, communicate, and deliver value to customers and to manage customer relationships in ways that benefit both the organization and stakeholders. |

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| | | 9.4.12.N.44 | Demonstrate knowledge of the techniques and strategies used to foster positive, ongoing relationships with customers. |
| | | 9.4.12.N.45 | Plan day-to-day activities required for continued business operations. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.N.46 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.N.47 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.N.48 | *Identify emergency procedures that are necessary to provide aid in workplace accidents.* |
| | | 9.4.12.N.49 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.N.50 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |
| | | 9.4.12.N.51 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |

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| | | 9.4.12.N.52 | Demonstrate knowledge of safety, health, and environmental controls used to enhance productivity in the workplace. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.N.53 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.N.54 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals.* |
| | | 9.4.12.N.55 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively.* |
| | | 9.4.12.N.56 | *Establish and maintain effective relationships in order to accomplish objectives and tasks.* |
| | | 9.4.12.N.57 | *Conduct and participate in meetings to accomplish tasks.* |
| | | 9.4.12.N.58 | *Employ mentoring skills to assist others.* |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business | 9.4.12.N.59 | *Apply ethical reasoning to a variety of situations in order to make ethical decisions.* |
| | | 9.4.12.N.60 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |

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| | partners, and investors. | 9.4.12.N.61 | Understand management' s responsibility to know and abide by laws, regulations, and ethical behavior that affect operations and transactions. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.N.62 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |
| | | 9.4.12.N.63 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.N.64 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |
| | | 9.4.12.N.65 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |
| | | 9.4.12.N.66 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.N.67 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.N.68 | *Identify and explore careers in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.N.69 | *Examine requirements for career advancement to plan for continuing education and training.* |

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| | | 9.4.12.N.70 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.N.71 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.N.72 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |
| | | 9.4.12.N.73 | Understand concepts, tools, and strategies used to explore, obtain, and develop marketing careers. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.N.74 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.N.75 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |
| | | 9.4.12.N.76 | Understand tools and strategies used to access, process, maintain, evaluate, and disseminate marketing information to assist with business decision-making. |
| | | 9.4.12.N.77 | Plan the use of financial resources to protect solvency. |

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| | | 9.4.12.N.78 | Analyze and differentiate management tools, techniques, and strategies used in planning, controlling, and organizing a marketing organization or department to maintain the business or department' s growth and development. |
| | | 9.4.12.N.79 | Evaluate and summarize the processes used to monitor, plan, and control the day-to-day activities required for continued business operations. |
| | | 9.4.12.N.80 | Analyze and summarize the concepts and processes needed to identify, select, monitor, and evaluate sales channels. |
| | | 9.4.12.N.81 | Demonstrate knowledge of the concepts, systems, and tools needed to gather, access, synthesize, evaluate, and disseminate marketing information for use in making business decisions. |
| | | 9.4.12.N.82 | Evaluate and summarize the concepts and strategies used to determine marketing strategies and target them to specific audiences. |
| | | 9.4.12.N.83 | Evaluate and summarize the concepts and strategies used to determine and adjust prices to maximize return and meet customers' perceptions of value. |
| | | 9.4.12.N.84 | Evaluate and summarize the concepts and processes used to obtain, develop, maintain, and improve a product or service mix in response to market opportunities. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.N Marketing Career Cluster** | | |
| **Pathway** | **9.4.N(1) Marketing Communications** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.N.(1).1 | Evaluate and summarize the concepts, strategies, and systems used to obtain and convey ideas and information in this pathway. |
| | | 9.4.12.N.(1).2 | Research the concepts and strategies marketers use to communicate information about products, services, images, and/or ideas to achieve desired outcomes. |
| | | 9.4.12.N.(1).3 | Analyze the concepts and strategies marketers use to determine and target marketing communications strategies to specific audiences. |
| | | 9.4.12.N.(1).4 | Research the concepts, systems, and tools marketers use when making decisions to gather, access, synthesize, evaluate, and disseminate marketing information. |

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| | | 9.4.12.N.(1).5 | Research the concepts and actions marketers use to determine client needs and wants, and to develop personalized responses intended to influence purchasing decisions and enhance future business opportunities. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.N.(1).6 | Employ the tools, strategies, and systems marketers use to access, process, maintain, evaluate, and disseminate information in order to assist with decision-making. |
| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.N.(1).7 | Analyze the processes and systems marketers implement to monitor, plan, and control the day-to-day activities required for continued business operations. |
| | | 9.4.12.N.(1).8 | Assess the tools, techniques, and systems that businesses in this pathway use to plan, staff, lead, and organize human resources. |
| | | 9.4.12.N.(1).9 | Employ the tools, strategies, and systems used to maintain, monitor, control, and plan the use of financial resources in this pathway. |
| | | 9.4.12.N.(1).10 | Evaluate and summarize the tools, techniques, and systems that marketers use to create, communicate, and deliver value to customers and manage customer relationships in ways that benefit both the organization and stakeholders. |

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| | | 9.4.12.N.(1).11 | Analyze the concepts and strategies marketers use to determine and adjust prices for marketing communications. |
| | | 9.4.12.N.(1).12 | Research the concepts and processes marketers use to obtain, develop, maintain, and improve a product or service mix in response to market opportunities. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.N.(1).13 | Employ techniques, strategies, and systems used to foster self-understanding and enhance relationships with others in this pathway. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.N.(1).14 | Analyze and summarize laws and regulations that affect marketing business operations and transactions. |

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| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.N.(1).15 | Research the concepts, tools, and strategies marketers use to explore, obtain, and develop their careers in order to reach personal and professional goals. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.N Marketing Career Cluster** | | |
| **Pathway** | **9.4.N(2) Marketing Management** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.N.(2).1 | Evaluate and select concepts and strategies used in this pathway to communicate information about products, services, images, and/or ideas to achieve desired outcomes. |
| | | 9.4.12.N.(2).2 | Demonstrate understanding of personalized communications strategies marketers use to determine client needs and wants, and to develop responses intended to influence purchasing decisions and enhance future business opportunities. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.N.(2).3 | Facilitate decision-making by evaluating and selecting tools, strategies, and systems used in this industry to access, process, maintain, evaluate, and disseminate information. |
| | **Systems:**<br>• Roles within teams, work units, departments, | 9.4.12.N.(2).4 | Employ tools, strategies, and systems used in this industry to plan the use of financial resources. |

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| | organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.N.(2).5 | Employ tools, techniques, and systems used in this industry to plan and organize human resources. |
| | | 9.4.12.N.(2).6 | Demonstrate knowledge of processes and systems used in this industry to plan, monitor, and control the day-to-day activities required for continued operations. |
| | | 9.4.12.N.(2).7 | Apply concepts and processes used in this pathway to identify, select, monitor, and evaluate sales channels in order to minimize costs and maximize effectiveness. |
| | | 9.4.12.N.(2).8 | Evaluate and select tools, techniques, and systems used to plan, control, and organize a marketing organization or department. |
| | | 9.4.12.N.(2).9 | Apply concepts and strategies used in this industry to determine and adjust prices in order to maximize return and meet customers' perceptions of value. |
| | | 9.4.12.N.(2).10 | Evaluate and select concepts and processes used in this industry to obtain, develop, maintain, and improve a product or service mix in response to market opportunities. |

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| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.N.(2).11 | Understand concepts, tools, and strategies used to explore, obtain, and develop marketing careers. |

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **9.4.N Marketing Career Cluster** |
| **Pathway** | **9.4.N.(3) Marketing Research** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI) |
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| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.N.(3).1 | Employ processes and systems used in this industry to monitor, plan, and control day-to-day marketing research activities in order to contribute to continued functioning. |
| | | 9.4.12.N.(3).2 | Employ tools, techniques, and systems used in this industry to plan, control, and organize a marketing research organization or department. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.N.(3).3 | Employ concepts, tools, strategies, and systems used in this pathway to access, process, maintain, evaluate, and disseminate information in order to assist business decision-making. |

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| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.N.(3).4 | Employ concepts, tools, and strategies used in this pathway to explore, obtain, and develop marketing research careers. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.N Marketing Career Cluster** | | |
| **Pathway** | **9.4.N(4) Management & Entrepreneurship** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.N.(4).1 | Communicate and apply interpersonal skills to manage a business. |
| | | 9.4.12.N.(4).2 | Apply promotional knowledge and skill to communicate information in order to achieve a desired outcome. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century | 9.4.12.N.(4).3 | Plan for organizational development and growth to facilitate business success. |
| | | 9.4.12.N.(4).4 | Organize work efforts and staff to enhance work flow. |
| | | 9.4.12.N.(4).5 | Staff the business operation to expedite work efforts. |
| | | 9.4.12.N.(4).6 | Plan and evaluate purchasing activities to minimize expenses. |
| | | 9.4.12.N.(4).7 | Maintain fiscal control of business operations to limit expenses. |

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| | industries and careers impacts business operations. | 9.4.12.N.(4).8 | Employ distribution knowledge and skill to manage supply-chain activities. |
| | | 9.4.12.N.(4).9 | Employ financial knowledge and skill to make business decisions. |
| | | 9.4.12.N.(4).10 | Manage marketing information to make business decisions. |
| | | 9.4.12.N.(4).11 | Employ pricing strategies to maximize return and meet customers' perceptions of value. |
| | | 9.4.12.N.(4).12 | Obtain, develop, maintain, and improve a product/service mix to respond to market opportunities. |
| | | 9.4.12.N.(4).13 | Manage the sales function to determine client needs and wants, and respond through planned, personalized communication. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.N.(4).14 | Create safety and security plans to minimize loss and to maximize return. |
| | | 9.4.12.N.(4).15 | Resolve safety and security breaches to create a safe working environment and to minimize loss. |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional | 9.4.12.N.(4).16 | Apply ethics and government regulations to protect the business. |

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| | ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | | |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.N.(4).17 | Analyze sales careers to determine interest. |
| | | 9.4.12.N.(4).18 | Compare individual abilities, interests, and attitudes with those associated with entrepreneurial success in order to determine compatibility. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.N Marketing Career Cluster** | | |
| **Pathway** | **9.4.N(5) Merchandising** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.N.(5).1 | Communicate information about retail products, services, images, and/or ideas to achieve desired outcomes. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.N.(5).2 | Employ concepts, systems, and tools used in this industry to gather, access, synthesize, evaluate, and disseminate information in order to assist decision-making. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment | 9.4.12.N.(5).3 | Understand fundamental economic principles and concepts that impact business operations and merchandising decisions. |
| | | 9.4.12.N.(5).4 | Employ business tools, techniques, and systems used in this pathway to plan, staff, lead, and organize human resources. |

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| | impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.N.(5).5 | Employ tools, techniques, and systems used in this pathway to create, communicate, and deliver value to customers, and to manage customer relationships in ways that benefit both the organization and stakeholders. |
| | | 9.4.12.N.(5).6 | Employ processes and systems used in this pathway to plan, monitor, and control day-to-day activities in order to maintain continued functioning. |
| | | 9.4.12.N.(5).7 | Apply concepts and processes used in this pathway to move, store, locate, and/or transfer ownership of retail goods and services. |
| | | 9.4.12.N.(5).8 | Employ concepts and strategies used in this pathway to determine and target select audiences in order to facilitate merchandising activities. |
| | | 9.4.12.N.(5).9 | Employ concepts and strategies used in this pathway to determine and adjust prices in order to maximize return and meet customer's perceptions of value. |
| | | 9.4.12.N.(5).10 | Employ merchandising concepts and processes used in this pathway to obtain, develop, maintain, and improve a product or service mix in response to market opportunities. |

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| | | 9.4.12.N.(5).11 | Employ concepts and actions used in this pathway to determine client needs and wants, and to respond to clients through planned, personalized communications intended to influence purchasing decisions and enhance future sales opportunities. |
| | | 9.4.12.N.(5).12 | Employ concepts, tools, and strategies used in this industry to explore, obtain, and develop merchandising careers. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.N.(5).13 | Employ concepts, tools, strategies used in this industry to explore, obtain, and develop merchandising careers. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.N Marketing Career Cluster** | | |
| **Pathway** | **9.4.N(6) Professional Sales & Marketing** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.N.(6).1 | Gather, access, synthesize, evaluate, and disseminate information to aid in making sales. |
| | | 9.4.12.N.(6).2 | Employ concepts and actions used in this pathway to determine client needs and wants and to develop personalized communications intended to influence purchasing decisions and enhance future business opportunities. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.N.(6).3 | Understand concepts, tools, and strategies used in this pathway to explore, obtain, and develop sales careers. |

## STANDARD 9.4O: SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.O Science, Technology, Engineering & Mathematics Career Cluster** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)**<br>*CPIs common to all 16 Career Clusters are in italics.* |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.O.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.O.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.O.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.O.4 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.O.5 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.* |
| | | 9.4.12.O.6 | *Locate, organize, and reference written information from various sources to communicate with others.* |

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| | | 9.4.12.O.7 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.O.8 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.O.9 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.O.10 | *Interpret verbal and nonverbal cues/behaviors to enhance communication.* |
| | | 9.4.12.O.11 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.O.12 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12.O.13 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.O.14 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | | 9.4.12.O.15 | Prepare science, technology, engineering, and mathematics material in oral, written, or visual formats to provide information to an intended audience and to fulfill the specific communication needs of that audience. |

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| | | 9.4.12.O.16 | Apply active listening skills to obtain or clarify information pertaining to plans, processes, projects, or designs. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.O.17 | *Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |
| | | 9.4.12.O.18 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.O.19 | *Identify, write, and monitor performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.O.20 | *Conduct technical research to gather information necessary for decision-making.* |
| | | 9.4.12.O.21 | Effectively develop and apply the skills inherent in systems engineering in which requirements, configuration, integration, project management, quality assurance, and process applications are necessary. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.O.22 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.O.23 | *Operate electronic mail applications to communicate.* |
| | | 9.4.12.O.24 | *Operate Internet applications to perform tasks,* |
| | | 9.4.12.O.25 | *Operate writing and publishing applications to prepare communications.* |

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| | | 9.4.12.O.26 | *Operate presentation applications to prepare and deliver presentations.* |
| | | 9.4.12.O.27 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.O.28 | *Employ database applications to manage data.* |
| | | 9.4.12.O.29 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.O.30 | *Employ computer operations applications to manage tasks.* |
| | | 9.4.12.O.31 | *Use computer-based equipment containing embedded computers or processors to control devices.* |
| | | 9.4.12.O.32 | Effectively use information technology to gather, store, and communicate data in appropriate formats. |
| | | 9.4.12.O.33 | Evaluate and demonstrate skill with a range of technological tools designed to manipulate, report, or operate with data acquisition. |
| | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment | 9.4.12.O.34 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.O.35 | *Describe and use quality control systems and practices to ensure quality products and services.* |

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| | impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.O.36 | Examine and summarize roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment to understand the nature and scope of organizations in this cluster. |
| | | 9.4.12.O.37 | Identify how key organizational systems affect organizational performance and the quality of products and services to demonstrate an understanding of how systems are managed and improved in this cluster. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.O.38 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.O.39 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.O.40 | *Identify emergency procedures that are necessary to provide aid in workplace accidents.* |
| | | 9.4.12.O.41 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.O.42 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |

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| | | 9.4.12.O.43 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |
| | | 9.4.12.O.44 | Apply appropriate safety practices in environments in this cluster to ensure a safe workplace. |
| | | 9.4.12.O.45 | Develop an awareness of safety, health, and environmental hazards inherent in this cluster and apply appropriate precautions when solving problems, developing plans, implementing processes, or completing projects to proactively promote safety. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.O.46 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.O.47 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals.* |
| | | 9.4.12.O.48 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively.* |
| | | 9.4.12.O.49 | *Establish and maintain effective relationships in order to accomplish objectives and tasks.* |
| | | 9.4.12.O.50 | *Conduct and participate in meetings to accomplish tasks.* |
| | | 9.4.12.O.51 | *Employ mentoring skills to assist others.* |
| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional | 9.4.12.O.52 | *Apply ethical reasoning to a variety of situations in order to make ethical decisions.* |

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| | ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.O.53 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.O.54 | Demonstrate workplace ethics specific to occupations in this cluster in order to reflect effective stewardship of resources. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.O.55 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |
| | | 9.4.12.O.56 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.O.57 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |
| | | 9.4.12.O.58 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |
| | | 9.4.12.O.59 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.O.60 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.O.61 | *Identify and explore careers in one or more career pathways to build an understanding of the opportunities available in the cluster.* |

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| | | 9.4.12.O.62 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.O.63 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.O.64 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.O.65 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |
| | | 9.4.12.O.66 | Select, research, and examine critical aspects of career opportunities in one or more pathways to gain an understanding of the breadth of occupations within this cluster. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.O.67 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.O.68 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.O Science, Technology, Engineering & Mathematics Career Cluster** | | |
| **Pathway** | **9.4.O(1) Engineering and Technology** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.O.(1).1 | Apply the concepts, processes, guiding principles, and standards of school mathematics to solve science, technology, engineering, and mathematics problems. |
| | | 9.4.12.O.(1).2 | Apply and use algebraic, geometric, and trigonometric relationships, characteristics, and properties to solve problems. |
| | | 9.4.12.O.(1).3 | Demonstrate the ability to select, apply, and convert systems of measurement to solve problems. |
| | | 9.4.12.O.(1).4 | Demonstrate the ability to use Newton's laws of motion to analyze static and dynamic systems with and without the presence of external forces. |
| | | 9.4.12.O.(1).5 | Explain relevant physical properties of materials used in engineering and technology. |
| | | 9.4.12.O.(1).6 | Explain relationships among specific scientific theories, principles, and laws that apply to technology and engineering. |

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| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.O.(1).7 | Use mathematics, science, and technology concepts and processes to solve problems in projects involving design and/or production (e.g., medical, agricultural, biotechnological, energy and power, information and communication, transportation, manufacturing, and construction). |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.O.(1).8 | Select and use a range of communications technologies, including word processing, spreadsheet, database, presentation, email, and Internet applications, to locate and display information. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.O.(1).9 | Employ concepts and processes for the application of technology to engineering. |
| | | 9.4.12.O.(1).10 | Model technical competence by developing processes and concepts for using different technologies. |
| | | 9.4.12.O.(1).11 | Demonstrate understanding of processes and concepts that are key to understanding the design process. |
| | | 9.4.12.O.(1).12 | Model technical competence by developing and applying processes and concepts in the design process. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.O Science, Technology, Engineering & Mathematics Career Cluster** | | |
| **Pathway** | **9.4.O(2) Science and Mathematics** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.O.(2).1 | Develop an understanding of how science and mathematics function to provide results, answers, and algorithms for engineering activities to solve problems and issues in the real world. |
| | | 9.4.12.O.(2).2 | Apply science and mathematics when developing plans, processes, and projects to find solutions to real world problems. |
| | | 9.4.12.O.(2).3 | Assess the impact that science and mathematics have on society when used to develop projects or products. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams. | 9.4.12.O.(2).4 | Use scientific and mathematical problem-solving skills and abilities to develop realistic solutions to assigned projects, and illustrate how science and mathematics impact problem-solving in modern society. |

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| | | 9.4.12.O.(2).5 | Demonstrate critical thinking abilities and skills needed to review information, to explain statistical analyses, and to translate, interpret, and summarize research and statistical data collected and analyzed as the result of an investigation. |
| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.O.(2).6 | Demonstrate the knowledge and technical skills needed to obtain and succeed in a chosen scientific and mathematical field. |

## STANDARD 9.4P: TRANSPORTATION, DISTRIBUTION & LOGISTICS CAREER CLUSTER

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| **Content Area** | **21st Century Life & Career Skills** |
| **Standard** | **9.4 21ST Century Career and Technical Education** |
| **Strand** | **9.4.P Transportation, Distribution & Logistics Career Cluster** |

| By the end of grade | Content Statement | CPI # | Cumulative Progress Indicator (CPI)<br>*CPIs common to all 16 Career Clusters are in italics.* |
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| **12** | **Academic Foundations:** Academic concepts lay the foundation for the full range of career and postsecondary education opportunities within the career cluster. | 9.4.12.P.1 | *Demonstrate language arts knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.P.2 | *Demonstrate mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities.* |
| | | 9.4.12.P.3 | *Demonstrate science knowledge and skills required to pursue the full-range of postsecondary and career education opportunities.* |
| | **Communication Skills:** All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information. | 9.4.12.P.4 | *Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.* |
| | | 9.4.12.P.5 | *Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.* |

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| | | 9.4.12.P.6 | *Locate, organize, and reference written information from various sources to communicate with others.* |
| | | 9.4.12.P.7 | *Evaluate and use information resources to accomplish specific occupational tasks.* |
| | | 9.4.12.P.8 | *Use correct grammar, punctuation, and terminology to write and edit documents.* |
| | | 9.4.12.P.9 | *Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.* |
| | | 9.4.12.P.10 | *Interpret verbal and nonverbal cues/behaviors to enhance communication.* |
| | | 9.4.12.P.11 | *Apply active listening skills to obtain and clarify information.* |
| | | 9.4.12.P.12 | *Develop and interpret tables, charts, and figures to support written and oral communications.* |
| | | 9.4.12.P.13 | *Listen to and speak with diverse individuals to enhance communication skills.* |
| | | 9.4.12.P.14 | Exhibit public relations skills in order to increase internal and external customer satisfaction. |
| | **Problem-Solving and Critical Thinking:** Critical and creative thinking strategies facilitate innovation and problem-solving | 9.4.12.P.15 | *Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.* |

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| | independently and in teams. | 9.4.12.P.16 | *Employ critical thinking and interpersonal skills to resolve conflicts.* |
| | | 9.4.12.P.17 | *Identify, write, and monitor performance goals to guide progress in assigned areas of responsibility and accountability.* |
| | | 9.4.12.P.18 | *Conduct technical research to gather information necessary for decision-making.* |
| | | 9.4.12.P.19 | Formulate ideas, proposals, and solutions related to problems with this cluster to ensure effective and efficient delivery of products or services to consumers. |
| | | 9.4.12.P.20 | Analyze and evaluate ideas, proposals, and solutions related to problems in this cluster and select the best deliverable to meet business objectives. |
| | | 9.4.12.P.21 | Develop, implement, and evaluate solutions related to problems in this cluster using a structured problem-solving process to improve business functioning. |
| | **Information Technology Applications:** Technology is used to access, manage, integrate, and disseminate information. | 9.4.12.P.22 | *Employ technological tools to expedite workflow.* |
| | | 9.4.12.P.23 | *Operate electronic mail applications to communicate.* |
| | | 9.4.12.P.24 | *Operate Internet applications to perform tasks,* |
| | | 9.4.12.P.25 | *Operate writing and publishing applications to prepare communications.* |

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| | | 9.4.12.P.26 | *Operate presentation applications to prepare and deliver presentations.* |
| | | 9.4.12.P.27 | *Employ spreadsheet applications to organize and manipulate data.* |
| | | 9.4.12.P.28 | *Employ database applications to manage data.* |
| | | 9.4.12.P.29 | *Employ collaborative/groupware applications to facilitate group work.* |
| | | 9.4.12.P.30 | *Employ computer operations applications to manage tasks.* |
| | | 9.4.12.P.31 | *Use computer-based equipment containing embedded computers or processors to control devices.* |
| | | 9.4.12.P.32 | Demonstrate the effective use of computer-based equipment (i.e., equipment driven by embedded computers or processors) to control electromechanical devices commonly used in this cluster. |
| | | 9.4.12.P.33 | Use geographic information systems (GIS) software applications common to this cluster to coordinate and facilitate business-related tasks. |
| | **Systems:**<br><br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations. | 9.4.12.P.34 | *Describe the nature and types of business organizations to build an understanding of the scope of organizations.* |
| | | 9.4.12.P.35 | *Describe and use quality control systems and practices to ensure quality products and services.* |

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| | • Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.P.36 | Analyze and summarize the roles and business functions involved in organizations in this cluster to demonstrate understanding of the industry as a system. |
| | | 9.4.12.P.37 | Analyze performance of organizations in this cluster using industry-accepted metrics to demonstrate understanding of how organizations manage and improve business functioning. |
| | | 9.4.12.P.38 | Demonstrate understanding of important trends influencing the field by assessing and summarizing the impact of various economic, social, and technological changes on an organization as well as on the cluster as a whole. |
| | | 9.4.12.P.39 | Evaluate risk management strategies used in the cluster to prevent and reduce risks and exposures in order to demonstrate understanding of risk management as a tool for improving organizational performance. |
| | | 9.4.12.P.40 | Demonstrate an understanding of the impact that regulations have on business functioning by analyzing and summarizing the roles and functions of government in regulating and supporting organizations in the cluster. |
| | | 9.4.12.P.41 | Demonstrate an understanding of ongoing relationships with both internal and external customer groups in order to sustain business operations in this cluster. |

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| | | 9.4.12.P.42 | Develop plans and budgets to accomplish organizational goals and objectives. |
| | | 9.4.12.P.43 | Develop plans for improving organizational performance in the areas of customer service and operations in order to achieve acceptable levels of customer satisfaction. |
| | | 9.4.12.P.44 | Assess measures to demonstrate compliance with organizational policies and government laws and regulations affecting this cluster. |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.P.45 | *Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.* |
| | | 9.4.12.P.46 | *Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.* |
| | | 9.4.12.P.47 | *Identify emergency procedures that are necessary to provide aid in workplace accidents.* |
| | | 9.4.12.P.48 | *Identify response techniques to create a disaster and/or emergency response plan.* |
| | | 9.4.12.P.49 | Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. |

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| | | 9.4.12.P.50 | Evaluate organizational policies and procedures that contribute to continuous improvement in performance and compliance. |
| | | 9.4.12.P.51 | Assess measures to maintain safe and healthful working conditions in organizations in this cluster. |
| | | 9.4.12.P.52 | Describe how employer rules concerning worksite occupational safety and health promote safe and healthful working conditions in this cluster. |
| | | 9.4.12.P.53 | Assess methods to reduce workplace hazards common in the cluster in order to promote safe and accident-free work environments. |
| | | 9.4.12.P.54 | Assess health hazards common to the cluster in order to promote healthy work environments. |
| | | 9.4.12.P.55 | Describe regulatory areas in the cluster to demonstrate an understanding of key protocols for protecting health, safety, and the environment. |
| | | 9.4.12.P.56 | Analyze and explain major aspects of and benefits promoted by the implementation of health, safety, and environmental management systems in organizations in this cluster. |
| | | 9.4.12.P.57 | Analyze and explain how government agencies promote compliance and improved health, safety, and environmental performance in organizations in this cluster. |

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| | | 9.4.12.P.58 | Analyze and explain the methods employed to promote improved health, safety, and environmental performance in this cluster in order to build understanding of how organizations approach improved performance in important areas. |
| | | 9.4.12.P.59 | Describe health, safety, and environmental procedures and protocols established for organizations in this cluster. |
| | | 9.4.12.P.60 | Evaluate current practices and develop a comprehensive plan to improve health, safety, and environmental performance. |
| | **Leadership and Teamwork:** Effective leadership and teamwork strategies foster collaboration and cooperation between business units, business partners, and business associates toward the accomplishment of organizational goals. | 9.4.12.P.61 | *Employ leadership skills to accomplish goals and objectives.* |
| | | 9.4.12.P.62 | *Employ organizational skills to foster positive working relationships and accomplish organizational goals.* |
| | | 9.4.12.P.63 | *Employ teamwork skills to achieve collective goals and use team members' talents effectively.* |
| | | 9.4.12.P.64 | *Establish and maintain effective relationships in order to accomplish objectives and tasks.* |
| | | 9.4.12.P.65 | *Conduct and participate in meetings to accomplish tasks.* |
| | | 9.4.12.P.66 | *Employ mentoring skills to assist others.* |

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| | **Ethics and Legal Responsibilities:** Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors. | 9.4.12.P.67 | *Apply ethical reasoning to a variety of situations in order to make ethical decisions.* |
| | | 9.4.12.P.68 | *Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.* |
| | | 9.4.12.P.69 | Analyze and summarize legal responsibilities associated with different roles and functions within organizations in this cluster to demonstrate awareness of the influence that laws and regulations have on ethics in the workplace. |
| | | 9.4.12.P.70 | Demonstrate understanding of corporate policies in light of ethical and legal responsibilities. |
| | | 9.4.12.P.71 | Evaluate strategies for responding to unethical or illegal actions of individuals and organizations and demonstrate how to respond to such situations. |
| | **Employability and Career Development:** Employability skills and career and entrepreneurship opportunities build the capacity for successful careers in a global economy. | 9.4.12.P.72 | *Identify and demonstrate positive work behaviors and personal qualities needed to succeed in the classroom and/or to be employable.* |
| | | 9.4.12.P.73 | *Develop a Personalized Student Learning Plan to meet career goals and objectives.* |
| | | 9.4.12.P.74 | *Demonstrate skills related to seeking and applying for employment in a desired job.* |
| | | 9.4.12.P.75 | *Maintain a career portfolio to document knowledge, skills, and experience in a career field.* |

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| | | 9.4.12.P.76 | *Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.* |
| | | 9.4.12.P.77 | *Identify and exhibit traits for retaining employment.* |
| | | 9.4.12.P.78 | *Identify and explore careers in one or more career pathways to build an understanding of the opportunities available in the cluster.* |
| | | 9.4.12.P.79 | *Examine requirements for career advancement to plan for continuing education and training.* |
| | | 9.4.12.P.80 | *Research professional development opportunities needed to keep current on relevant trends and information within the cluster.* |
| | | 9.4.12.P.81 | *Examine licensing, certification, and credentialing requirements at the national, state, and local levels to maintain compliance with industry requirements.* |
| | | 9.4.12.P.82 | *Examine employment opportunities in entrepreneurship as an option for career planning.* |
| | | 9.4.12.P.83 | Evaluate written organizational policies, rules, and procedures in order to function ethically and effectively within the workplace. |
| | | 9.4.12.P.84 | Assess and evaluate career opportunities in one or more pathways to broaden awareness of careers available in the cluster. |

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| | **Technical Skills:** Technical knowledge and skills play a role in all careers within the cluster and pathway. | 9.4.12.P.85 | *Employ information management techniques and strategies to assist in decision-making.* |
| | | 9.4.12.P.86 | *Employ planning and time management skills and tools to enhance results and complete work tasks.* |
| | | 9.4.12.P.87 | Analyze and assess the roles and functions of transportation-related technological systems used in this cluster in order to demonstrate awareness of necessary technical skills. |
| | | 9.4.12.P.88 | Measure and analyze the output of technological systems used in this cluster in order to enhance performance and reliability of timing, cost projecting, and forecasting in transportation operations. |
| | | 9.4.12.P.89 | Summarize the potential impact technological systems may have on health, safety, and environmental risks in this cluster in order to demonstrate an understanding of the impact a technological system can have on managing compliance. |
| | | 9.4.12.P.90 | Evaluate and recommend a technological system for implementation to demonstrate an understanding of the factors involved in selecting an appropriate system to manage risk and compliance in this cluster. |

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| | | 9.4.12.P.91 | Research and describe efforts to improve the use and performance of technological systems in this cluster in order to provide the correct data needed to make informed decisions related to managing risk and compliance. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.P Transportation, Distribution & Logistics Career Cluster** | | |
| **Pathway** | **9.4.P(1) Transportation Operations** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.P.(1).1 | Develop transportation plans to move people and/or goods to meet customer requirements. |
| | | 9.4.12.P.(1).2 | Assess performance of transportation operations to improve service levels, enhance quality, and reduce costs |
| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and | 9.4.12.P.(1).3 | Assess compliance with company policies and government laws and regulations to better manage safety, security, health, economic, and environmental risk. |

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| | continuous improvement. | | |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.P Transportation, Distribution & Logistics Career Cluster** | | |
| **Pathway** | **9.4.P(2) Logistics Planning and Management** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.P.(2).1 | Analyze company or customer needs to develop targeted and successful logistics planning and management services. |
| | | 9.4.12.P.(2).2 | Analyze the performance of logistics systems to provide targeted and successful logistics planning and management services. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.P Transportation, Distribution & Logistics Career Cluster** | | |
| **Pathway** | **9.4.P(3) Warehousing and Distribution Center Operations** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.P.(3).1 | Plan storage of incoming and outgoing goods and materials to demonstrate efficient and effective warehouse and distribution center operations. |
| | | 9.4.12.P.(3).2 | Assess performance of warehousing and distribution operations to meet customer and business requirements |

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| | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.P.(3).3 | Analyze warehouse and distribution center operations for compliance with company policies and government laws and regulations in order to improve operations and promote safe and environmentally friendly workplaces. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.P Transportation, Distribution & Logistics Career Cluster** | | |
| **Pathway** | **9.4.P(4) Planning Implementation** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.P.(4).1 | Develop preventive maintenance plans and systems to meet business and equipment manufacturer requirements. |
| | | 9.4.12.P.(4).2 | Monitor and evaluate the performance of maintenance plans and systems. |
| | | 9.4.12.P.(4).3 | Develop and manage repair plans. |
| | | 9.4.12.P.(4).4 | Develop plans for improving facilities/equipment/system performance. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.P Transportation, Distribution & Logistics Career Cluster** | | |
| **Pathway** | **9.4.P(5) Transportation Systems/Infrastructure Planning, Management, and Regulations** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.P.(5).1 | Assess infrastructure conditions and plan maintenance in order to enhance systems used to transport people and products. |
| | | 9.4.12.P.(5).2 | Assess and plan implementation of transportation services to provide safe, reliable, high quality transportation for people and products. |
| | | 9.4.12.P.(5).3 | Assess and manage transportation systems to improve system utilization, flow, safety, and environmental performance. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.P Transportation, Distribution & Logistics Career Cluster** | | |
| **Pathway** | **9.4.P(6) Health, Safety, and Environmental Management** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Safety, Health, and Environment:** Implementation of health, safety, and environmental management systems and organizational policies and procedures impacts organizational performance, regulatory compliance, and continuous improvement. | 9.4.12.P.(6).1 | Evaluate and implement rules and regulations to comply with health, safety, and environmental requirements. |
| | | 9.4.12.P.(6).2 | Assess and recommend health, safety, and environmental improvements to promote safe, healthy transportation and logistics environments. |

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| **Content Area** | **21st Century Life & Career Skills** | | |
| **Standard** | **9.4 21ST Century Career and Technical Education** | | |
| **Strand** | **9.4.P Transportation, Distribution & Logistics Career Cluster** | | |
| **Pathway** | **9.4.P(7) Sales and Service** | | |
| **By the end of grade** | **Content Statement** | **CPI #** | **Cumulative Progress Indicator (CPI)** |
| **12** | **Systems:**<br>• Roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment impact business operations.<br>• Key organizational systems impact organizational performance and the quality of products and services.<br>• Understanding the global context of 21st-century industries and careers impacts business operations. | 9.4.12.P.(7).1 | Demonstrate knowledge of transportation, logistics, and distribution-related sales and service operations on an ongoing basis. |
| | | 9.4.12.P.(7).2 | Demonstrate knowledge of transportation-related products and services in order to promote development of existing and future client base. |

**More About Career and Technical Education**
http://www.state.nj.us/education/voc/

1. As per N.J.A.C. 6A:19-3.1, "career and technical education program" means a program curriculum, which shall include:
    - A coherent sequence of courses of not fewer than three identifiable courses.
    - Classroom instruction combined and coordinated with field, shop, or laboratory experiences, structured learning experiences, or other experiences which are appropriate to the competencies of the 16 career clusters.
    - Academic content that is aligned to the New Jersey Core Curriculum Content Standards for secondary programs.
    - Content that meets industry-approved or nationally recognized skill standards.
    - Industry-based skill certificates, when available.
    - Opportunities to participate in structured learning experiences.
    - Opportunities to participate in career and technical student organizations.
    - A career and technical education safety and health program and plan.
    - Adequate resources required to operate the program, including sufficient and appropriate instructional and support staff, facilities, and equipment.
    - A plan to establish relevant postsecondary education and training linkages.
    - Procedures for the evaluation of student and program performance, and methods to improve programs based upon evaluation results.

2. Carl D. Perkins Career and Technical Education Improvement Act of 2006

    SEC. 2. PURPOSE.

    The purpose of this Act is to develop more fully the academic and career and technical skills of secondary education students and postsecondary education students who elect to enroll in career and technical education programs, by-

    (1) building on the efforts of States and localities to develop challenging academic and technical standards and to assist students in meeting such standards, including preparation for high skill, high wage, or high demand occupations in current or emerging professions;

    (2) promoting the development of services and activities that integrate rigorous and challenging academic and career and technical instruction, and that link secondary education and postsecondary education for participating career and technical education students;

    (3) increasing State and local flexibility in providing services and activities designed to develop, implement, and improve career and technical education, including tech prep education;

    (4) conducting and disseminating national research and disseminating information on best practices that improve career and technical education programs, services, and activities;

    (5) providing technical assistance that-

    (A) promotes leadership, initial preparation, and professional development at the State and local levels; and

    (B) improves the quality of career and technical education teachers, faculty, administrators, and counselors;

    (6) supporting partnerships among secondary schools, postsecondary institutions, baccalaureate degree granting institutions, area career and technical education schools, local workforce investment boards, business and industry, and intermediaries; and

    (7) providing individuals with opportunities throughout their lifetimes to develop, in conjunction with other education.

3. "New Jersey Five-Year State Plan for Career and Technical Education" means the State plan for career and technical education created as per the requirements of the Carl D. Perkins Career and Technical Education Act of 2006 and approved by the New Jersey State Board of Education in June 2009. The State plan was created in consultation with academic and career and technical education teachers, faculty, and administrators; career guidance and academic counselors; eligible recipients; charter school authorizers and organizers consistent with State law; parents and students; institutions of higher education; the State tech prep coordinator and representatives of tech prep consortia (if applicable); entities participating in activities described in section 111 of Public Law 105-220; interested community members (including parents and community organizations); representatives of special populations; representatives of business and industry (including representatives of small business); and representatives of labor organizations in the State, and in consultation with the Governor of the State.

4. **"Career Clusters"** mean groupings of occupations/career specialties used as an organizing tool for curriculum design and instruction. Occupations/career specialties are grouped into career clusters based on the fact that they require a set of common knowledge and skills for career success (see States' Career Cluster Initiative, below). The knowledge and skills represented by career clusters prepare learners for a full range of occupations/career specialties, focusing on the holistic, polished blend of technical, academic, and employability knowledge and skills. This approach enhances the more traditional approach to career and technical education in which instruction may focus on one or two occupations and emphasize only specific occupational skills.

5. States' Career Cluster Initiative: The States' Career Clusters Initiative (SCCI) is an initiative established under the National Career Technical Education Foundation to provide career clusters as a tool for seamless transition from education to career in this era of changing workplace demands. SCCI helps states as they connect career technical education (CTE) to education, workforce preparation, and economic development. To this end, SCCI develops new products and promotes information-sharing, techniques, and methods to aid the development and implementation of career clusters within states.

6. **"Career Pathways"** mean sub-groupings of occupations/career specialties used as an organizing tool for curriculum design and instruction. Occupations/career specialties are grouped into pathways based on the fact that they require a set of common knowledge and skills for career success.

7. **"Knowledge and Skills"** mean industry-validated statements that describe what learners/employees need to know and be able to do for career success within a career cluster and/or career pathway.

8. National Association of State Directors of Career and Technical Education Consortium: Founded in 1920, the National Association of State Directors of Career Technical Education Consortium is the Washington, D.C.-based professional society of the state and territory agency heads responsible for career technical education. The state directors are committed to leadership and results.

9. **National Advisory Committees (NACs):** The career cluster national advisory committees of the States' Career Clusters Initiative are composed of leaders from education, business/industry, government entities, professional associations, and labor. NACs collaborate in regard to content review of Cluster Knowledge and Skills

Statements and other career cluster-related business. The career cluster leaders for each of the 16 national advisory committees are:

- Agriculture, Food, & Natural Resources: National Council for Agricultural Education
- Architecture & Construction: Home Builders Institute
- Arts, Audio/Video Technology & Communications: VTECS, A Consortium for Innovative Career and Workforce Development Resources
- Business Management & Administration: National Association of State Directors of Career and Technical Education Consortium
- Education & Training: Michigan Department of Labor & Economic Growth and Career Communications, Inc.
- Finance: National Association of State Directors of Career and Technical Education Consortium
- Government & Public Administration: National Association of State Directors of Career and Technical Education Consortium
- Health Science: The National Consortium on Health Science & Technology Education
- Hospitality & Tourism: National Association of State Directors of Career and Technical Education Consortium
- Human Services: National Association of State Directors of Career and Technical Education Consortium
- Information Technology: CompTIA
- Law, Public Safety, Corrections & Security: The National Partnership for Careers in Law, Public Safety, Corrections and Security
- Manufacturing: National Council for Advanced Manufacturing
- Marketing: National Association of State Directors of Career and Technical Education Consortium
- Science, Technology, Engineering & Mathematics: Project Lead the Way
- Transportation, Distribution, & Logistics: Interim Leader: Illinois Office of Educational Services

10. **Standard 9.4 Pre-Focus Groups:** The following career and technical education teacher professional organizations and individuals provided input to the New Jersey Department of Education, Office of Career and Technical Education, in developing the draft of Standard 9.4 Career and Technical Education:
    - **Agriculture:** NJ FFA Association state director and teacher advisors
    - **Arts, A/V Technology, and Communications:** NJ Television Educators Consortium and Ms. Christina Marte, Ocean County Vocational Technical School District, National Dance Education Organization Teacher of the Year
    - **Business, Management, and Administration:** New Jersey Future Business Leaders of America
    - **Health:** NJ Health Occupations Students of America
    - **Hospitality and Tourism:** Cape May County Technical School District Hospitality & Tourism Tech Prep grant program
    - **Human Services:** NJ Family, Home and Consumer Sciences Career and Technical Student Association
    - **IT:** NJ Technology Student Association and the NJ Business/Technology Education Association
    - Law, Public Safety, Corrections & Security: Cape May County Vocational School District Law and Public Safety Tech Prep grant program
    - **Manufacturing:** Career and Technical Education Association of New Jersey
    - **Marketing:** NJ DECA, an Association of Marketing Students

- **STEM:** Technology: Project Lead the Way Engineering grant program, Watchung Hills Regional High School and Project Lead the Way Science grant program, Williamstown High School
- **Transportation, Distribution & Logistics:** Dennis Sienicki, Hunterdon County Polytech automotive instructor and New Jersey evaluation team leader for National Automotive Technician Education Foundation

11. **"Career and Technical Education Teaching Certificates"** means an instructional certificate with a career and technical education endorsement, issued by the New Jersey Department of Education, which authorize the holder to teach approved career and technical education programs in all public schools in accord with N.J.A.C. 6A:9-11.2. N.J.A.C. 6A:9-9.2(a)9.iv, Endorsements and authorizations Website: http://www.state.nj.us/education/educators/license/cte/
12. **New Jersey Career and Technical Education Advisory Council:** The New Jersey Department of Education, Office of Career and Technical Education (OCTE), formed the New Jersey Career and Technical Education Advisory Council (Advisory Council) in accordance with Section 122(a)(3) of the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV) and the Guide for Submission of State Plans, in order to initiate a process to elicit public input on the draft Five-Year State Plan.