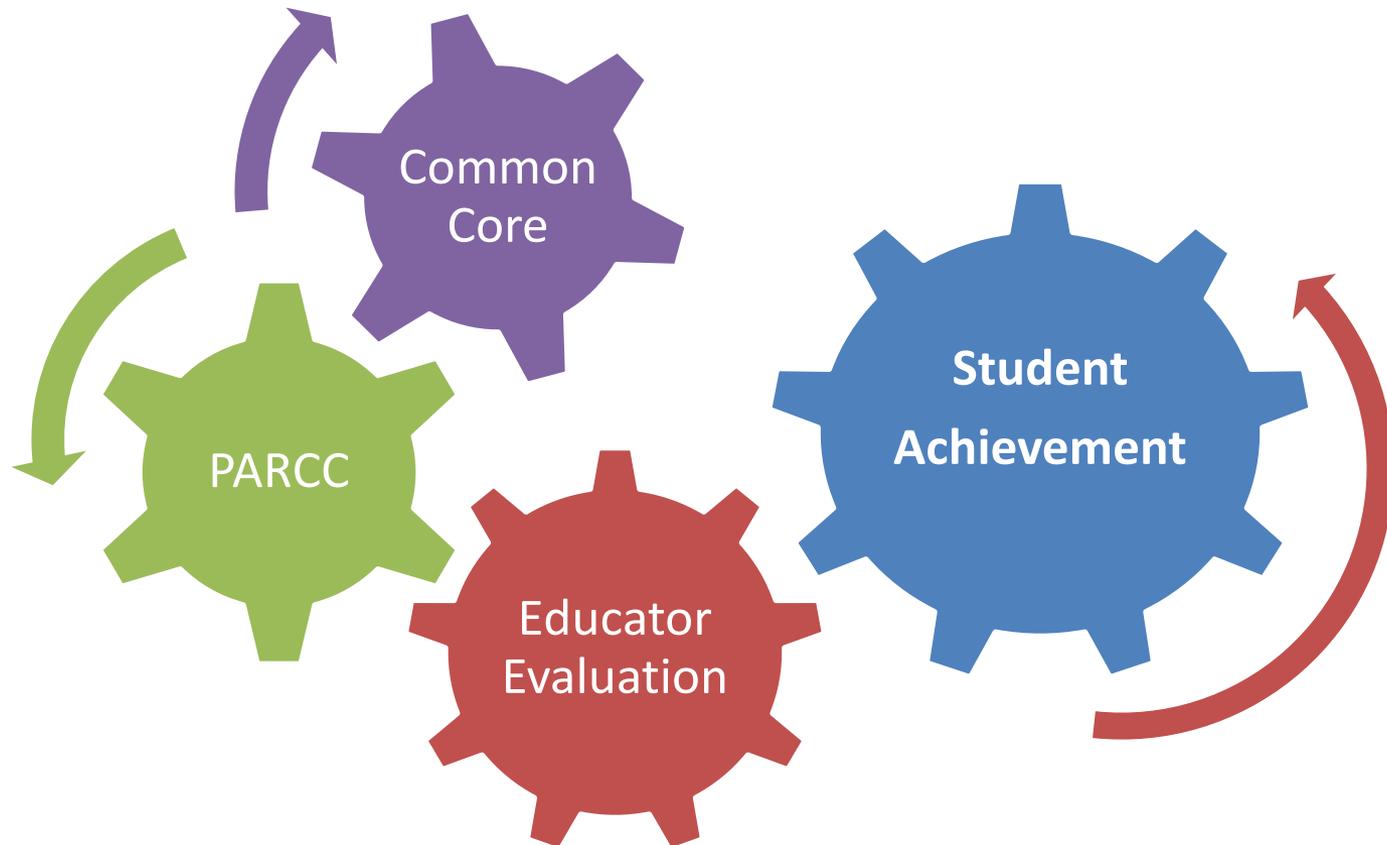




# Shifting Gears!

Using the CCSS, PARCC and Educator Evaluation to Drive Student Achievement



Why do we need the CCSS?

---

**Why the Common Core?**

**How are these Standards different?**

---



## *Why are we doing this? We have had standards.*

---

Before Common Core State Standards we had standards, but rarely did we have **standards-based instruction**.

- ✓ Long lists of broad, vague statements
- ✓ Mysterious assessments
- ✓ Coverage mentality
- ✓ Focused on teacher behaviors – “the inputs”



# Results

---

Previous state standards did not improve student achievement.

- ✓ Gaps in achievement
- ✓ Gaps in expectations
- ✓ NAEP results
- ✓ ACT 2012 data – College Readiness Benchmark

All 4 subject areas:	<b>25%</b>
3 subject areas:	<b>15%</b>
2 subject areas:	<b>17%</b>
1 subject area:	<b>15%</b>
None	<b>28%</b>

- ✓ College remediation rates



# What are our expectations?

---

Based on the beliefs that

- A quality education is a key factor in providing all children with opportunities for their future
- It is not enough to simply complete school, or receive a credential – students need critical knowledge and skills
- This is not a 12<sup>th</sup> grade or high school issue. It is an education system issue.

**Quality implementation of the Common Core State Standards is a necessary condition for providing all students with the opportunities to be successful after high school.**



# Principles of the CCSS

---

Fewer - Clearer - Higher

- Aligned to requirements for college and career readiness
- Based on evidence
- Honest about time



# Structure of the ELA Standards

---

- Four Strands: Reading, Writing, Speaking and Listening, Language
- There are Reading and Writing Strands for History/Social Studies, Science and Technical Subjects
- Text complexity standards are listed by grade “bands”: K-1, 2-3, 4-5, 6-8, 9-10, 11-12, CCR – College and Career Ready)



**Strand**



**Anchor  
Standard**



**Grade-  
Specific  
Standard**



# Identify the Standard

---

**RI . 4 . 2**



Strand



Grade



Standard Number



# The CCSS Requires Three Shifts in ELA/Literacy

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1. **Building knowledge through content-rich nonfiction**
2. Reading, writing, and speaking grounded in **evidence from text**, both literary and informational
3. Regular practice with **complex text** and its **academic language**



# ELA Shift #1: Content-Rich Nonfiction

---

## Balance of literary to informational texts

- 50/50 in K-5
- 45/55 in grades 6-8
- 70/30 in grades 9-12
- Beginning in grades 2, students read more complex texts, combining foundational skills with reading comprehension.
- Reading aloud texts that are well-above grade level are used K-5 and beyond to build vocabulary and background knowledge.



## ELA Shift #2: Using Text Evidence

---

- Most college and workplace writing requires evidence.
- Ability to cite evidence differentiates strong from weak student performance on NAEP
- Evidence is a major emphasis of the ELA Standards:
  - Reading Standard 1
  - Writing Standard 9
  - Speaking and Listening Standards 2, 3, and 4



# Non-Examples and Examples

---

## Not Text-Dependent

In “Casey at the Bat,” Casey strikes out. Describe a time when you failed at something.

In “Letter from a Birmingham Jail,” Dr. King discusses nonviolent protest. Discuss, in writing, a time when you wanted to fight against something that you felt was unfair.

In “The Gettysburg Address” Lincoln says the nation is dedicated to the proposition that all men are created equal. Why is equality an important value to promote?

## Text-Dependent

What makes Casey’s experiences at bat humorous?

What can you infer from King’s letter about the letter that he received?

“The Gettysburg Address” mentions the year 1776. According to Lincoln’s speech, why is this year significant to the events described in the speech?

## Writing About Biology

### The Double Helix

The following excerpts are from *The Double Helix*, James Watson's account of the discovery of the structure of DNA.

The  $\alpha$ -helix had not been found by staring at X-ray pictures; the essential trick, instead, was to ask which atoms like to sit next to each other. In place of pencil and paper, the main working tools were a set of molecular models superficially resembling the toys of preschool children. . . .

I went ahead spending most evenings at the films, vaguely dreaming that at any moment the answer would suddenly hit me. . . .

Not until the middle of the next week, however, did a nontrivial idea emerge. It came while I was drawing the fused rings of adenine on paper. Suddenly I realized the potentially profound implications of a DNA structure in which the adenine residue formed hydrogen bonds similar to those found in crystals of pure adenine. If DNA was like this, each adenine residue would form two hydrogen bonds to an adenine residue related to it by a 180-degree rotation. Most important, two symmetrical hydrogen bonds could also hold together pairs of guanine, cytosine, or thymine.

I thus started wondering whether each DNA molecule consisted of two chains with identical base sequences held together by hydrogen bonds between pairs of identical bases. There was the complication, however, that such a structure could not have a regular backbone since the purines (adenine and guanine) and the pyrimidines (thymine and cytosine) have different shapes.

Despite the messy backbone, my pulse began to race. . . . The existence of two intertwined chains with identical base sequences

could not be a chance matter. Instead it would strongly suggest that one chain in each molecule had at some earlier stage served as the template for the synthesis of the other chain. . . .

[One day elapsed during which American crystallographer Jerry Donahue convinced Watson that his model was incorrect.]

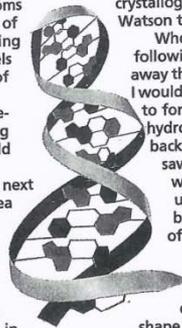
When I got to our still empty office the following morning, I quickly cleared away the papers from my desk top so that I would have a large, flat surface on which to form pairs of bases held together by hydrogen bonds. Though I initially went back to my like-with-like prejudices, I saw all too well that they led nowhere. When Jerry came in I looked up, saw that it was not Francis, and began shifting the bases in and out of various other pairing possibilities.

Suddenly I became aware that an adenine-thymine pair held together by two hydrogen bonds was identical in shape to a guanine-cytosine pair held together by at least two hydrogen bonds. All the hydrogen bonds seemed to form naturally; no fudging was required to make the two types of base pairs identical in shape. Quickly I called Jerry over to ask him whether this time he had any objection to my new base pairs. When he said no, my morale skyrocketed. . . .

Upon his arrival Francis did not get more than halfway through the door before I let loose that the answer to everything was in our hands. . . .

#### Write

James Watson used time away from his laboratory and a set of models similar to preschool toys to help him solve the puzzle of DNA. In an essay discuss how play and relaxation help promote clear thinking and problem solving.



124 James D. Watson, excerpted from *The Double Helix*. Copyright © 1968 James D. Watson. Reprinted with permission of Atheneum Publishers, an imprint of Macmillan Publishing Company.

## Example?

*James Watson used time away from his laboratory and a set of models similar to preschool toys to help him solve the puzzle of DNA. In an essay discuss how play and relaxation help promote clear thinking and problem solving.*



# CCSS Informational Text Assessment Question:

---

High school students read an excerpt of James D. Watson's *The Double Helix* and respond to the following:

*What mistakes did Watson make along the way to his discovery? What was his response to this mistake?*



# ELA Shift #3: Complex Text & Academic Language

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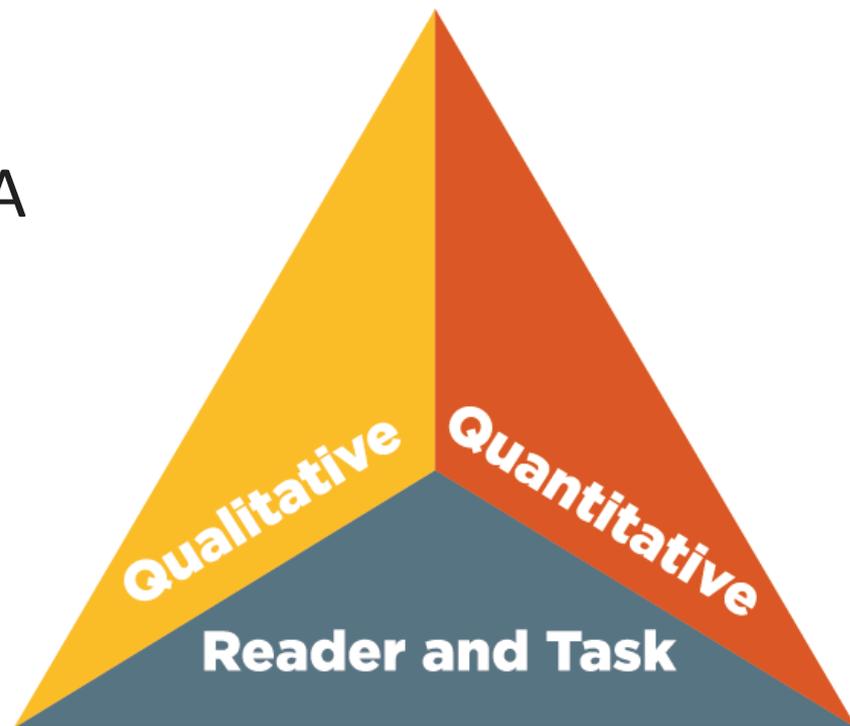
- There is a 4 year gap in the complexity of what students read by the end of high school and college .
- What students can read, in terms of complexity is the greatest predictor of success in college (ACT study).
- <50% of graduates can read sufficiently complex texts.
- Standards focus on building academic vocabulary to improve comprehension.
- Standards include a staircase of text complexity from elementary through high school.

# Text Complexity

---

- Appendix A
- Supplement to Appendix A
- Appendix B

CCSS address *what* and *how* students read.



# Which text is more complex?

---

## Text 1

Lincoln was shaken by the presidency. Back in Springfield, politics had been a sort of exhilarating game; but in the White House, politics was power, and power was responsibility. Never before had Lincoln held executive office. In public life he had always been an insignificant legislator whose votes were cast in concert with others and whose decisions in themselves had neither finality nor importance. As President he might consult with others, but innumerable grave decisions were in the end his own, and with them came a burden of responsibility terrifying in its dimensions.

## Text 2

According to those who knew him, Lincoln was a man of many faces. In repose, he often seemed sad and gloomy. But when he began to speak, his expression changed. “The dull, listless features dropped like a mask,” said a Chicago newspaperman. “The eyes began to sparkle, the mouth to smile, the whole countenance was wreathed in animation, so that a stranger would have said, ‘Why, this man, so angular and solemn a moment ago, is really handsome.’ ”



# What are the Qualitative Features of Complex Text?

---

- Subtle and/or frequent transitions
- Multiple and/or subtle themes and purposes
- Density of information
- Unfamiliar settings, topics or events
- Lack of repetition, overlap or similarity in words and sentences
- Complex sentences
- Uncommon vocabulary
- Lack of words, sentences or paragraphs that review or pull things together for the student
- Longer paragraphs
- Any text structure which is less narrative and/or mixes structures



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Forty-six states have now adopted these shared standards so their students can compete and succeed on a world stage.

This site is here to provide free, high-quality resources to educators now doing the hard work of implementing these higher standards.

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Free resources especially useful for implementation this year

### Close reading exemplars

To be college and career ready, students need to be able to read sufficiently complex texts on their own and gather evidence, knowledge, and insight from those texts. These close reading exemplars intend to model how teachers can support their students as they undergo the kind of careful reading the Common Core State Standards require.

Each of these exemplars features the following: readings tasks in which students are asked to read and reread passages and respond to a series of **TEXT DEPENDENT QUESTIONS**; vocabulary and syntax tasks which linger over noteworthy or challenging words and phrases; discussion tasks in which students are prompted to use text evidence and refine their thinking; and writing tasks that assess student understanding of the text.

We encourage teachers to take these exemplars and modify them to suit the needs of their students. If you try these lessons in your classroom and have ideas about how to make them better, **TELL US WHAT YOU THINK**.

Grade 7, "The Adventures of Tom Sawyer"

"Soon the free boys would come tripping along on all sorts of delicious expeditions, and they would make a world of fun of [Tom] for having to work- the very thought of it burnt him like fire..."  
READ DOCUMENT

Grade 8, "Narrative of the Life of Frederick Douglass, an American Slave"

"...The silver trump of freedom had roused my soul to eternal wakefulness. Freedom now appeared, to disappear no more forever."

READ DOCUMENT

Grade 7, "Farewell to Manzanar" and "Unbroken"

"The men had been adrift for twenty-seven days. Borne by an equatorial current, they had floated at least one thousand miles, deep into Japanese-controlled waters..."  
READ DOCUMENT

Grades 11-12, "Living Like Weasels"

"A yellow bird flew behind me. It caught my eye; I swiveled around- and the next instant, inexplicably, I was looking down at a weasel, who was looking up at me..."  
READ DOCUMENT

Grades 9-10, "Gettysburg Address"

"Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal..."  
READ DOCUMENT

Grade 6, "The Making of a Scientist"

"Not having experience with many fathers, I didn't realize how remarkable he was. How did he learn the deep principles of science and the love of it, what's behind it, and why it's worth doing?"  
READ DOCUMENT

Grade 6, "The Great Fire"

Grade 8, "Words We Live By"

Grade 8, "The Long Night of the Little Boats"

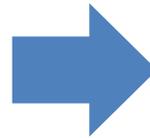


# How should the shifts influence practice?

---

From...

Content knowledge  
*primarily from  
teacher-led lecture*



To...

Content knowledge  
comes from a *balance*  
of **reading, writing**  
lecture, and hands-on  
experience

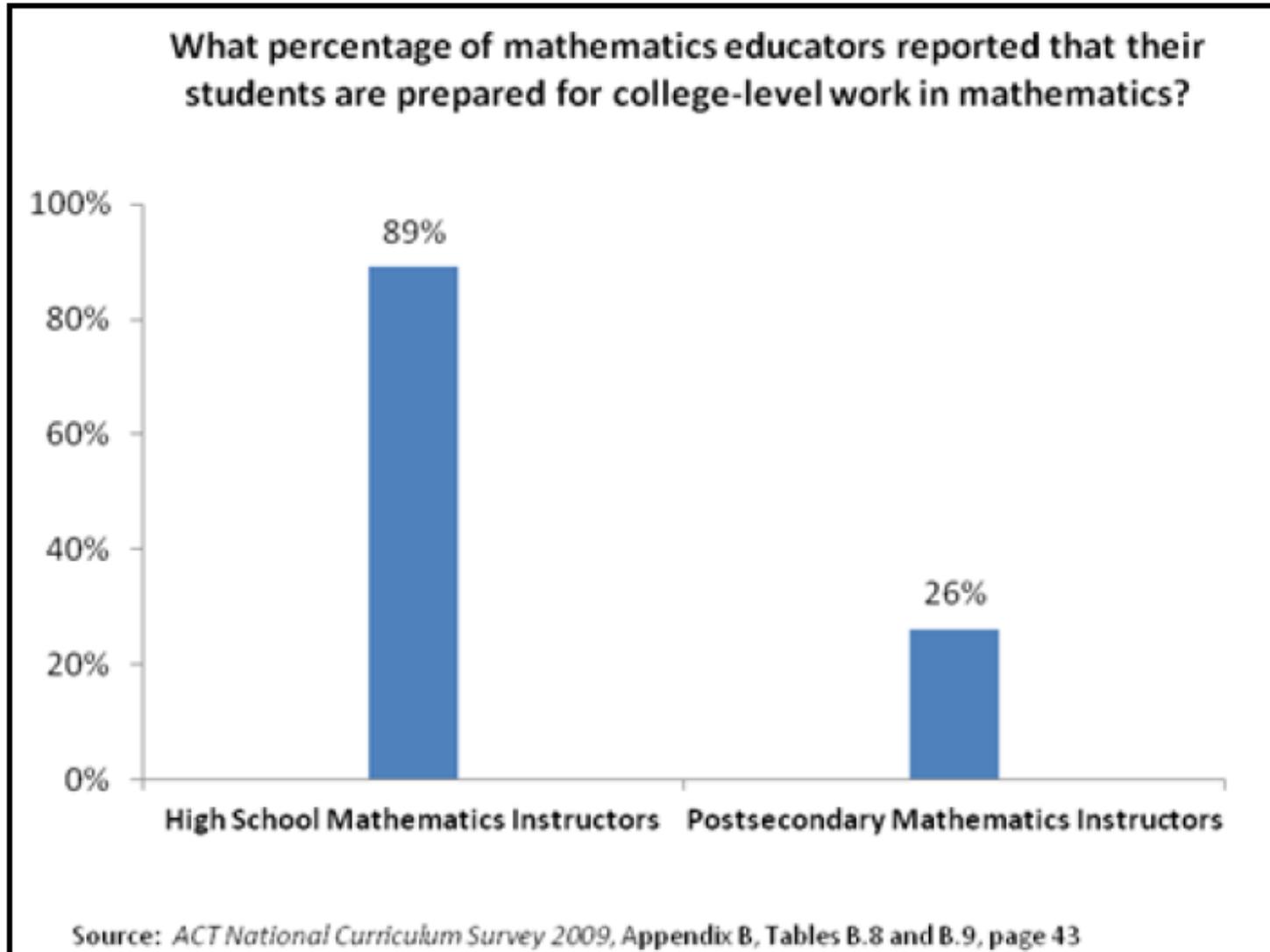


# Introduction to the Math Shifts of the Common Core State Standards

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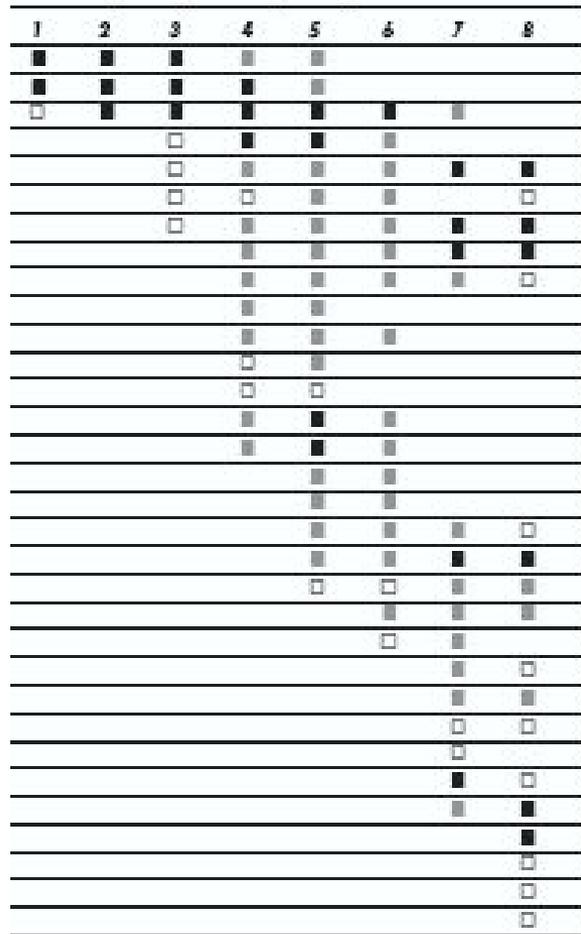


# College Math Professors Feel HS students Today are Not Prepared for College Math

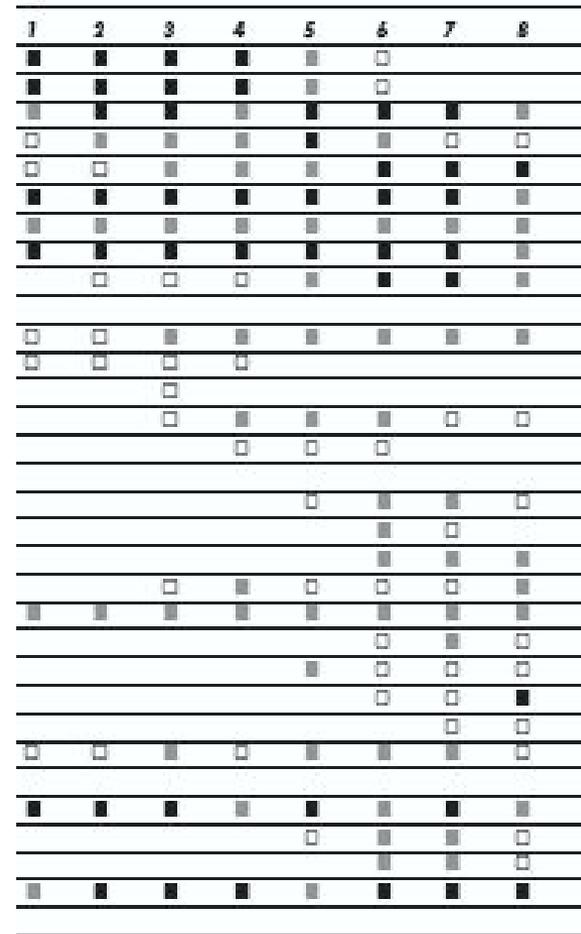


# The shape of math in A+ countries

Mathematics topics intended at each grade by at least two-thirds of A+ countries



Mathematics topics intended at each grade by at least two-thirds of 21 U.S. states



<sup>1</sup> Schmidt, Houang, & Cogan, "A Coherent Curriculum: The Case of Mathematics." (2002).



# Structure of the Standards

---

- **Domains** are large groups of related standards. Domains change from grade to grade to reflect the changing focus of each grade. Standards from different domains may sometimes be closely related.
- **Clusters** are groups of related standards. Each domain has 1 – 4 clusters. Standards from different clusters may sometimes be closely related.
- **Standards** define what students should understand and be able to do.





# Identify the Standard

---

**5.NBT.4**



Grade



Domain



Standard Number

**3.OA.C**



Grade



Domain



Cluster



# The CCSS Requires Three Shifts in Mathematics

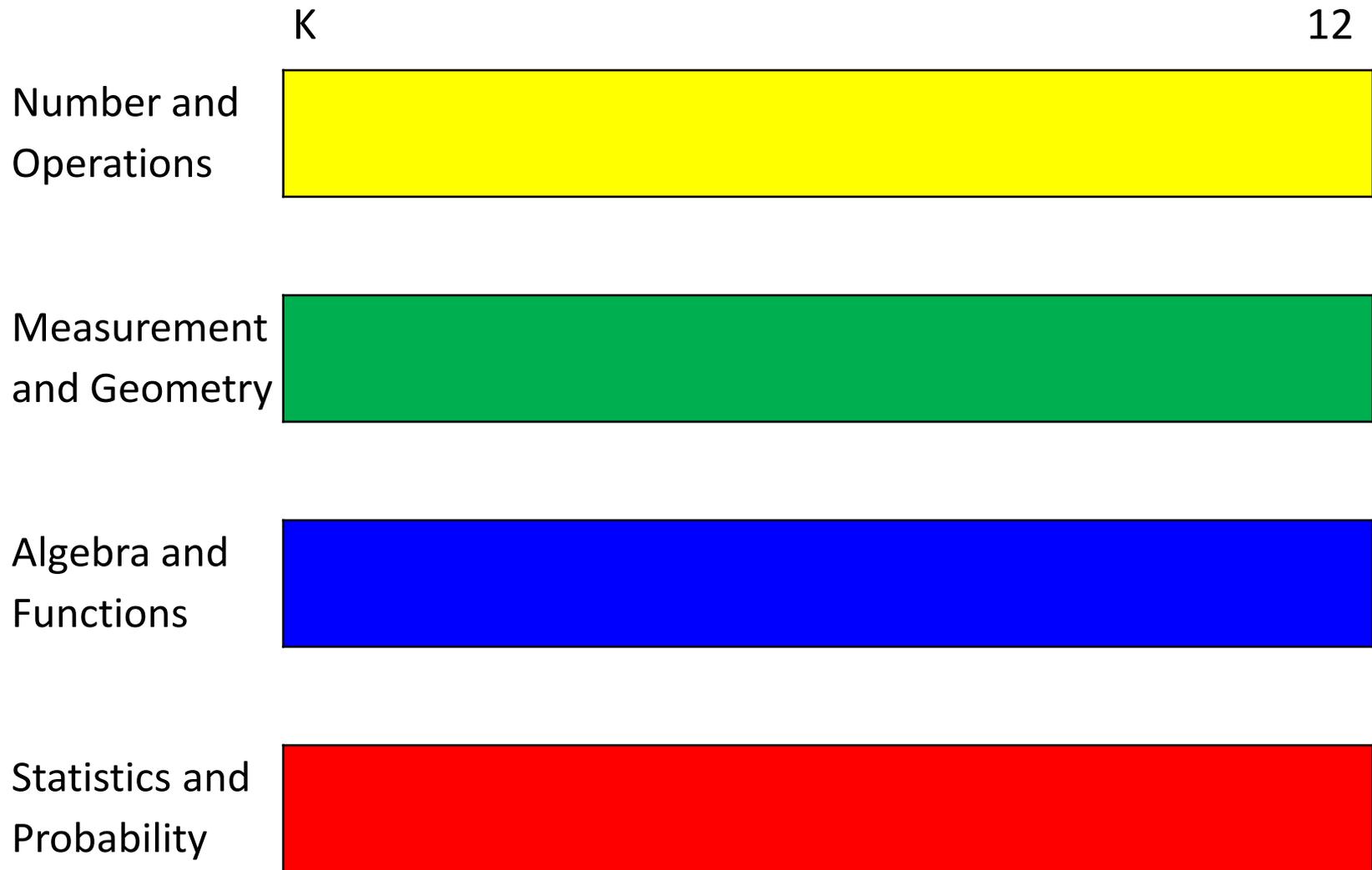
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1. **Focus** strongly where the standards focus.
2. **Coherence: Think** across grades, and **link** to major topics.
3. **Rigor:** In major topics, pursue **conceptual understanding**, procedural skill and **fluency**, and **application**.



# Traditional U.S. Approach

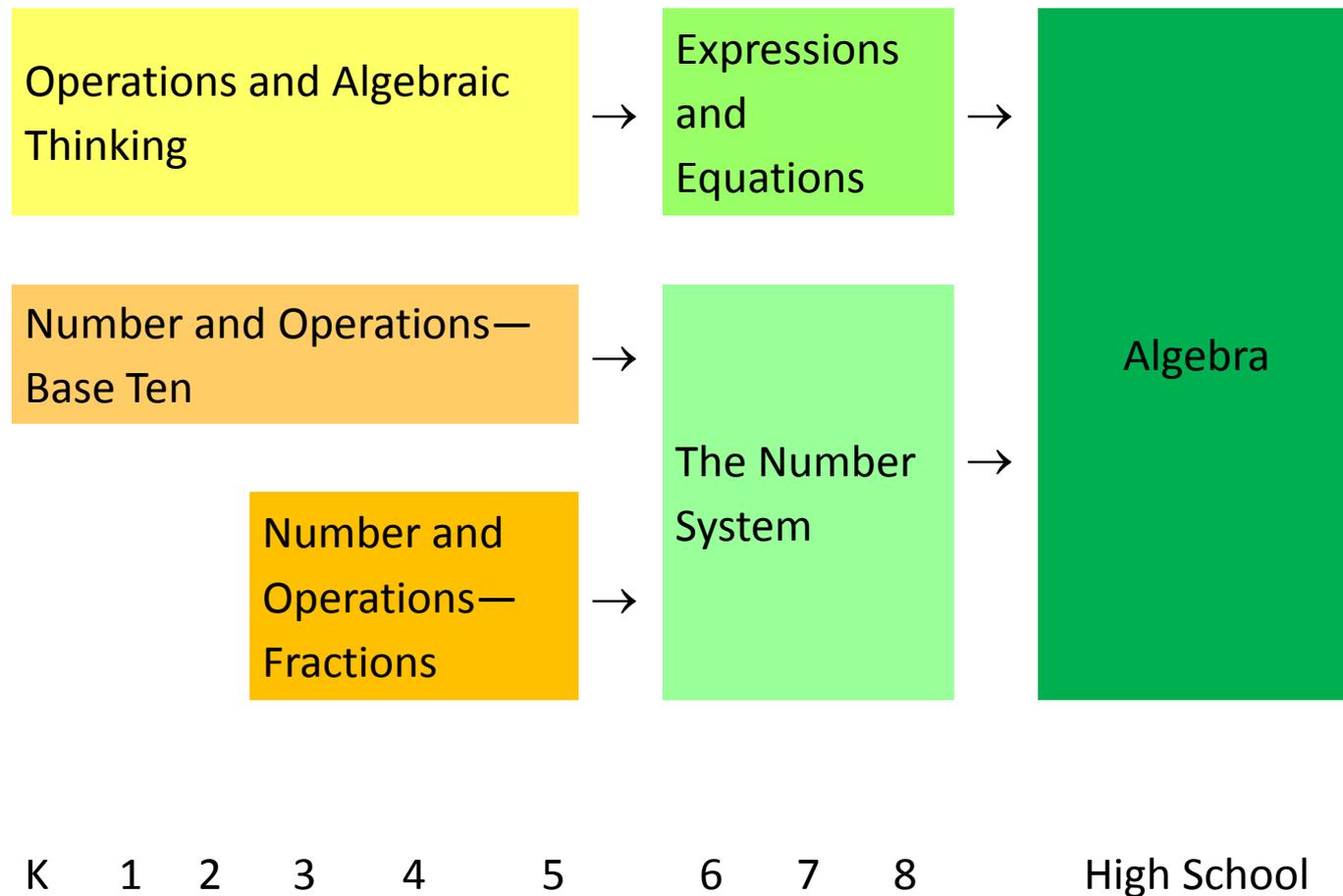
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# Shift #1: Focus (within Number and Operations)

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# Priorities in Mathematics

---

<b>Grade</b>	<b>Priorities in Support of Rich Instruction and Expectations of Fluency and Conceptual Understanding</b>
<b>K–2</b>	<b>Addition and subtraction, measurement using whole number quantities</b>
<b>3–5</b>	<b>Multiplication and division of whole numbers and fractions</b>
<b>6</b>	<b>Ratios and proportional reasoning; early expressions and equations</b>
<b>7</b>	<b>Ratios and proportional reasoning; arithmetic of rational numbers</b>
<b>8</b>	<b>Linear algebra/linear functions</b>



## Shift #2: Coherence

---

- Carefully connect the learning **within and across grades** so that students can build new understanding on foundations built in previous years.
- Each standard is not a new event, but an extension of previous learning.

“The Standards are not so much built from topics as they are woven out of progressions.”

Structure is the Standards, Publishers' Criteria for Mathematics,



# Coherence: Link to Major Topics Within Grades

---

## *Example: Data Representation*

Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*

Standard  
3.MD.3

# Coherence: Link to Major Topics Across Grades

One of several staircases to algebra designed in the OA domain.

## Expressions and Equations

6.EE

3. Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression  $3(2 + x)$  to produce the equivalent expression  $6 + 3x$ ; apply the distributive property to the expression  $24x + 18y$  to produce the equivalent expression  $6(4x + 3y)$ ; apply properties of operations to  $y + y + y$  to produce the equivalent expression  $3y$ .

## Operations and Algebraic Thinking

5.OA

2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as  $2 \times (8 + 7)$ . Recognize that  $3 \times (18932 + 921)$  is three times as large as  $18932 + 921$ , without having to calculate the indicated sum or product.

## Operations and Algebraic Thinking

3.OA

5. Apply properties of operations as strategies to multiply and divide.<sup>2</sup> Examples: If  $6 \times 4 = 24$  is known, then  $4 \times 6 = 24$  is also known. (Commutative property of multiplication.)  $3 \times 5 \times 2$  can be found by  $3 \times 5 = 15$ , then  $15 \times 2 = 30$ , or by  $5 \times 2 = 10$ , then  $3 \times 10 = 30$ . (Associative property of multiplication.) Knowing that  $8 \times 5 = 40$  and  $8 \times 2 = 16$ , one can find  $8 \times 7$  as  $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ . (Distributive property.)

## Operations and Algebraic Thinking

1.OA

3. Apply properties of operations as strategies to add and subtract.<sup>3</sup> Examples: If  $8 + 3 = 11$  is known, then  $3 + 8 = 11$  is also known. (Commutative property of addition.) To add  $2 + 6 + 4$ , the second two numbers can be added to make a ten, so  $2 + 6 + 4 = 2 + 10 = 12$ . (Associative property of addition.)



## Shift #3: Rigor

---

- The CCSS require a balance of:
  - Solid conceptual understanding
  - Procedural skill and fluency
  - Application of skills in problem solving situations
- Pursuit of all three requires equal intensity in time, activities, and resources.



Shallow testing of place values concepts means that shallow teaching of them is rewarded.

Name: \_\_\_\_\_

## Hundreds, Tens and Ones

a. 234 = \_\_\_\_\_ hundreds, \_\_\_\_\_ tens, \_\_\_\_\_ ones

b. 809 = \_\_\_\_\_ hundreds, \_\_\_\_\_ tens, \_\_\_\_\_ ones

c. 571 = \_\_\_\_\_ hundreds, \_\_\_\_\_ tens, \_\_\_\_\_ ones

d. 160 = \_\_\_\_\_ hundreds, \_\_\_\_\_ tens, \_\_\_\_\_ ones

e. 67 = \_\_\_\_\_ hundreds, \_\_\_\_\_ tens, \_\_\_\_\_ ones

f. \_\_\_\_\_ = 3 hundreds, 4 tens, 8 ones

g. \_\_\_\_\_ = 6 hundreds, 0 tens, 2 ones

h. \_\_\_\_\_ = 0 hundreds, 0 tens, 5 ones

i. \_\_\_\_\_ = 0 hundreds, 7 tens, 0 ones

j. \_\_\_\_\_ = 9 hundreds, 9 tens, 9 ones





5) 5 hundreds \_\_\_\_\_

6)  $106 = \underline{1}$  hundred + \_\_\_\_\_ tens + \_\_\_\_\_ ones

7)  $106 =$  \_\_\_\_\_ tens + \_\_\_\_\_ ones

8)  $106 =$  \_\_\_\_\_ ones

9)  $90 + 300 + 4 =$  \_\_\_\_\_

**Are these comparisons true or false?**

10) 2 hundreds + 3 ones  $>$  5 tens + 9 ones

11) 9 tens + 2 hundreds + 4 ones  $<$  924



# Unit Assessment

## Grade 3 sample formative assessment items

Code #	CCSS and/or NJCCCS	
3.NF.1	Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into $b$ equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by $a$ parts of size $\frac{1}{b}$ .	
#	STUDENT LEARNING OBJECTIVES	CORRESPONDING CCSS/NJCCCS
3	Identify unit fractions and fractions composed of unit fractions on the number line.	3.NF.1

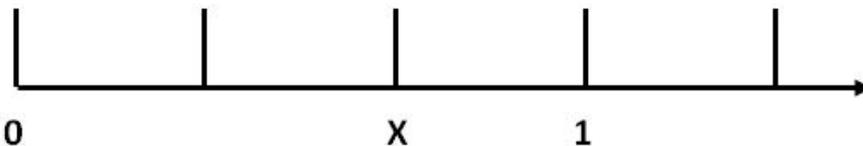
### VOCABULARY

Partitioning, Unknown, Equation, Multiple, Properties of Operations, Arrays

### ASSESSMENT

Sample SLO #3

Find the fraction numeral which names the location X.



- a.  $\frac{2}{4}$       b.  $\frac{2}{3}$   
c.  $\frac{1}{2}$       d.  $\frac{3}{4}$

Sample SLO #3 Bob, Jasmine, Margo, Tim and Elijah were a team. Only Bob and Margo were bused to school. What part of the team did not arrive by bus? A.  $\frac{2}{3}$     B.  $\frac{3}{5}$     C.  $\frac{2}{5}$     D.  $\frac{1}{2}$



# Fluency

---

- The standards require speed and accuracy in calculation.
- Teachers structure class time and/or homework time for students to practice core functions such as single-digit multiplication so that they are more able to understand and manipulate more complex concepts

# Required Fluencies in K-6

---

Grade	Standard	Required Fluency
K	K.OA.5	Add/subtract within 5
1	1.OA.6	Add/subtract within 10
2	2.OA.2 2.NBT.5	Add/subtract within 20 (know single-digit sums from memory) Add/subtract within 100
3	3.OA.7 3.NBT.2	Multiply/divide within 100 (know single-digit products from memory) Add/subtract within 1000
4	4.NBT.4	Add/subtract within 1,000,000
5	5.NBT.5	Multi-digit multiplication
6	6.NS.2,3	Multi-digit division Multi-digit decimal operations



# Application

---

- Students can use appropriate concepts and procedures for application even when not prompted to do so.
- Teachers provide opportunities at all grade levels for students to apply math concepts in “real world” situations, recognizing this means different things in K-5, 6-8, and HS.
- Teachers in content areas outside of math, particularly science, ensure that students are using grade-level-appropriate math to make meaning of and access science content.



# Content Emphases by Cluster: Grade Four

## Content Emphases by Cluster--Grade 4\*

Key: ■ Major Clusters; ■ Supporting Clusters; ○ Additional Clusters



### Operations and Algebraic Thinking

- Use the four operations with whole numbers to solve problems.
- Gain familiarity with factors and multiples.
- Generate and analyze patterns.

### Number and Operations in Base Ten

- Generalize place value understanding for multi-digit whole numbers.
- Use place value understanding and properties of operations to perform multi-digit arithmetic.

### Number and Operations--Fractions

- Extend understanding of fraction equivalence and ordering.
- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- Understand decimal notation for fractions, and compare decimal fractions.

### Measurement and Data

- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
- Represent and interpret data
- Geometric measurement: understand concepts of angle and measure angles.

### Geometry

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles.





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Math Shifts and Major Work of Grade 4.pdf

### Content Emphases by Cluster--Grade 4\*

Not all of the content in a given grade is emphasized equally in the standards. Some clusters require greater emphasis than the others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness. In addition, an intense focus on the most critical material at each grade allows depth in learning, which is carried out through the Standards for Mathematical Practice.

To say that some things have greater emphasis is not to say that anything in the standards can safely be neglected in instruction. Neglecting material will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade. The following table identifies the Major Clusters, Additional Clusters, and Supporting Clusters for this grade.

Key: ■ Major Clusters; ■ Supporting Clusters; ● Additional Clusters

- Operations and Algebraic Thinking
  - Use the four operations with whole numbers to solve problems.
  - Gain familiarity with factors and multiples.
  - Generate and analyze patterns.
- Number and Operations in Base Ten
  - Generalize place value understanding for multi-digit whole numbers.
  - Use place value understanding and properties of operations to perform multi-digit arithmetic.
- Number and Operations--Fractions
  - Extend understanding of fraction equivalence and ordering.
  - Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
  - Understand decimal notation for fractions, and compare decimal fractions.
- Measurement and Data
  - Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit

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# Standards for Mathematical Practices

---

1. **Make sense of problems and persevere in solving them.**
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. **Attend to precision.**
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



## Grade K Overview

### Counting and Cardinality

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

### Operations and Algebraic Thinking

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

### Number and Operations in Base Ten

- Work with numbers 11-19 to gain foundations for place value.

### Measurement and Data

- Describe and compare measurable attributes.
- Classify objects and count the number of objects in categories.

### Geometry

- Identify and describe shapes.
- Analyze, compare, create, and compose shapes.

### Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



## Content Emphases by Cluster--Kindergarten\*

Key: ■ Major Clusters; ■ Supporting Clusters; ○ Additional Clusters

### Counting and Cardinality

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

### Operations and Algebraic Thinking

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

### Number and Operations in Base Ten

- Work with numbers 11-19 to gain foundations for place value.

### Measurement and Data

- Describe and compare measurable attributes.
- Classify objects and count the number of objects in categories.

### Geometry

- Identify and describe shapes.
- Analyze, compare, create, and compose shapes.

## Grade 1 Overview

### Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

### Number and Operations in Base Ten

- Extend the counting sequence.
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

### Measurement and Data

- Measure lengths indirectly and by iterating length units.
- Tell and write time.
- Represent and interpret data.

### Geometry

- Reason with shapes and their attributes.

### Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

## Content Emphases by Cluster--Grade 1\*

Key: ■ Major Clusters; ■ Supporting Clusters; ○ Additional Clusters

### Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

### Number and Operations in Base Ten

- Extending the counting sequence.
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

### Measurement and Data

- Measure lengths indirectly and by iterating length units.
- Tell and write time.
- Represent and interpret data.

### Geometry

- Reason with shapes and their attributes.

## Grade 2 Overview

### Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

### Number and Operations in Base Ten

- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

### Measurement and Data

- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.

### Geometry

- Reason with shapes and their attributes.

### Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

## Content Emphases by Cluster--Grade 2\*

Key: ■ Major Clusters; ■ Supporting Clusters; ○ Additional Clusters

### Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

### Number and Operations in Base Ten

- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

### Measurement and Data

- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.

### Geometry

- Reason with shapes and their attributes.

# Obstacles and Opportunities

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Culture

Capacity

Coherence

Courage

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Shouldn't all kids have this experience?

# CCSS Resources:

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CCSSO's PDF provides resources for:

- About the CCSS
  - Communications about CCSS
  - Instructional and Planning Materials and Supports
  - ELA, math, CTE, ELL and Special Ed. Resources
  - Career and College Readiness
  - Assessment Information
- [http://www.ccsso.org/Documents/2012/Common\\_Core\\_Resources.pdf](http://www.ccsso.org/Documents/2012/Common_Core_Resources.pdf)

# CCSS Resources

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For more information about the Common Core State Standards, access the following links:

<http://www.corestandards.org/>

<http://www.state.nj.us/education/>

# Reflections and Questions

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Reflect on what you learned about the instructional shifts associated with the CCSS.

In what ways are you currently implementing the shifts?

What do you need to do better or differently to implement the shifts?