

Grades 3 and 4  
New Jersey Assessment of Skills  
and Knowledge

**TECHNICAL REPORT**

**MARCH 2005**

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## **PART 1: INTRODUCTION**

The purpose of this Technical Report is to provide information about the New Jersey Assessment of Skills and Knowledge (NJ ASK) administered as an operational assessment in March 2005. This report is intended for use by those who evaluate tests, interpret scores, or use test results for making educational decisions. It includes the following sections: test development, test administration, scoring, standard setting, item level statistics, scaling and equating, test statistics, validity, and score reporting. It includes references to additional reports and documents available for the NJ ASK.

### **1.1 Description of the New Jersey Assessment of Skills and Knowledge (NJ ASK)**

The spring 2005 New Jersey Assessment of Knowledge and Skills (NJ ASK) was administered to students in grades three and four. It consisted of two content areas in grade 3, Language Arts Literacy and Mathematics, and three content areas in grade 4, Language Arts Literacy, Mathematics, and Science. Science was administered as an operational test to grade four students for the first time in 2005. The NJ ASK is designed to give an early indication of the progress students are making in mastering the knowledge and skills described in the Core Curriculum Content Standards. The results are to be used by schools and districts to identify strengths and weaknesses in their educational programs. It is anticipated that this process will lead to improved instruction and better alignment with the Core Curriculum Content Standards in kindergarten through grade four. The results may also be used, along with other indicators of student progress, to identify those students who may need instructional support in any of the content areas. This support, which could be in the form of individual or programmatic intervention, would be a means to address any identified knowledge or skill gaps.

The NJ ASK scores are reported as scale scores and performance levels in each of the content areas. Following are the score ranges and their associated performance level.

- 100-199 Partially Proficient
- 200-249 Proficient
- 250-300 Advanced Proficient

The scores of students who are included in the Partially Proficient level are considered to be below the state minimum of proficiency and those students may be in need of instructional support.

The NJ ASK was administered between March 14 and March 18, 2005. The 2005 Language Arts Literacy and Mathematics tests were administered to 102,727 total students in grade 3. Performance levels for the grade 3 NJ ASK tests were established by panels of educators during sessions held in June, 2004 and were approved by the New Jersey State Board of Education on July 7, 2004. The 2005 Language Arts Literacy, Mathematics, and Science tests were administered to 104,743 total students in grade 4. The grade 4 performance standards for Mathematics were set in 1999 and the standards for grade 4 Language Arts Literacy were established in 2001. Performance levels for the grade 4 NJ ASK Science test was established by

a panel of educators during sessions held in June, 2005 and performance standards were approved by the New Jersey State Board of Education on July 6, 2005.

## 1.2 State-Level Results

This section includes two tables summarizing statewide test results for the 2005 administration of the NJ ASK. Tables 1.2.1 and 1.2.2 show the number and percentage of students in each performance category (i.e., Partially Proficient, Proficient, and Advanced Proficient) for each subject in grades 3 and 4, respectively. The “number of students tested” is based on all students who received a test booklet, excluding those who were voided, not present or APA exempt with no scale scores.

NOTE: Percentages shown in tables through this *Technical Report* may not total 100 due to rounding.

Following is a list of five state-level highlights for all students.

- Of the 100,931 grade 3 students with valid scale scores in Language Arts Literacy in spring 2005, 16.7% scored in Partially Proficient; 78.8% scored in Proficient and 4.4% scored in Advanced Proficient (Table 1.2.1).
- Of the 101,683 grade 3 students with valid scale scores in Mathematics in spring 2005, 17.5% scored in Partially Proficient; 53.7% scored in Proficient and 28.8% scored in Advanced Proficient (Table 1.2.1).
- Of the 102,894 grade 4 students with valid scale scores in Language Arts Literacy in spring 2005, 18.4% scored in Partially Proficient; 77.2% scored in Proficient and 4.4% scored in Advanced Proficient (Table 1.2.2).
- Of the 103,636 grade 4 students with valid scale scores in Mathematics in spring 2005, 19.8% scored in Partially Proficient; 48.5% scored in Proficient and 31.7% scored in Advanced Proficient (Table 1.2.2).
- Of the 103,380 grade 4 students with valid scale scores in Science in spring 2005, 18.9% scored in Partially Proficient; 59.1% scored in Proficient and 22.0% scored in Advanced Proficient (Table 1.2.2).

**TABLE 1.2.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Total Student Group Tested –Grade 3**

TEST SECTION	NUMBER <sup>a</sup> OF VALID SCALE SCORES	PROFICIENCY LEVELS						SCALE SCORE MEAN
		PARTIALLY PROFICIENT (100-199)		PROFICIENT (200-249)		ADVANCED PROFICIENT (250-300)		
		No.	%	No.	%	No.	%	
LANGUAGE ARTS LITERACY 2005	100,931	16,871	16.7%	79,575	78.8%	4,485	4.4%	218.0
MATHEMATICS 2005	101,683	17,759	17.5%	54,623	53.7%	29,301	28.8%	227.9

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT, AND APA EXEMPT WITH NO SCALED SCORES.

**TABLE 1.2.2**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Total Student Group Tested –Grade 4**

TEST SECTION	NUMBER <sup>a</sup> OF VALID SCALE SCORES	PROFICIENCY LEVELS						SCALE SCORE MEAN
		PARTIALLY PROFICIENT (100-199)		PROFICIENT (200-249)		ADVANCED PROFICIENT (250-300)		
		No.	%	No.	%	No.	%	
LANGUAGE ARTS LITERACY 2005	102,894	18,928	18.4%	79,445	77.2%	4,521	4.4%	216.6
MATHEMATICS 2005	103,636	20,504	19.8%	50,285	48.5%	32,847	31.7%	228.0
SCIENCE 2005	103,380	19,530	18.9%	61,093	59.1%	22,757	22.0%	224.2

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT, AND APA EXEMPT WITH NO SCALED SCORES.

### 1.3 NJ ASK Organizational Support

The NJ ASK is administered by the Office of Evaluation and Assessment within the Department of Education. The staff of the Office of Evaluation and Assessment directs the implementation of the statewide assessment programs. In addition to planning, scheduling, and directing all NJ

ASK activities, the staff is extensively involved in numerous test review, security, and quality control procedures.

In 2003, the contract for developing and administering the NJ ASK was awarded to Educational Testing Service (ETS). ETS is the primary contractor working in partnership with Pearson Educational Measurement (PEM), The Grow Network, and Riverside Publishing Company. The major ETS activities include program management, test development, publication development and printing, supporting regional workshops that inform district test coordinators about the NJ ASK program, and psychometric support. Riverside Publishing Company develops the test items and supports the item review workshops. The major activities by PEM include: printing test books; distributing assessment materials in a secure manner; receiving, scanning, editing and scoring the answer documents; packaging, transporting and scoring open-ended responses; and providing data for score reporting. The Grow Network is responsible for producing, printing and shipping reports of test results to New Jersey pupils, parents/guardians, schools, districts and the state.

## **PART 2: TEST DEVELOPMENT**

The Elementary School Proficiency Assessment (ESPA) was first administered as an operational test at grade 4 from 1999 through 2002 to provide an early indication of student progress toward achieving the knowledge and skills identified in the Core Curriculum Content Standards (CCCS). ESPA was replaced in spring 2003 with the New Jersey Assessment of Skills and Knowledge (NJ ASK), a comprehensive, multi-grade assessment program. The purpose of these assessments is to provide indicators of student progress and to identify students who need additional instructional support in order to reach the CCCS. Details of the NJ ASK test development process are presented in this section.

### **2.1 Test Specifications**

During the summer of 1996, three content committees consisting of 46 New Jersey educators developed the Elementary School Proficiency Assessment Content Domain Outline (February 1997), and a directory of test specifications and sample items for each content area to provide content/skill outlines and sample items. These directories describe the test, format of the items, and the scores to be generated by the test. This test specification work done by New Jersey educators serves as the foundation for all test item development.

The committees of New Jersey educators rely upon their expertise and the Core Curriculum Content Standards to design a test that is universally accessible to all grade 3 and grade 4 students and is composed of test questions that are age- and grade-appropriate. The material in the directories of test specifications and sample items as well as the Elementary School Proficiency Assessment Content Domain Outline is designed for use by curriculum specialists and teachers to improve instruction at the district, school and classroom levels.

In 2003, the ESPA became the NJ ASK. The NJ ASK is designed to measure the same Core Curriculum Content Standards as the ESPA. The items and test format of the NJ ASK are similar to those of the ESPA. In addition, the scale scores obtained from the NJ ASK are equivalent to those obtained from the ESPA. One difference between the two tests is the number of Mathematics clusters. In 2003, the Measurement and Geometry clusters of the ESPA were merged into one cluster for the NJ ASK. Brief descriptions of the test content measured in Language Arts Literacy and Mathematics are presented in the following sections.

### **Language Arts Literacy**

The Language Arts Literacy section of each test measures students' achievements in reading and writing. Students read passages selected from published books, newspapers, and magazines as well as everyday text, and respond to related multiple-choice and open-ended questions.

The Language Arts Literacy assessment currently assesses knowledge and skills in the following clusters (A "cluster" is a group of related test questions on a single topic):

- Writing
  - Writing about Pictures
  - Writing About Poems
- Reading
  - Working with Text
  - Analyzing Text

For an in depth description of the NJ ASK Language Arts Literacy including specifications visit the NJ Department of Education website at:

[http://www.njpep.org/assessment/njask\\_lal/Overview\\_njask\\_lal.pdf](http://www.njpep.org/assessment/njask_lal/Overview_njask_lal.pdf)

### **Mathematics**

The Mathematics section of each test measures students' ability to solve problems by applying mathematical concepts. The NJ ASK assesses four Core Curriculum Content Standards in Mathematics:

- Number Sense and Numerical Operations
- Geometry and Measurement
- Patterns and Algebra
- Data Analysis, Probability, and Discrete Mathematics

A process cluster, Problem Solving, is also reported on score reports. The process cluster refers to test questions that measure mathematical problem-solving ability. Each test question on the Mathematics assessment measures one content cluster and may contribute to the process cluster. Each cluster in Mathematics contains one open-ended item. For an in-depth description of the NJ ASK Mathematics Test Specifications visit the NJ Department of Education website at: <http://www.njpep.org/assessment/TestSpecs/MathNJASK/index.html>

## Science

The NJ ASK Science assesses 10 core curriculum content standards – with a focus on the Life, Physical and Earth clusters. The content standards for Science are:

- Scientific Processes
- Science and Society
- Mathematical Applications
- Nature and Process of Technology
- Characteristics of Life
- Chemistry
- Physics
- Earth Science
- Astronomy and Space Science
- Environmental Studies

The NJ ASK Science test consists of four sections. Each section includes 10 multiple choice item and one open ended item.

For an in-depth description of the NJ ASK Science Test Specifications visit the NJ Department of Education website at:

<http://www.njpep.org/assessment/TestSpecs/ScienceNJASK/index.html>

Table 2.1.1 summarize the total points possible for each of the content areas of the operational NJ ASK administered in March 2005 for grades 3 and 4.

**TABLE 2.1.1****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Total Points Possible by Content Area – Grades 3 & 4**

<b>Language Arts Literacy</b>	<b>Grade 3</b>	<b>Grade 4</b>
<b>Total</b>	<b>40 points</b>	<b>43 points</b>
Writing	20 points	20 points
Writing/Picture	10 points	10 points
Writing/Poem	10 points	10 points
Reading	20 points	23 points
Working with Text	10 points	7 points
Analyzing Text	10 points	16 points
<b>Mathematics</b>	<b>Grade 3</b>	<b>Grade 4</b>
<b>Total</b>	<b>33 points</b>	<b>43 points</b>
C4.1 - Number Sense & Numerical Operations	10 points	13 points
C4.2 - Geometry & Measurement	8 points	10 points
C4.3 - Patterns & Algebra	8 points	10 points
C4.4 - Data Analysis, Probability & Discrete Math	7 points	10 points
Problem Solving	22 points	32 points
<b>Science</b>		<b>Grade 4</b>
<b>Total</b>		<b>39 points</b>
Life Science		15 points
Physical Science		12 points
Earth Science		12 points
Application		33 points

\* Within a content area, cluster-level results show how students perform on the sets of items that measure particular knowledge and skills (clusters above the dotted line) or particular processes (clusters below the dotted line). Though an item on the NJ ASK can contribute to a cluster above the line (for example, Reading) as well as a cluster below the line (for example, Working with Text), each item is counted only once in the total score.

**2.2 Development of Test Items**

The March 2005 NJ ASK consists of two types of items:

1. Operational or base test items used to determine students' scores and
2. Field-test items evaluated for use as future base test items.

A team of Riverside Publishing Company subject area specialists and consulting item writers begin the NJ ASK item development process. These writers are teachers or former teachers who have a great deal of specialized knowledge concerning their area of content expertise. All item writers for the NJ ASK program have (1) previously written items for a professional test development company or (2) attended an item-writer training workshop held by Riverside.

The following steps outline the item development process:

1. NJDOE and Riverside: Create test and item specifications
2. Riverside: Select and train item writers
3. Item Writers: Write test items
4. Riverside: Conduct initial item review
5. Riverside: Conduct item review by experienced senior staff
6. NJDOE: Conduct content and bias review

7. Items are field tested
8. NJDOE: Conduct Statistical Item Review
9. Approved items go into the item bank

The Riverside Publishing Company item development process for each testing cycle begins with a formal review of the Core Curriculum Standards and the item specifications. The NJ ASK Item Specifications detail the standards to be measured, the number of items to be written, the item formats to be used, and other specific directions for developing the items. All NJ ASK items must be written to measure the New Jersey Core Curriculum Content Standards.

Item-writer training sessions are convened by content area at the Riverside headquarters in Itasca, Illinois. The respective test development specialist for each content area conducts the training session. Training consists of a full-day session with the first-half day used for specific training in understanding the Core Curriculum Content Standards and the test specifications. The second half-day is used for practice item writing. At the training, each consulting item writer is asked to sign a Letter of Agreement. This letter specifies the confidentiality and security regulations. This agreement also outlines the ownership regulations. No confidential materials related to the project are released without explicit approval by the Office of Evaluation and Assessment in New Jersey Department of Education (NJDOE).

During the training, each item writer is given an item writer's manual that includes the following:

- An overview of the New Jersey Assessment of Skills and Knowledge
- A final test blueprint for each subject area and item specifications
- A description of the item formats to be used, including important characteristics of each format
- A description of the item writing process and measures to avoid writing biased items
- A listing of the security procedures to be followed during the item development process

All items written by item writers are reviewed, revised, and edited by Riverside subject area specialists and editors prior to review by the New Jersey Test Committees. Before any item is included on a field test or operational base test, it must have the approval of the committees, as well as the NJDOE.

As items are developed, Riverside documents each item's relevancy to the Core Curriculum Content Standards and the directories of test specifications. During this process, each item is assigned a unique item identification number. The number is used to track the item throughout the development process and later in the item bank.

### **2.3 Item Review Process**

Once test items have been through initial item review and item review by experienced senior staff at Riverside, the test materials are prepared for test committees' reviews. Before any item is included on a field test or operational test, it must have the approval of the New Jersey Assessment Content and Sensitivity Review Committees. Typically, the committees consist of

experienced educators, curriculum experts, and measurement specialists. Committee members also represent the diversity of the state in terms of ethnicity and geographic regions.

The New Jersey Test Committee members provide expert judgments as to the alignment of each test item with the Core Curriculum Content Standards and the content-specific test specifications. Committee members are selected based on their level of content area knowledge and number of years of teaching experience. Additionally, special care is taken to select members who are representative of the various districts and District Factor Groups (DFGs) within the State. Prior to field testing, the Office of Evaluation and Assessment staff and the Language Arts Literacy, Mathematics, or Science Committees review all items. The Committees review each test item to determine if the item meets test specifications and addresses an appropriate level of difficulty. Committees also ensure that test questions are not offensive and do not reinforce negative stereotypes, and that test questions appropriately reflect multicultural society. Figure 2.3.1 presents a sample of the form that must be marked “Definitely Use” or “Revise and Use With Approval” during review committee meetings before an item is included on a field test.

**Figure 2.3.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Item Approval Before Field Test**

<b>Sensitivity</b>		<b>Content</b>		
<b>*Comments</b>		<b>*Comments</b>		
Sensitivity Issue	Yes      No	Meets Specifications	Yes	No
If Yes, identify category and explain*		Appropriate Difficulty	Yes	No
		Accurate Coding	Yes	No
Definitely Use		Definitely Use		
Revise and Use With Approval		Revise and Use With Approval		
Revise and Resubmit		Revise and Resubmit		
Do Not Use*		Do Not Use*		

Sensitivity Sign-off

Date

Content Chairperson's Signature

Date

All test items are field tested and reviewed again before they can be used as operational test items. The committees meet to review the item statistics, which include: item means, response frequencies, biserial correlations (with operational test total scores), and other descriptive statistics. Prior to the presentation of items and statistics to reviewers, the New Jersey Department of Education defined boundaries within which item statistics should fall to be considered usable for future forms. In general, items with p-values below .30 or above 0.90 were considered to be usable only if a strong content argument could be made for their inclusion in the item bank. An item could be flagged for low or high p-value and/or low biserial correlation with base test total scores.

Also, for the statistical item review, the Mantel-Haenszel statistic is calculated to show whether or not students are responding to an item in a way that their overall ability (as measured by the base test) would lead us to expect. The statistic allows the committees to examine group membership (by ethnicity or by gender). The Mantel-Haenszel statistic is used for a classification determination of category A, B, or C. An item in Category A shows no or minor relationship between group membership and performance. Category B items show small to moderate relationship between membership and performance. Category C items show a substantial relationship between group membership and item performance and must be examined carefully by the committees to make sure these items are not biased.

Figure 2.3.2 presents a sample of the form that must be marked “Definitely Use” or “Revise and Use With Approval” during review committee meetings of the field-test statistics before an item is included on an operational base test.

**Figure 2.3.2**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Item Approval Before Operational Base Test**

Sensitivity			Content		
*Comments			*Comments		
Sensitivity Issue	Yes	No	Appropriate Difficulty	Yes	No
If Yes, identify category and explain*			P-Value = 0.65		
Mantel-Haenszel Category C			Biserial = 0.42		
W-AA _____	W-H _____	M-F _____			
Definitely Use			Definitely Use		
Revise and Use With Approval			Revise and Use With Approval		
Revise and Resubmit			Revise and Resubmit		
Do Not Use*			Do Not Use*		

---

Sensitivity Sign-off \_\_\_\_\_ Date \_\_\_\_\_ Content Chairperson’s Signature \_\_\_\_\_ Date \_\_\_\_\_

Table 2.3.1 show the number of field-test items presented during the March 2005 field-test administration. A sampling plan was developed that randomly assigned field-test forms to districts. To the extent possible, this plan ensured that the student group taking each field-test form would be representative of the DFG distribution of the New Jersey districts.

**TABLE 2.3.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Number of Items Field Tested**

		Multiple-Choice Items		Open-Ended Items		Writing Activities	
		Presented	Accepted	Presented	Accepted	Presented	Accepted
<b>Grade 3</b>	<b>Language Arts</b>	48	46	8	8	8	8
	<b>Mathematics</b>	112	100	14	12	--	--
		Presented	Accepted	Presented	Accepted	Presented	Accepted
<b>Grade 4</b>	<b>Language Arts</b>	44	43	12	12	8	8
	<b>Mathematics</b>	66	56	17	11	--	--
	<b>Science</b>	200	168	20	19	--	--

**2.4 Item Use**

All field-test items approved for use on an operational test form are moved into the item bank. Test development staff members choose from the available banked items when building an operational test form. In most cases, a test item is used operationally one time, unless the item is used a second time as an anchor item in Mathematics. After operational use, items are retired. A small number of previously used items have been released for practice.

**2.5 Test Forms Assembly**

There are four steps associated with assembling test forms for NJ ASK:

1. Determine form design
  2. Select items that meet content specifications
  3. Evaluate statistical specifications and select items to meet these specifications
  4. Review and approve test forms
- 1) **Determine forms design** – Each form consists of a set of operational items plus a set of variable items. The variable items provide opportunities for meeting equating needs and field-testing new items. The number of variable sections for each grade and subject is dependent upon the pool of items available for field-testing.
- 2) **Select items that meet content specifications** – Each content area measures subsets of items called clusters. In Language Arts Literacy the clusters include: Writing (Writing about Pictures and Writing about Poems), and Reading (Working with Text and Analyzing Text).

Also, in grade 3 Language Arts Literacy, there are a subset of items included on the test that measure Reading First. In Mathematics the clusters include: Number Sense and Numerical Operations; Geometry and Measurement; Patterns and Algebra; and Data Analysis, Probability, and Discrete Mathematics. There is also a process cluster called Problem Solving. In Science the clusters include: Life Science, Physical Science and Earth Science. Science also has a process cluster called Application. Test forms must be similar to previous NJ ASK forms in terms of the number of items, the number of points, and the distribution of the content.

- 3) **Evaluate statistical specifications** – As forms are created it is necessary to determine if the statistical specifications have been met. Statistical specifications based on previous forms provide guidelines for building new test forms. Spreadsheets (form matrices) are used to provide information on the statistical properties of newly created forms. These matrices contain the following statistics: Average p-value, biserial correlation and average IRT difficulty (among other statistics). These data are reviewed to make certain that current forms are not substantially harder or easier than previous forms. Linking designs are also evaluated at this stage.
- 4) **Final approval of forms** – Once the content and statistical specifications have been met for each grade and subject, the forms are approved by the ETS Statistical Coordinator and by the NJ DOE. The forms are then released for production and editorial reviews.

Checklists and quality control procedures accompany each stage of form development. Some of these procedures are listed below:

## 2.6 Quality Control for Test Construction

Following is a list of quality control procedures used during the assembly of NJ ASK forms:

- Construct forms based on all content requirements noted in the test blueprint.
- Verify correct number of items per standard or reporting category based on test blueprint.
- Review selected items to ensure a wide sampling of the knowledge and skills being measured.
- Ensure that all selected items have been through the appropriate review procedures and are approved for use by the NJ DOE.
- Check for a variety of item topics, equal distribution of male/female, ethnicities, etc.
- Verify appropriate portions of items with and without artwork.
- Check for cueing across all items on each form.
- Verify match of unique item identification numbers (UIN) to test matrix.
- Verify equal or nearly equal distribution of answer choices for MC items.
- Verify and document items needing manipulative sheets (Mathematics only).
- Ensure that the test meets the statistical specifications.
- Verify match of statistical data on item card to statistical data on test matrix.
- Consider any statistical flags or problems.

- ❑ Check statistics to ensure that the collection of items yields an overall difficulty that falls within the specified range.
- ❑ Verify that items have not been released to the public.
- ❑ Verify equal or nearly equal distribution of answer choices for MC items.
- ❑ Verify correct answer key for each item.
- ❑ Content review of form by senior staff.
- ❑ Statistical review of form by Measurement Statistician.
- ❑ Send form to NJ DOE for review and approval.

## **PART 3: TEST ADMINISTRATION**

The Spring 2005 New Jersey Assessment of Skills and Knowledge (NJ ASK) included Grade 3 and Grade 4 testing sections in Language Arts Literacy and Mathematics as well as Science in Grade 4. The Language Arts Literacy section consists of reading passages, multiple-choice items, open-ended items, and writing tasks. The Language Arts Literacy section is administered over two days for both grades. The Mathematics section consists of multiple-choice and open-ended items that must be answered with the use of a calculator, and multiple-choice items that must be answered without the use of a calculator. The Mathematics section is administered over a two-day period for Grade 4 and a one-day period for Grade 3. The Science section, which consists of multiple-choice and open-ended items, is administered on one day.

Field-test items for all tests are embedded within the sections of the regular test. The make-up tests are scheduled by school districts for administration any morning during the week following the regular NJ ASK administration. Districts have the flexibility to choose which subjects are tested on which days of the make-up period.

### **3.1 Participation**

#### **General Education Students**

The NJ ASK must be administered to all third- and fourth-grade students in New Jersey public schools except those whose Individual Education Program exempts them from taking the NJ ASK.

#### **Limited English Proficient Students**

Limited English Proficient (LEP) students must take the test according to federal guidelines for the No Child Left Behind (NCLB) Act of 2001.

#### **Students with Disabilities**

Students with Disabilities in the third- and fourth-grade eligible for special education under the Individuals with Disabilities Education Act or eligible under Section 504 of the Rehabilitation Act of 1973 must take each subject area of the NJ ASK unless their Individualized Education

Program (IEP) or 504 plan specifically states that they will not participate in one or more subject areas of the test. Students who are ungraded must take the NJ ASK in the calendar year in which they are 9, 10, or 11 years old and when they are first instructed in the knowledge and skills tested. Students whose IEP exempts them from participation in the NJ ASK must participate in the Alternate Proficiency Assessment (APA).

### **3.2 Test Security Procedures**

#### **Standard Security Procedures**

The NJ ASK test booklets and their contents are secure materials. Detailed procedures for maintaining the security of test materials while test materials are in the districts are outlined in the Test Administration Manual. It is the responsibility of school districts to guarantee the security of the test materials. Examiners, proctors, and other school personnel are prohibited from copying, reading, discussing, or disclosing any test items before, during, or after the test administration. When not being used during a test period, test materials are stored in a secure, locked place that is accessible only to individuals whose access is authorized by the school test coordinator. Inventory forms track test materials as they move from one location to another within the districts.

#### **Security Breach Procedures**

Breach test forms and examiner manuals are prepared in the event of a security breach. If the New Jersey Department of Education (NJ DOE) identifies a security breach during the test administration window, the sub-contractor immediately removes the NJ ASK test materials from the involved district or school. The test books for the subject area affected are coded with a void code 5 indicating a security breach. If time permits (determined by NJ DOE) breach forms are delivered to the districts and districts are required to test the affected students in the subject area impacted. When students are re-tested during the test administration window, scores are reported based on the breach form test scores. If a security breach is identified after the test administration window, the impacted test books are coded void code 5 (security breach) and no test results are reported for that subject area. Students receive a score for the subject area that was not impacted by the security breach.

### **3.3 Test Administration Procedures**

School test coordinators, examiners and proctors are responsible for the administration of the exam. Their responsibilities include

- distributing test materials each morning of testing,
- overseeing the recording on School Security Checklists of the transfer of test booklets,
- supervising testing, ensuring proper test administration procedures are followed according to the instructions in the provided Examiner Manuals,
- ensuring that accommodations/modifications listed in the IEPs/504 plans of students with disabilities are implemented,

- monitoring any potential circumstances that may seriously interrupt or interfere with the test administration,
- reporting any testing irregularities that occur during the administration,
- notifying district test coordinator immediately of any missing test booklets,
- scheduling make-up testing for any students who missed one or more days of the regular testing period, and
- returning testing materials to contractors.

### **3.4 Test Accommodations**

#### **General Education Students**

General education students receive no special testing accommodations other than the standard room setup and materials distribution described in the Examiner Manual.

#### **Accommodations and Modifications for Students with Disabilities**

To ensure that students are tested under appropriate conditions, the Department of Education has adopted test accommodations and modifications that may be used when testing special populations of students. The content of the test typically remains the same, but administration procedures, setting, and answer modes may be adapted. Students requiring accommodations must be tested in a separate location from general education students.

Special education students must take the NJ ASK unless their IEP specifically exempts them. A student whose IEP exempts them from taking the NJ ASK must participate in the APA. Special education students may be tested using accommodations/modifications specified in the students' Individualized Education Programs (IEPs) that are approved by the Office of Evaluation and Assessment. Students who have a disability and are eligible under Section 504 of the Rehabilitation Act of 1973 may be tested using accommodations/modifications specified in the student's 504 plan that are approved by the Office of Evaluation and Assessment.

Large-print and Braille materials are provided to districts as required. Students completing a Braille version of the Mathematics section are instructed to bring a Braille ruler to the test session as well as a talking calculator. Students completing a large-print version of the test may use a ruler that is used during class instruction.

Students using the Braille test booklets are permitted to dictate their answers for multiple-choice questions to the examiner. Students taking the Braille test are also permitted to dictate their responses to the open-ended questions and all writing tasks. If dictation is used, the student is required to indicate all punctuation and must spell all key words.

Students using the large-print test booklets mark their answers for multiple-choice questions in the large-print version of the test booklet. Visually impaired students may use special equipment such as a typewriter or computer, if appropriate, for the open-ended questions and writing tasks. For 2005, the Braille versions differed from the standard versions of the tests as some items were

omitted. These items are noted in the student's copy of the test. A list is provided to the examiners along with the supplemental instructions for administering the large-print and Braille versions of the test.

### **Accommodations for Limited English Proficient Students**

NCLB prohibits exemptions from testing based on limited English proficient (LEP) status. However, LEP students were tested with one or more accommodations in the test administration procedures. Permitted accommodations include the following:

- additional time up to 150% of the administration times indicated
- translation of the test directions only into the student's native language (translations of passages, items, prompts, and tasks are NOT permitted)
- use of a bilingual dictionary

Students who received translated test directions were tested in a location separate from students tested with directions read in English only.

## **PART 4: SCORING**

### **4.1 Multiple Choice Items**

Before any documents are scanned, a complete check of the scanning system is conducted. A mock set of answer documents are gridded to cover all response ranges, demographic data, blanks, double grids and other responses. Mock student records are created to verify that each gridding possibility is processed correctly by the scanning program. The output file that is created is thoroughly hand-checked against each answer document after each stage to ensure that the scanners are capturing all marks correctly. When the program output is confirmed to match the expected results, a formal sign-off process takes place.

The scoring keys are reviewed and approved prior to entry into the scoring system, and once entered, are verified. The multiple-choice scoring process entails multiple reviews for accuracy performed by independent staff on each key in every form.

### **4.2 Open Ended Items**

Scoring of Open-Ended (OE) items involves having trained scorers read each student response by at least two readers. The student responses are assigned points by the scorers based on rules outlined in scoring rubrics. For more information about the scoring rubrics, readers are referred to the Cycle I and II Score Interpretation Manual at the following website:

<http://www.nj.gov/njded/assessment/es/njask2005manual.pdf>.

## **Scorer Selection**

The selection of scorers for the constructed response items is made from a large pool of candidates who meet stringent qualifications. Scorers must have, at a minimum, a four-year college degree, and must complete an individual interview. Preference is given to individuals with degrees and backgrounds related to language arts, mathematics and/or science, and experience in performance scoring. If appropriate, they are also asked to complete a grammar placement test and submit an original writing sample. Scoring supervisors are chosen based on subject area expertise, along with strong organizational abilities and communication skills. Scoring supervisors must demonstrate the ability to assist Scoring Directors in training, calibration and discussion sessions by successfully articulating the unique scoring criteria and their application.

## **Range Finding**

Rangefinding sessions are conducted using a range of photocopied student responses for each item. These responses are used to expand and refine existing anchor sets (selected examples of student work representing the score points), to be used in the training for operational scoring.

## **Scorer Training**

Comprehensive training for scorers is provided via an online training system. This system incorporates scoring guides, fully annotated sample responses, practice exercises and qualifying sets. The training is user-driven and interactive and scorers are able to set their own pace.

The scoring guides present the rubrics with descriptions of each score level, and guidelines are provided on how to properly apply the scoring criteria. Annotated papers are chosen to clearly represent each designated score point. These student responses serve as the primary points of reference for scorers as they internalize the rubric during training. All scorers have access to this anchor set whenever they are scoring, and are directed to refer to it regularly.

Practice sets of student responses are used during training to help scorers become more experienced in applying the rubric. The use of these practice sets provides guidance to scorers in defining the line between score points and in applying the scoring criteria to a wider range of types of responses.

Sets of student responses which incorporate a range of student performance levels are used to confirm that the trainees can correctly assign the full range of scores. Candidates must demonstrate acceptable performance on these sets in order to qualify as a scorer.

## **Scoring Procedures**

Once trained, the scorers review and score responses using an electronic scoring system, which is accessible from multiple locations. The security protocols within the system are designed to

ensure the individual who received the training and is qualified to score is the individual who is scoring the responses. Scoring rate, reliability and validity statistics are monitored by the system and by supervisors who manage scoring performance and to identify changes or trends in the scorer's performance. If a scoring anomaly is suspected, the problematic scorer can be locked from the system and all, or a portion of their work, may be reset to address a scoring quality issue.

The system assigns priority to student responses within the pool of available student responses based on a first-in and first-out system, and delivers to the scorer the next eligible response from the pool. Items requiring second reads are given priority over unscored responses, and the system prevents a response from receiving the first and second scores from the same scorer.

All responses are scored by two scorers. If the first and second scores for a response are non-adjacent (e.g., one reader assigns a "5", and the second reader a "3"), the response will be forwarded to a scoring supervisor, who will review and score the response to resolve the discrepancy.

Qualified scorers are authorized to assign valid score points or the "Blank" condition code to responses. Supervisory staff score items sent to them for review, non-adjacent items requiring resolution and all other condition codes (No Response, Off Topic, Not English, Wrong Format, etc).

### **4.3 Quality Control Procedures in Data Preparation**

All information gridded on the students' test booklets is automatically scanned and a series of edit checks are applied during and after the scanning process, prior to storage of the data in a master database. Some student demographic data in the database may be modified through an online password-protected system accessible to specified individuals within the districts.

The master database is the origination of all data for files and reports for the testing administration. This includes all paper reporting, reporting via CDs, and files for the preparation of other State reporting.

Each time data is extracted from the master database for any of the reporting cycles or other files required by the DOE, the extracted data is put through a series of quality control checks to ensure its accuracy for that reporting cycle or file. Once the extracted data has been verified as correct and complete, the reporting cycle continues with the production of reports or files.

## **PART 5: STANDARD SETTING**

The NJ ASK assesses two subject areas in grade 3, Language Arts Literacy and Mathematics, and three subjects in grade 4, Language Arts Literacy, Mathematics, and Science. The Language Arts Literacy tests consist primarily of open-ended items, writing tasks, and some multiple-choice items. The Mathematics tests are primarily multiple-choice items and some open-ended

items. The grade 4 Science assessment is similar to the mathematics design - primarily multiple-choice with a few open-ended items. After the March 2004 administration, standard setting workshops were held in June for the grade 3 Language Arts Literacy and mathematics tests. Cut scores were set for grade 4 Language Arts Literacy in 2001 and grade 4 mathematics in 1999. The Science program became operational in 2005. After the March 2005 administration, a standard setting workshop was held to determine the cut scores for Science that would distinguish performance among three levels: Partially Proficient, Proficient, and Advanced Proficient. Once raw score cuts are established on the base form, equating is used to maintain the cuts over time on new forms. See Part 7, Scaling and Equating, for more information about equating procedures. Below is a description of the Science standard setting activities.

## **5.1 Overview of the Process**

The Science standard setting was conducted in two phases. Phase 1 involved 18 educators from across the state of New Jersey meeting for 2 days and using a research-based standard setting method to recommend cut scores. Phase 2 immediately followed Phase 1 and involved 3 teachers from the Phase 1 panel, as well as 3 additional policymakers from the state. The Phase 2 panelists reviewed the Phase 1 cut scores along with additional information about the percentage of students who would be classified in each level. This additional information included the percentage of students in all reporting categories (e.g., economically disadvantaged) who would reach Proficient and Advanced Proficient and the percentages currently reaching those levels in grade 4 Language Arts Literacy and mathematics. They then provided their recommendations for cut scores, which was presented to the New Jersey State Board of Education for review and adoption on July 6, 2005. Following is a brief summary of the procedure and the results. For more information about the standard-setting workshop a full report is available from the NJDOE.

## **5.2 Procedures**

In April, a group of educators were invited to participate in a one-day workshop to develop the performance level descriptors for Proficient and Advanced Proficient in Science. These descriptors were used throughout the standard setting process. Since the Science test is predominately multiple-choice, but also integrates information from open-ended items, ETS proposed an extended Angoff method (Hambleton & Plake, 1995). The Angoff method is the most thoroughly researched method used in setting standards. Although the use of the Angoff method with NAEP was subject to some criticism (National Academy of Education, 1993, p.xxiv), the method was subsequently defended and continues to be strongly supported by prominent psychometricians (c.f., Cizek, 1993; Kane, 1995; Mehrens, 1995; Loomis & Bourke, 2001). The modified Angoff method continues to be the most commonly used method of setting cut scores for tests that are predominantly multiple-choice.

For each MC item, the panel was instructed to read each question, consider the minimally Proficient (and minimally Advanced Proficient) student, and rate each item as to “How many of those 100 minimally Proficient (and How many of those 100 minimally Advanced Proficient) students would answer this item correctly?” They were instructed to give their ratings in intervals

of five points (e.g., 25, 30, 35). Since, by chance, 25 out of 100 would likely answer a MC item correctly, the lowest reasonable rating for any MC item is 25. The maximum rating was limited to 95 as we do not expect perfection from any student.

For the open-ended item, panelists were asked to estimate the expected score for borderline students (i.e., the average score out of 3 possible points). The panel was instructed to read the OE question and rate each item by answering this question: “If 100 minimally Proficient students (and 100 minimally Advanced Proficient students) took this OE item, what would their average score be?” The panelists were not restricted to any particular increments because other values are possible. For example, a panelist might decide that 10 borderline students would probably skip the item and receive zero points, 10 would get 0.5 points, 30 would score 1.0 points, 40 would score a 1.5, and ten would receive a score of 2.0. Such a combination would yield an average score of 1.15.

After round 2, panelists received “consequence” information about the percentage of students who took the test in March that would be categorized as Partially Proficient, Proficient, or Advanced Proficient. The percentages given to the panelists were based on the average cut scores as of Round 2. The panelists then had the chance to discuss this information with their peers and make final adjustments to their ratings before the conclusion of Phase 1.

### **5.3 Summary of Results**

Overall, panelists’ judgments about the cut scores converged from one round to the next, showing little variance by the end of the final round of Phase 1. Table 5.3.1 shows the recommended cut scores at the end of Round 2 before the panelists saw the consequence data, at the end of Round 3, and then after Phase 2. The standard error of measurement (SEM) shows the degree of uncertainty in a student’s score on the test around the cut score, and the standard error of judgment (SEJ) is related to the variance in panelists’ judgments around the cut score. Overall, we find the SEJs decreasing across rounds, indicating converging opinions. One column, Phase 1 – adjusted, reflects the cut scores adjusted for outlier effects. When the highest and lowest cut scores were removed (a common procedure for a modified Angoff), the resulting cut scores showed no change for Proficient, and an increase of 0.5 points for Advanced Proficient. Table 5.3.1 also shows that the Phase 2 panelists adopted the Phase 1 recommendations for Proficient, and recommended the cut score for Advanced Proficient that matched both the Round 2 rating and the Round 3 rating after it had been adjusted for outliers.

**TABLE 5.3.1****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Grade 4 Science Standard-Setting Results  
Recommended Cut Scores at the End of Phase 1 and Phase 2**

	<b>Phase 1 - Round 2</b>		<b>Phase 1 - Round 3</b>		<b>Phase 1 - Adjusted</b>		<b>Phase 2</b>	
	Proficient	Advanced Proficient	Proficient	Advanced Proficient	Proficient	Advanced Proficient	Proficient	Advanced Proficient
<b>Science</b>								
Cut Score	19	30	19	29.5	19	30	19	30
SEM	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5
SEJ	0.52	0.53	0.50	0.52	0.47	0.28	0.00	0.41

Table 5.3.2 shows the final cut scores that were brought to the State Board of Education for their review and approval. In addition to these tables, the State Board was also provided with consequence data for students in each reporting category, such as gender, race/ethnicity, and economic status.

**TABLE 5.3.2****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Grade 4 Science Standard-Setting Results  
Recommended Cut Scores After Phase 2**

	Cut score for Proficient	Cut Score for Advanced Proficient	% Partially Proficient	% Proficient	% Advanced Proficient
<b>Science</b>	19.0	30.0	19.6%	58.4%	22.0%

**PART 6: TEST STATISTICS****6.1 Classical Item Statistics**

For each administration, classical item analyses are completed prior to item calibration, scaling and equating. These statistics are calculated again once all of the data are available. These analyses involve computing, for every item in each form, a set of statistics based on classical test

theory. Each statistic is designed to provide some key information about the quality of each item from an empirical perspective. The statistics estimated for the NJ ASK are described below.

- Classical item difficulty (“P-Value”):  
This statistic indicates the percent of examinees in the sample that answered the item correctly. Desired p-values generally fall within the range of 0.30 to 0.90.
- Item discrimination (“r-biserial”)<sup>1</sup>:  
This statistic is measured by the polyserial correlation between the item score and the test criterion score and describes the relationship between performance on the specific item and performance on the entire form. The higher the value, the better the task of separating the examinees. Items with negative correlations can indicate serious problems with the item content (e.g., multiple correct answers or unusually complex content), or can indicate that students have not been taught the content. For Language Arts Literacy, the test criterion score was the number-correct score on the MC items, plus the weighted CR item score. For mathematics, the test criterion score was the number-correct score.
- The proportion of students choosing each response option:  
These statistics indicate the percent of examinees that select each of the available answer options and the percent of examinees that omitted the item.
- Distracter analyses for MC items.  
The GENASYS system (GENASYS is a proprietary ETS item analysis software program) provides graphical displays of the data for each option, which are reviewed.
- Percent of students omitting an item:  
This statistic is useful for identifying problems with test features such as testing time and item/test layout. Typically, we would expect that if students have an adequate amount of testing time, 95% of students should attempt to answer each question. When a pattern of omit percentages exceeds 5% for a series of items at the end of a timed section, this may indicate that there was insufficient time for students to complete all items. Alternatively, if the omit percentage is greater than 5% for a single item, this could be an indication of an item/test layout problem. For example, students might accidentally skip an item that follows a lengthy stem.

In Tables 6.1.1 and 6.1.2, summary statistics are given that describe the difficulty and discrimination of the items comprising each cluster for grades 3 and 4, respectively. For

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<sup>1</sup> The estimated polyserial correlation between scores on the item and on the criterion is computed by the formula:

$$r_{polyreg} = \frac{\beta_i \sigma_x}{\sqrt{\beta_i^2 \sigma_x^2 + 1}},$$

where the  $\beta_i$  are a series of parameters estimated by maximum likelihood from the item analysis data (Drasgow, 1988; Lewis & Thayer, 1996).

dichotomously scored items, means and standard deviations of proportion-correct values (p-values) and r-biserials are given. For the open-ended items, the index of item difficulty was calculated by dividing students' average scores on an item by the maximum possible score on the item. Item discrimination for each open-ended item is the correlation between students' item score and their total score on the test section. For both the item-test correlation and the r-biserial correlation, students' total test scores were expressed in terms of the raw score metric.

**TABLE 6.1.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Item Difficulty and Discrimination Summary Statistics  
for Dichotomously Scored and Open-Ended Items  
by Test Section and Cluster – Grade 3**

NJ ASK Test Section/Cluster	Dichotomous			Open-Ended		
	Item Difficulty		Item Discrimination	Item Difficulty		Item Discrimination
	Mean	S.D.	Mean	Mean	S.D.	Mean
<b>Language Arts Literacy</b>	0.73	0.13	0.55	0.42	0.04	0.73
Writing	--	--	--	0.46	0.02	0.77
Writing/Picture	--	--	--	0.47	--	0.79
Writing/Poem	--	--	--	0.44	--	0.75
<b>Reading</b>	0.73	0.14	0.55	0.39	0.01	0.68
Working with Text	0.73	0.13	0.55	--	--	--
Analyzing Text	0.72	0.11	0.56	0.39	0.01	0.68
<b>Mathematics</b>	0.70	0.12	0.51	0.63	0.08	0.65
Number Sense & Numerical Operations	0.69	0.10	0.52	0.55	--	0.73
Geometry & Measurement	0.72	0.14	0.44	--	--	--
Patterns & Algebra	0.62	0.09	0.56	0.71	--	0.55
Data Analysis, Probability & Discrete Math	0.76	0.14	0.55	0.62	--	0.67
Problem Solving	0.64	0.11	0.54	0.63	0.08	0.65

**TABLE 6.1.2**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Item Difficulty and Discrimination Summary Statistics  
for Dichotomously Scored and Open-Ended Items  
by Test Section and Cluster – Grade 4**

NJ ASK Test Section/Cluster	Dichotomous			Open-Ended		
	Item Difficulty		Item Discrimination	Item Difficulty		Item Discrimination
	Mean	S.D.	Mean	Mean	S.D.	Mean
<b>Language Arts Literacy</b>	0.68	0.10	0.53	0.43	0.07	0.73
Writing	--	--	--	0.50	0.03	0.77
Writing/Picture	--	--	--	0.53	--	0.78
Writing/Poem	--	--	--	0.48	--	0.76
Reading	0.68	0.10	0.53	0.38	0.03	0.70
Working with Text	0.66	0.11	0.58	--	--	--
Analyzing Text	0.71	0.11	0.44	0.38	0.03	0.70
<b>Mathematics</b>	0.69	0.13	0.53	0.56	0.06	0.63
Number Sense & Numerical Operations	0.74	0.10	0.51	0.58	0.03	0.69
Geometry & Measurement	0.71	0.13	0.52	0.47	--	0.56
Patterns & Algebra	0.60	0.14	0.52	0.63	--	0.62
Data Analysis, Probability & Discrete Math	0.70	0.14	0.56	0.56	--	0.57
Problem Solving	0.65	0.14	0.53	0.56	0.06	0.62
<b>Science</b>	0.65	0.16	0.46	0.56	0.12	0.54
Life Science	0.65	0.19	0.45	0.58	--	0.48
Physical Science	0.69	0.13	0.47	0.43	--	0.56
Earth Science	0.60	0.12	0.48	0.67	--	0.59
Application	0.66	0.14	0.47	0.56	0.12	0.54

Frequency distributions of the March 2005 NJ ASK item p-values (difficulty values) and item discrimination indices are provided by content section and cluster for Language Arts Literacy, Mathematics, and Science in Tables 6.1.3, 6.1.4, 6.1.5, 6.1.6, and 6.1.7. The top section of each table shows the distribution of item difficulty values; the bottom section shows the distribution of r-biserial indices.

**TABLE 6.1.3****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Frequency Distributions of Item Difficulty Values and Biserial Discrimination Indices by Content Cluster****Language Arts Literacy – Grade 3**

<b>Item Statistics</b>	<b>Working With Text</b>	<b>Analyzing Text</b>	<b>Reading First</b>	<b>Total</b>
<b>ITEM DIFFICULTY: P-VALUES</b>				
.800+	4	0	4	4
.700 - .799	2	1	2	3
.600 - .699	2	1	2	3
.500 - .599	2	0	1	2
<.500	0	0	0	0
<b>MEAN P-VALUE</b>	0.73	0.72	0.75	0.73
<b>MEDIAN P-VALUE</b>	0.76	0.72	0.77	0.76
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>				
.50+	7	1	7	8
.40 - .49	3	1	2	4
.30 - .39	0	0	0	0
<b>MEAN POINT-BISERIAL</b>	0.55	0.56	0.55	0.55
<b>MEDIAN POINT-BISERIAL</b>	0.57	0.56	0.57	0.57
<b>TOTAL NUMBER OF ITEMS</b>	10	2	9	12

**TABLE 6.1.4****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Frequency Distributions of Item Difficulty Values and Biserial  
Discrimination Indices by Content Cluster****Language Arts Literacy – Grade 4**

<b>Item Statistics</b>	<b>Working With Text</b>	<b>Analyzing Text</b>	<b>Total</b>
<b>ITEM DIFFICULTY: P-VALUES</b>			
.800 - .899	0	1	1
.700 - .799	4	1	5
.600 - .699	1	2	3
.500 - .599	1	0	1
<.500	1	0	1
<b>MEAN P-VALUE</b>	0.66	0.71	0.68
<b>MEDIAN P-VALUE</b>	0.70	0.69	0.70
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>			
.50+	7	1	8
.40 - .49	0	1	1
.30 - .39	0	2	2
<b>MEAN POINT-BISERIAL</b>	0.58	0.44	0.53
<b>MEDIAN POINT-BISERIAL</b>	0.58	0.40	0.57
<b>TOTAL NUMBER OF ITEMS</b>	7	4	11

**TABLE 6.1.5**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Frequency Distributions of Item Difficulty Values  
and Biserial Discrimination Indices by Content Cluster**

**Mathematics – Grade 3**

<b>Item Statistics</b>	<b>Number Sense &amp; Numerical Operations</b>	<b>Geometry &amp; Measurement</b>	<b>Patterns &amp; Algebra</b>	<b>Data Analysis, Probability &amp; Discrete Math</b>	<b>Problem Solving</b>	<b>Total Test</b>
<b>ITEM DIFFICULTY: P-VALUES</b>						
.900+	0	0	0	1	0	1
.800 - .899	1	3	0	1	2	5
.700 - .799	4	1	1	1	2	7
.600 - .699	4	2	2	1	4	8
.500 - .599	0	2	2	0	4	5
<.500	1	0	0	0	1	1
<b>MEAN P-VALUE</b>	0.69	0.72	0.62	0.76	0.64	0.70
<b>MEDIAN P-VALUE</b>	0.70	0.71	0.62	0.77	0.64	0.69
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>						
.50+	5	3	4	3	9	15
.40 - .49	5	3	1	1	3	10
.30 - .39	0	1	0	0	0	1
.20 - .29	0	1	0	0	1	1
<b>MEAN POINT-BISERIAL</b>	0.52	0.44	0.56	0.55	0.54	0.51
<b>MEDIAN POINT-BISERIAL</b>	0.50	0.43	0.55	0.57	0.56	0.51
<b>Total Number of Items</b>	10	8	5	4	13	27

**TABLE 6.1.6**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Frequency Distributions of Item Difficulty Values  
and Biserial Discrimination Indices by Content Cluster**

**Mathematics – Grade 4**

<b>Item Statistics</b>	<b>Number Sense &amp; Numerical Operations</b>	<b>Geometry &amp; Measurement</b>	<b>Patterns &amp; Algebra</b>	<b>Data Analysis, Probability &amp; Discrete Math</b>	<b>Problem Solving</b>	<b>Total Test</b>
<b>ITEM DIFFICULTY: P-VALUES</b>						
.900 - .999	0	0	0	0	0	0
.800 - .899	3	1	0	1	1	5
.700 - .799	4	4	2	4	6	14
.600 - .699	3	1	1	0	3	5
.500 - .599	1	0	3	1	4	5
<.500	0	1	1	1	2	3
<b>MEAN P-VALUE</b>	0.74	0.71	0.60	0.70	0.65	0.69
<b>MEDIAN P-VALUE</b>	0.78	0.72	0.58	0.75	0.67	0.74
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>						
.50 - .59	8	5	6	7	13	26
.40 - .49	2	2	1	0	3	5
.30 - .39	1	0	0	0	0	1
.20 - .29	0	0	0	0	0	0
<b>MEAN POINT-BISERIAL</b>	0.51	0.52	0.52	0.56	0.53	0.53
<b>MEDIAN POINT-BISERIAL</b>	0.50	0.55	0.53	0.55	0.53	0.53
<b>Total Number of Items</b>	11	7	7	7	16	32

**TABLE 6.1.7**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Frequency Distributions of Item Difficulty Values and Biserial  
Discrimination Indices by Content Cluster**

**Science – Grade 4**

<b>Item Statistics</b>	<b>Life Science</b>	<b>Physical Science</b>	<b>Earth Science</b>	<b>Application</b>	<b>Total Test</b>
<b>ITEM DIFFICULTY: P-VALUES</b>					
.900+	2	0	0	1	2
.800 - .899	1	2	1	4	4
.700 - .799	2	3	0	4	5
.600 - .699	2	2	5	8	9
.500 - .599	3	1	3	4	4
<.500	2	1	0	3	6
<b>MEAN P-VALUE</b>	0.65	0.69	0.60	0.66	0.65
<b>MEDIAN P-VALUE</b>	0.65	0.72	0.61	0.66	0.65
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>					
.50+	4	4	4	11	12
.40 - .49	5	3	4	7	12
.30 - .39	2	1	1	4	4
.20 - .29	1	1	0	2	2
<b>MEAN POINT-BISERIAL</b>	0.45	0.47	0.48	0.47	0.46
<b>MEDIAN POINT-BISERIAL</b>	0.46	0.49	0.48	0.49	0.48
<b>Total Number of Items</b>	12	9	9	24	30

## 6.2 Speededness

The NJ ASK is intended to provide sufficient time for all students to respond to almost all of the questions. The percentage of students omitting an item provides information about speededness, although it must be kept in mind that students can omit an item for reasons other than speededness (for example, choosing to not put effort into answering a constructed response item). Thus, if the percentage of omits is low, that implies that there is little speededness; if a percentage of omits is high, speededness, as well as other factors, can be the cause.

Tables 6.2.1 and 6.2.2 present data concerning the extent to which students omitted items. Table 6.2.1 shows that the percentage of grade 3 students omitting the Reading multiple-choice items was very small while the percentage of students omitting the Reading open-ended items varied from 1.2% to 1.4%. Table 6.2.1 also shows the percentage of grade 3 students omitting each of the last two Mathematics multiple-choice items in each part and all Mathematics open-ended items. The percentage of grade 3 students omitting the Mathematics multiple-choice items ranged from 0.4% to 1.7%. The percentage of grade 3 students omitting the Mathematics open-ended items ranged from 1.4% to 1.8%.

Table 6.2.2 shows that the percentage of grade 4 students omitting the Reading multiple-choice items was very small while the percentage of students omitting the Reading open-ended items varied from 0.5% to 3.8%. Table 6.2.2 also shows the percentage of grade 4 students omitting each of the last two Mathematics multiple-choice items in each part and all Mathematics open-ended items. The percentage of grade 4 students omitting the Mathematics multiple-choice items ranged from 0.6% to 2.3%. The percentage of grade 4 students omitting the Mathematics open-ended items ranged from 0.9% to 3.2%. Table 6.2.2 also shows the percentage of grade 4 students omitting each of the last two Science multiple-choice items in each part and all Science open-ended items. The percentage of grade 4 students omitting the Science multiple-choice items ranged from 0.2% to 1.2%. The percentage of grade 4 students omitting the Science open-ended items ranged from 0.7% to 1.8%.

**TABLE 6.2.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Percentage of Students Omitting the  
Last Items of Each Test Part – Grade 3**

Test Section	Multiple - Choice		Open - Ended	
	Item Number	Percentage Omitting	Item Number	Percentage Omitting
<b>Reading</b>				
<u>First Part</u>	Item 5	0.2%		
	Item 6	0.5%	Item 7	1.2%
<u>Second Part</u>	Item 5	0.4%		
	Item 6	0.7%	Item 7	1.4%
<b>Mathematics</b>				
<u>Day 1</u>				
<u>First Part</u>	Item 2	0.9%		
	Item 3	1.6%		
<u>Second Part</u>	Item 5	1.2%		
	Item 6	1.7%		
<u>Third Part</u>	Item 12	0.7%		
	Item 13	0.7%	Item 14	1.4%
<u>Fourth Part</u>	Item 20	0.9%		
	Item 21	1.4%	Item 22	1.5%
<u>Fifth Part</u>	Item 28	0.4%		
	Item 29	0.6%	Item 30	1.8%

**TABLE 6.2.2**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Percentage of Students Omitting the  
Last Items of Each Test Part – Grade 4**

Test Section	Multiple – Choice		Open - Ended	
	Item Number	Percentage Omitting	Item Number	Percentage Omitting
<b>Reading</b>				
<u>First Part</u>	Item 4	0.2%	Item 6	0.5%
	Item 5	0.3%	Item 7	3.8%
<u>Second Part</u>	Item 5	0.5%		
	Item 6	0.4%	Item 7	0.9%
<b>Mathematics</b>				
<u>Day 1</u>				
<u>First Part</u>	Item 3	2.3%		
	Item 4	1.5%		
<u>Second Part</u>	Item 7	0.6%		
	Item 8	0.6%		
<u>Third Part</u>	Item 19	2.3%		
	Item 20	2.1%	Item 21	3.2%
<u>Fourth Part</u>	Item 26	0.8%	Item 28	1.5%
	Item 27	0.9%	Item 29	1.5%
<u>Day 2</u>				
<u>Fifth Part</u>	Item 34	0.9%	Item 36	0.9%
	Item 35	1.6%	Item 37	2.0%

**TABLE 6.2.2 (continued)**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Percentage of Students Omitting the  
Last Items of Each Test Part – Grade 4**

Test Section	Multiple – Choice		Open - Ended	
	Item Number	Percentage Omitting	Item Number	Percentage Omitting
<b>Science</b>				
<u>Day 1</u>	Item 9	0.5%		
<u>First Part</u>	Item 10	0.6%	Item 11	0.7%
<u>Second Part</u>	Item 20	1.2%		
	Item 21	0.3%	Item22	
<u>Third Part</u>	Item 31	0.3%		1.6%
	Item 32	0.2%	Item 33	1.8%

### 6.3 Intercorrelations

The Pearson product-moment correlation between student scores on the Language Arts Literacy and Mathematics content areas for grade 3 was .67; this correlation for grade 4 was .70. The correlation between student scores on the grade 4 Science and Language Arts Literacy content areas, and between Science and Mathematics content areas were .67 and .72, respectively. Tables 6.3.1 and 6.3.2 show the correlations between students' scores in the major content clusters and item types. Tables 6.3.3 and 6.3.4 show the correlations between students' scores on the content clusters. The scores used for all correlations were expressed in the raw score metric.

Note that correlations between a content area and cluster within that content area are partially a function of the proportion of the content area that is made up of items from the given cluster. All else being equal, clusters that make up a higher proportion of a content area score will tend to have higher cluster-area correlations. For example, the correlation between Mathematics Total and Mathematics Multiple-Choice in Table 6.3.2 is quite high at .95 because 28 Mathematics Multiple-Choice points are part of the Mathematics Total 43 points.

In addition, correlations are partially a function of the number of items in the measures being correlated; for a given pair of traits, increasing the number of items tends to increase correlations because of the increase in score reliability. Therefore, the number of items in the content areas and clusters being correlated must be considered when their correlations are evaluated.

**TABLE 6.3.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Intercorrelations Among Major Content Clusters and Item Types – Grade 3**

Major Content Clusters and Item Types	Major Content Clusters and Item Types							
	Language Arts Literacy (LAL)					Mathematics (MAT)		
	LAL	R	R MC	R OE	W	MAT	M MC	M OE
<b>LAL Language Arts Literacy (40)</b>								
R Reading (20)	.92							
R MC Reading Multiple-Choice (12)	.84	.95						
R OE Reading Open-ended (8)	.77	.77	.53					
W Writing (20)	.85	.58	.49	.57				
<b>MAT Mathematics (33)</b>	.67	.66	.61	.55	.52			
M MC Mathematics Multiple-Choice (24)	.65	.64	.60	.52	.49	.96		
M OE Mathematics Open-ended (9)	.56	.53	.47	.48	.45	.84	.66	

Number in Parentheses is the number of points.  
Language Arts Literacy N=100,931; Mathematics N=101,683.

**TABLE 6.3.2**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Intercorrelations Among Major Content Clusters and Item Types – Grade 4**

Major Content Clusters and Item Types	Major Content Clusters and Item Types							
	Language Arts Literacy (LAL)					Mathematics (MAT)		
	LAL	R	R MC	R OE	W	MAT	M MC	M OE
<b>LAL Language Arts Literacy (43)</b>								
R Reading (23)	.94							
R MC Reading Multiple-Choice (11)	.84	.92						
R OE Reading Open-ended (12)	.84	.86	.60					
W Writing (20)	.85	.62	.51	.62				
<b>MAT Mathematics (43)</b>	.70	.69	.63	.61	.54			
M MC Mathematics Multiple-Choice (28)	.68	.67	.62	.58	.52	.95		
M OE Mathematics Open-ended (15)	.61	.60	.54	.54	.48	.90	.72	

Number in Parentheses is the number of points.  
Language Arts Literacy N=102,894; Mathematics N=103,636.

**TABLE 6.3.2 (Continued)**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Intercorrelations Among Major Content Clusters and Item Types – Grade 4**

Major Content Clusters and Item Types	Major Content Clusters and Item Types							
	Language Arts Literacy (LAL)					Science (SCI)		
	LAL	R	R MC	R OE	W	SCI	S MC	S OE
<b>LAL Language Arts Literacy (43)</b>								
R Reading (23)	.94							
R MC Reading Multiple-Choice (11)	.84	.92						
R OE Reading Open-ended (12)	.84	.86	.60					
W Writing (20)	.85	.62	.51	.62				
<b>SCI Science (39)</b>	.67	.69	.66	.58	.48			
S MC Science Multiple-Choice (30)	.64	.67	.64	.55	.45	.96		
S OE Science Open-ended (9)	.51	.51	.46	.44	.38	.75	.54	

Number in Parentheses is the number of points.  
Language Arts Literacy N=102,894; Science N=103,380.

**TABLE 6.3.2 (Continued)**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Intercorrelations Among Major Content Clusters and Item Types – Grade 4**

Major Content Clusters and Item Types	Major Content Clusters and Item Types					
	Mathematics (MAT)			Science (SCI)		
Major Content Clusters and Item Types	MAT	M MC	M OE	SCI	S MC	S OE
<b>MAT Mathematics (43)</b>						
M MC Mathematics Multiple-Choice (28)	.95					
M OE Mathematics Open-ended (15)	.90	.72				
<b>SCI Science (39)</b>	.72	.70	.62			
S MC Science Multiple-Choice (30)	.69	.69	.58	.96		
S OE Science Open-ended (9)	.54	.51	.49	.75	.54	

Number in Parentheses is the number of points.  
Mathematics N=103,636; Science N=103,380.

**TABLE 6.3.3**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Intercorrelations Among Content Areas and Clusters – Grade 3**

Test Section/Cluster	Test Section/Cluster													
	LAL Language Arts Literacy								MAT Mathematics					
Test Section/Cluster	LAL	L1	L2	L3	L4	L5	L6	L7	MAT	M1	M2	M3	M4	M5
<b>LAL Language Arts Literacy (40)</b>														
L1 Reading (20)	.92													
L2 Writing (20)	.85	.58												
L3 Writing / Picture (10)	.76	.54	.87											
L4 Writing / Poem (10)	.73	.47	.88	.54										
L5 Working with Text (10)	.82	.92	.47	.45	.38									
L6 Analyzing Text (10)	.83	.86	.57	.52	.48	.59								
L7 Read First (9)	.80	.90	.47	.44	.38	.98	.59							
<b>MAT Mathematics (33)</b>	.67	.66	.52	.49	.42	.59	.59	.58						
M1 Number Sense and Numerical Operations (10)	.59	.57	.45	.43	.37	.51	.52	.50	.88					
M2 Geometry and Measurement (8)	.50	.49	.38	.36	.31	.44	.43	.44	.76	.55				
M3 Data Analysis, Probability and Discrete Math (8)	.58	.56	.45	.42	.37	.49	.51	.49	.80	.60	.52			
M4 Patterns and Algebra (7)	.55	.54	.42	.40	.34	.48	.48	.47	.83	.63	.51	.56		
M5 Problem Solving (22)	.65	.64	.50	.48	.41	.57	.58	.56	.97	.86	.70	.77	.85	

Number in Parentheses is the number of points.  
Language Arts Literacy N=100,931; Mathematics N=101,683.

**TABLE 6.3.4**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Intercorrelations Among Content Areas and Clusters – Grade 4**

Test Section/Cluster	Test Section/Cluster												
	LAL Language Arts Literacy						MAT Mathematics						
Test Section/Cluster	LAL	L1	L2	L3	L4	L5	L6	MAT	M1	M2	M3	M4	M5
<b>LAL Language Arts Literacy (43)</b>													
L1 Reading (23)	.94												
L2 Writing (20)	.85	.62											
L3 Writing / Picture (10)	.76	.57	.87										
L4 Writing / Poem (10)	.74	.53	.89	.55									
L5 Working with Text (7)	.80	.87	.49	.45	.41								
L6 Analyzing Text (16)	.89	.93	.61	.56	.53	.62							
<b>MAT Mathematics (43)</b>	.70	.69	.54	.50	.46	.62	.63						
M1 Number Sense and Numerical Operations(13)	.62	.61	.49	.44	.42	.55	.56	.90					
M2 Geometry and Measurement (10)	.56	.55	.43	.39	.36	.51	.49	.82	.65				
M3 Data Analysis, Probability and Discrete Math (10)	.61	.60	.48	.43	.41	.54	.54	.84	.66	.62			
M4 Patterns and Algebra (10)	.59	.59	.45	.41	.38	.53	.53	.85	.68	.60	.62		
M5 Problem Solving (32)	.68	.67	.52	.47	.44	.61	.61	.98	.87	.81	.82	.86	

Number in Parentheses is the number of points.  
Language Arts Literacy N=100,931; Mathematics N=103,636.

**TABLE 6.3.4 (Continued)**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Intercorrelations Among Content Areas and Clusters – Grade 4**

Test Section/Cluster	Test Section/Cluster											
	LAL Language Arts Literacy							SCI Science				
Test Section/Cluster	LAL	L1	L2	L3	L4	L5	L6	SCI	S1	S2	S3	S4
<b>LAL Language Arts Literacy (43)</b>												
L1 Reading (23)	.94											
L2 Writing (20)	.85	.62										
L3 Writing / Picture (10)	.76	.57	.87									
L4 Writing / Poem (10)	.74	.53	.89	.55								
L5 Working with Text (7)	.80	.87	.49	.45	.41							
L6 Analyzing Text (16)	.89	.93	.61	.56	.53	.62						
<b>SCI Science (39)</b>	.67	.69	.48	.44	.40	.65	.61					
S1 Life Science (15)	.55	.56	.39	.36	.33	.53	.50	.86				
S2 Physical Science (12)	.56	.59	.39	.37	.33	.55	.51	.83	.56			
S3 Earth Science (12)	.60	.61	.43	.40	.35	.57	.54	.86	.59	.60		
S4 Application (33)	.67	.69	.48	.45	.40	.64	.61	.98	.86	.82	.84	

Number in Parentheses is the number of points.  
Language Arts Literacy N=102,894; Science N=103,380.

**TABLE 6.3.4 (Continued)**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Intercorrelations Among Content Areas and Clusters – Grade 4**

Test Section/Cluster	Test Section/Cluster										
	MAT Mathematics						SCI Science				
Test Section/Cluster	MAT	M1	M2	M3	M4	M5	SCI	S1	S2	S3	S4
<b>MAT Mathematics (43)</b>											
M1 Number Sense and Numerical Operations(13)	.90										
M2 Geometry and Measurement (10)	.82	.65									
M3 Data Analysis, Probability and Discrete Math (10)	.84	.66	.62								
M4 Patterns and Algebra (10)	.85	.68	.60	.62							
M5 Problem Solving (32)	.98	.87	.81	.82	.86						
<b>SCI Science (39)</b>	.72	.63	.61	.62	.60	.70					
S1 Life Science (15)	.59	.51	.49	.51	.50	.58	.86				
S2 Physical Science (12)	.60	.52	.51	.52	.50	.58	.83	.56			
S3 Earth Science (12)	.65	.56	.55	.56	.54	.63	.86	.59	.60		
S4 Application (33)	.71	.62	.60	.62	.60	.70	.98	.86	.82	.84	

Number in Parentheses is the number of points.  
Mathematics N=103,636; Science N=103,380.

## 6.4 Item Bias Statistics

Following the classical item analyses, Differential Item Functioning (DIF) studies were completed. One of the goals of test development is to assemble a set of items that provides an estimate of a student's ability that is as fair and accurate as possible for all groups within the population. DIF statistics are used to identify those items that identifiable groups of students (e.g. females, African Americans, Hispanics) with the same underlying level of ability have different probabilities of answering correctly. If the item is differentially more difficult for an identifiable subgroup, the item may be measuring something different from the intended construct. However, it is important to recognize that DIF flagged items might be related to actual differences in relevant knowledge or skill (item impact) or statistical Type I error. As a result, DIF statistics are used to identify potential sources of item bias. Subsequent review by content experts and bias/sensitivity committees determines the source and meaning of any differences that are seen.

ETS used two DIF detection methods: the Mantel-Haenszel and standardization approaches. As part of the Mantel-Haenszel procedure, the statistic described by Holland & Thayer (1986), known as MH D-DIF, was used. This statistic is expressed as the differences between the focal and reference group performance after conditioning on total test score. This statistic is reported on the ETS delta scale, which is a normalized transformation of item difficulty (proportion correct) with a mean of 12 and a standard deviation of 4. Negative MH D-DIF statistics favor the reference group and positive values favor the focal group. The classification logic used for flagging items is based on a combination of absolute differences and significance testing. Items that are not statistically significantly different based on the MH D-DIF ( $p > 0.05$ ) are considered to have similar performance between the two studied groups; these items are considered to be functioning appropriately. For items where the statistical test indicates significant differences ( $p < 0.05$ ), the effect size is used to determine the direction and severity of the DIF. For the LANGUAGE ARTS LITERACY OE items, the Mantel-Haenszel procedure was executed where item categories are treated as integer scores and a chi-square test was carried out with one degree of freedom. The male and white groups are considered as reference groups and the female and other ethnic groups are categorized as focal groups.

Based on these DIF statistics, items are classified into one of three categories and assigned values of A, B or C (see Table 6.4.1). Category A contains negligible DIF, Category B items exhibit slight or moderate DIF, and Category C items have moderate to large values of DIF. Negative values imply that conditional on the matching variable, the focal group has a lower mean item score than the reference group. In contrast a positive value implies that, conditional on the matching variable, the reference group has lower mean item score than the focal group. For constructed-response items the MH D-DIF is not calculated, but analogous flagging rules based on the chi-square statistic are applied, resulting in classification into A, B, or C DIF categories.

**TABLE 6.4.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
DIF Categories**

<b>DIF Category</b>	<b>Definition</b>
A (negligible)	MH D-DIF not significantly different from zero, or has an absolute value less than one.
B (slight to moderate)	MH D-DIF is significantly different from zero, and is either a) less than 1.5, or b) not significantly different from one.
C (moderate to large)	MH D-DIF is significantly different from one, and has an absolute value greater than 1.5.

Operational items flagged for negative C (C-) DIF are reviewed by an expert DIF review panel consisting of NJDOE staff responsible for the NJ ASK, and external educators identified by NJDOE during the item review meetings, to ensure that the items are free from any bias before being used to produce final test scores.

### **6.5 Summary Statistics**

Means and standard deviations of students' raw scores on each content area are given in Tables 6.5.1 (grade 3) and 6.5.2 (grade 4) for the March 2005 test. These data are based on the total student populations with valid scores described in Part 1 and Appendix A. Table 6.5.1 shows that grade 3 students' mean raw scores were 21.1 of 40 points for Language Arts Literacy, and 22.2 of 33 points for Mathematics. The table also shows the standard deviations of the raw scores for grade 3 were 5.2 on Language Arts Literacy and 6.4 on Mathematics. Table 6.5.2 shows that grade 4 students' mean raw scores were 22.2 of 43 points for Language Arts Literacy, 27.4 of 43 points for Mathematics, and 24.3 of 39 points for Science. The table also shows the standard deviations of the raw scores for grade 4 were 5.8 on Language Arts Literacy, 8.6 on Mathematics, and 6.5 on Science. Raw score to scale score conversion tables by content area are included in Appendix C. Also, frequency distributions of the scale scores by content area are shown in Appendix C.

**TABLE 6.5.1****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Means and Standard Deviations of Students’  
Raw Scores by Test Section – Grade 3**

<b>TEST SECTION</b>	<b>Number of Points</b>	<b>Raw Scores Mean</b>	<b>Standard Deviation</b>	<b>Number Tested</b>
<b>Language Arts Literacy</b>	40	21.1	5.2	100,931
<b>Mathematics</b>	33	22.2	6.4	101,683

**TABLE 6.5.2****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Means and Standard Deviations of Students’  
Raw Scores by Test Section – Grade 4**

<b>TEST SECTION</b>	<b>Number of Points</b>	<b>Raw Scores Mean</b>	<b>Standard Deviation</b>	<b>Number Tested</b>
<b>Language Arts Literacy</b>	43	22.2	5.8	102,894
<b>Mathematics</b>	43	27.4	8.6	103,636
<b>Science</b>	39	24.3	6.5	103,380

**Means and Standard Deviations of Students' Raw Scores**

Tables 6.5.3 and 6.5.4 report the means and standard deviations for students’ obtained numbers of raw score points by cluster on the March 2005 tests. Table 6.5.3 shows that in Language Arts Literacy, grade 3 students’ mean percent correct was 52.7% overall with 59.5% in Reading and 45.8% in Writing. The mean raw score on the writing/speculate task in response to a picture was 4.7 points out of a possible 10 points and the mean raw score on the writing/analyze task in response to a poem was 4.4 points out of a possible 10 points. The mean percents correct in the two Reading clusters—Working with Text and Analyzing/Critiquing Text—was 73.6% and 45.4%.

With respect to the grade 3 students’ percent correct scores on the Mathematics content clusters, the data in Table 6.5.3 indicate that the mean percent correct ranged from 63.5% in Number Sense and Numerical Operations to 71.8% in Geometry and Measurement. The mathematics items are also categorized as Problem Solving and Total. The mean percent correct was 63.6% for Problem Solving and 67.3% for Total.

Table 6.5.4 shows that in Language Arts Literacy, grade 4 students' mean percent correct was 51.6% overall with 52.5% in Reading and 50.5% in Writing. The mean raw score on the writing/speculate task in response to a picture was 5.3 points out of a possible 10 points and the mean raw score on the writing/analyze task in response to a poem was 4.8 points out of a possible 10 points. The mean percents correct in the two Reading clusters—Working with Text and Analyzing/Critiquing Text—were 66.5% and 46.4%.

With respect to the grade 4 students' percent correct scores on the Mathematics content clusters, the data in Table 6.5.4 indicate that the mean percent correct ranged from 60.3% in Patterns and Algebra to 65.6% in Data Analysis, Probability, and Discrete Math. The mathematics items are also categorized as Problem Solving and Total. The mean percent correct was 60.0% for Problem Solving and 63.7% for Total.

With respect to the grade 4 students' percent correct scores on the Science content clusters, the data in Table 6.5.4 indicate that the mean percent correct ranged from 61.7% in Earth Science to 63.1% in Life Science. The Science items are also categorized as Application and Total. The mean percent correct was 63.0% for Application and 62.4% for Total.

Tables 6.5.5 and 6.5.6 show the means and standard deviations for the students' raw scores and percent correct scores on the dichotomously scored items by NJ ASK Content Area. Tables 6.5.7 and 6.5.8 provide means and standard deviations for students' raw scores and percent correct scores on the open-ended items by cluster.

**TABLE 6.5.3**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Means and Standard Deviations of Students' Raw Scores  
and Percent Correct by Content Area – Grade 3**

NJ ASK Content Area	Number of Items		Number of Possible Points	Raw Score		Percent Correct	
	Multiple- Choice	Open- Ended		Raw Scores Mean	Standard Deviation	Mean	Standard Deviation
<b>Language Arts Literacy</b>	<b>12</b>	<b>4</b>	<b>40</b>	<b>21.1</b>	<b>5.2</b>	<b>52.7</b>	<b>13.1</b>
Writing	0	2	20	9.2	2.5	45.8	12.6
Writing/Picture	0	1	10	4.7	1.4	47.2	14.1
Writing/Poem	0	1	10	4.4	1.5	44.4	14.6
Reading	12	2	20	11.9	3.4	59.5	16.8
Working with Text	10	0	10	7.4	2.1	73.6	21.3
Analyzing Text	2	2	10	4.5	1.6	45.4	16.4
<b>Mathematics*</b>	<b>27</b>	<b>3</b>	<b>33</b>	<b>22.2</b>	<b>6.4</b>	<b>67.3</b>	<b>19.3</b>
Number Sense and Numerical Operations*	10	1	10	6.3	2.5	63.5	25.2
Geometry and Measurement	8	0	8	5.7	1.6	71.8	19.6
Patterns and Algebra	5	1	8	5.2	1.9	65.3	23.8
Data Analysis, Probability, and Discrete Math	4	1	7	4.9	1.7	69.8	24.5
Problem Solving	13	3	22	14.0	4.8	63.6	21.7

\* Six multiple-choice items in the Number Sense and Numerical Operations cluster and in the Mathematics total raw score are counted as one-half point.

**TABLE 6.5.4**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Means and Standard Deviations of Students' Raw Scores  
and Percent Correct by Content Area – Grade 4**

NJ ASK Content Area	Number of Items		Number of Possible Points	Raw Score		Percent Correct	
	Multiple- Choice	Open- Ended		Raw Scores Mean	Standard Deviation	Mean	Standard Deviation
<b>Language Arts Literacy</b>	<b>11</b>	<b>5</b>	<b>43</b>	<b>22.2</b>	<b>5.8</b>	<b>51.6</b>	<b>13.5</b>
Writing	0	2	20	10.1	2.5	50.5	12.7
Writing/Picture	0	1	10	5.3	1.4	52.7	13.8
Writing/Poem	0	1	10	4.8	1.5	48.3	14.9
Reading	11	3	23	12.1	3.9	52.5	16.9
Working with Text	7	0	7	4.7	1.9	66.5	26.8
Analyzing Text	4	3	16	7.4	2.4	46.4	15.1
<b>Mathematics*</b>	<b>32</b>	<b>5</b>	<b>43</b>	<b>27.4</b>	<b>8.6</b>	<b>63.7</b>	<b>19.9</b>
Number Sense and Numerical Operations*	11	2	13	8.4	3.1	65.0	23.6
Geometry and Measurement	7	1	10	6.3	2.1	63.4	21.5
Patterns and Algebra	7	1	10	6.0	2.5	60.3	24.8
Data Analysis, Probability, and Discrete Math	7	1	10	6.6	2.3	65.6	23.2
Problem Solving	17	5	32	19.2	6.7	60.0	21.1
<b>Science</b>	<b>30</b>	<b>3</b>	<b>39</b>	<b>24.3</b>	<b>6.5</b>	<b>62.4</b>	<b>16.6</b>
Life Science	12	1	15	9.5	2.7	63.1	18.3
Physical Science	9	1	12	7.5	2.3	62.1	19.2
Earth Science	9	1	12	7.4	2.5	61.7	21.2
Application	24	3	33	20.8	5.6	63.0	17.0

\* Eight multiple-choice items in the Number Sense and Numerical Operations cluster and in the Mathematics total raw score are counted as one-half point.

**TABLE 6.5.5****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Means and Standard Deviations of Students' Raw Scores  
and Percent Correct on the Dichotomously Scored Items  
by Content Area – Grade 3**

NJ ASK Content Area	Number of Points	Raw Scores		Percent Correct	
		Mean	Standard Deviation	Mean	Standard Deviation
<b>Language Arts Literacy</b>	<b>12</b>	<b>8.8</b>	<b>2.5</b>	<b>73.4</b>	<b>21.0</b>
Writing <sup>a</sup>	--	--	--	--	--
Writing/Picture	--	--	--	--	--
Writing/Poem	--	--	--	--	--
-----	-----	-----	-----	-----	-----
Reading	12	8.8	2.5	73.4	21.0
Working with Text	10	7.4	2.1	73.6	21.3
Analyzing Text	2	1.4	0.7	71.9	34.2
<b>Mathematics*</b>	<b>24</b>	<b>16.6</b>	<b>4.6</b>	<b>69.0</b>	<b>19.0</b>
Number Sense and Numerical Operations*	7	4.7	1.7	67.0	24.2
Geometry and Measurement	8	5.7	1.6	71.8	19.6
Patterns and Algebra	5	3.1	1.5	61.9	29.3
Data Analysis, Probability and Discrete Math	4	3.0	1.0	75.6	25.5
-----	-----	-----	-----	-----	-----
Problem Solving	13	8.3	3.0	64.1	22.9

\* Six items in the Number Sense and Numerical Operations cluster and in the Mathematics total raw score are counted as one-half point.

a. There were no dichotomously scored writing items.

**TABLE 6.5.6****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Means and Standard Deviations of Students' Raw Scores  
and Percent Correct on the Dichotomously Scored Items  
by Content Area –Grade 4**

NJ ASK Content Area	Number of Points	Raw Scores		Percent Correct	
		Mean	Standard Deviation	Mean	Standard Deviation
<b>Language Arts Literacy</b>	<b>11</b>	<b>7.5</b>	<b>2.5</b>	<b>68.3</b>	<b>22.4</b>
Writing <sup>a</sup>	--	--	--	--	--
Writing/Picture	--	--	--	--	--
Writing/Poem	--	--	--	--	--
-----	-----	-----	-----	-----	-----
Reading	11	7.5	2.5	68.3	22.4
Working with Text	7	4.7	1.9	66.5	26.8
Analyzing Text	4	2.9	1.0	71.5	24.8
<b>Mathematics*</b>	<b>28</b>	<b>19.0</b>	<b>5.5</b>	<b>67.9</b>	<b>19.7</b>
Number Sense and Numerical Operations*	7	5.0	1.6	71.9	22.5
Geometry and Measurement	7	4.9	1.6	70.6	23.3
Patterns and Algebra	7	4.1	1.8	59.3	25.2
Data Analysis, Probability and Discrete Math	7	4.9	1.7	70.0	24.2
-----	-----	-----	-----	-----	-----
Problem Solving	17	10.9	3.6	63.9	21.3
<b>Science</b>	<b>30</b>	<b>19.3</b>	<b>5.1</b>	<b>64.3</b>	<b>16.9</b>
Life Science	12	7.7	2.2	64.4	18.2
Physical Science	9	6.2	1.8	68.5	20.5
Earth Science	9	5.4	2.1	60.0	22.8
Application	24	15.8	4.2	65.7	17.4

\* Eight items in the Number Sense and Numerical Operations cluster and in the Mathematics total raw score are counted as one-half point.

a. There were no dichotomously scored writing items.

**TABLE 6.5.7****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Means and Standard Deviations of Students' Raw Scores  
and Percent Correct on the Open-Ended Items by Content Areas and Clusters – Grade 3**

NJ ASK Content Area	Number		Raw Scores		Percent Correct	
	Items	Points	Mean	Standard Deviation	Mean	Standard Deviation
<b>Language Arts Literacy</b>	<b>4</b>	<b>28</b>	<b>12.3</b>	<b>3.4</b>	<b>43.8</b>	<b>12.1</b>
Writing	2	20	9.2	2.5	45.8	12.6
Writing/Picture	1	10	4.7	1.4	47.2	14.1
Writing/Poem	1	10	4.4	1.5	44.4	14.6
Reading	2	8	3.1	1.3	38.8	15.8
Working with Text	0	0	--	--	--	--
Analyzing Text	2	8	3.1	1.3	38.8	15.8
<b>Mathematics</b>	<b>3</b>	<b>9</b>	<b>5.7</b>	<b>2.3</b>	<b>62.9</b>	<b>26.1</b>
Number Sense, and Numerical Operations	1	3	1.7	1.2	55.4	39.8
Geometry and Measurement	0	0	--	--	--	--
Patterns and Algebra	1	3	2.1	0.9	71.1	28.6
Data Analysis Probability and Discrete Math	1	3	1.9	1.1	62.2	35.3
Problem Solving	3	9	5.7	2.3	62.9	26.1

**TABLE 6.5.8****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Means and Standard Deviations of Students' Raw Scores  
and Percent Correct on the Open-Ended Items by Content Areas and Clusters – Grade 4**

NJ ASK Content Area	Number		Raw Scores		Percent Correct	
	Items	Points	Mean	Standard Deviation	Mean	Standard Deviation
<b>Language Arts Literacy</b>	<b>5</b>	<b>32</b>	<b>14.7</b>	<b>4.0</b>	<b>45.8</b>	<b>12.4</b>
Writing	2	20	10.1	2.5	50.5	12.7
Writing/Picture	1	10	5.3	1.4	52.7	13.8
Writing/Poem	1	10	4.8	1.5	48.3	14.9
Reading	3	12	4.6	1.9	38.0	15.5
Working with Text	0	0	--	--	--	--
Analyzing Text	3	12	4.6	1.9	38.0	15.5
<b>Mathematics</b>	<b>5</b>	<b>15</b>	<b>8.4</b>	<b>3.7</b>	<b>55.7</b>	<b>24.7</b>
Number Sense, and Numerical Operations	2	6	3.4	1.9	56.9	31.6
Geometry and Measurement	1	3	1.4	0.9	46.7	31.3
Patterns and Algebra	1	3	1.9	1.2	62.6	39.9
Data Analysis Probability and Discrete Math	1	3	1.7	1.1	55.3	35.5
Problem Solving	5	15	8.4	3.7	55.7	24.7
<b>Science</b>	<b>3</b>	<b>9</b>	<b>5.0</b>	<b>2.1</b>	<b>55.8</b>	<b>23.2</b>
Life Science	1	3	1.7	1.2	57.8	40.5
Physical Science	1	3	1.3	0.9	42.7	29.5
Earth Science	1	3	2.0	0.9	66.9	30.9
Application	3	9	5.0	2.1	55.8	23.2

**PART 7: SCALING AND EQUATING**

When tests are administered on multiple occasions, there is a need to create multiple forms. A test form is a set of test questions that is built according to a set of content and statistical test specifications (Millman and Greene, 1989). It is difficult to create two forms that are identical in difficulty. Kolen and Brennan (1995) define equating as a statistical process used to adjust scores on test forms so scores on the forms can be used interchangeably. For example, the level of knowledge and skills need to obtain a score of 200 on the 2005 grade 4 NJ ASK Mathematics form must be the same level of knowledge and skills needed to obtain a 200 on the 1999 grade 4 NJ ASK Mathematics form. To facilitate the correct interpretation of scores from multiple

forms, test scores are reported as scale scores. Each form of a test has its own raw-to-scale conversion. The scale scores are intended to be comparable across forms within a grade and subject. NJ ASK scale scores are not comparable across subjects (e.g., Language Arts Literacy and Mathematics) or grades (e.g., 3 and 4).

## 7.1 Scaling

The total scores in the 2005 NJ ASK Language Arts Literacy and Mathematics sections are reported as scale scores with a range of 100 to 300. Please note that 100 and 300 are a theoretical floor and ceiling and may not actually be observed. The scale score of 200 is the cut point between Partially Proficient and Proficient students. The scale score of 250 is the cut point between Proficient and Advanced Proficient students. The score ranges are as follows:

Partially Proficient	100-199
Proficient	200-249
Advanced Proficient	250-300

The scores of students who are included in the Partially Proficient level are considered to be below the state minimum level of proficiency. These students may need additional instructional support, which could be in the form of individual or programmatic intervention. It is important that districts consider multiple measures with all students before making decisions about students' instructional placement.

Scale scores for the NJ ASK tests are linearly related to the raw score metric of the base year. Thus, to obtain scale scores for each test, a set of scaling parameters are applied to the raw score metrics in the base years. The base year is the year the cut scores were set on the form. The base year for the grade 4 Language Arts Literacy test is 2001. For grade 4 Mathematics, the base year is 1999. For grade 3 Language Arts Literacy and Mathematics, 2004 is the base year. And, for grade 4 Science, the base year is 2005. Table 7.1.1 shows the scaling parameters for each test.

**TABLE 7.1.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Scaling Parameters for Base Forms**

Grade	Subject	Base Year	Points	Slope	Intercept
3	Language Arts Literacy	2004	0-40	4.00000	128.0000
	Mathematics	2004	0-33	4.76190	119.0477
4	Language Arts Literacy	2001	0-43	4.34783	106.5217
	Mathematics	1999	0-43	4.16667	104.1666
	Science	2005	0-39	4.54545	113.6365

## 7.2 Equating Language Arts Literacy

The equating design used in grade 3 and grade 4 Language Arts Literacy is the same. The base year for grade 3 is 2004. Scores on the 2005 NJ ASK grade 3 Language Arts Literacy form was

equated back to scores on the 2004 NJ ASK grade 3 Language Arts Literacy base form via 2004 anchored Rasch difficulty parameters and using IRT true score equating procedures. The grade 3 base year Language Arts Literacy raw score scale ranged from 0-40.0. The base year raw cut score for Proficient was 18.0 (200) and the raw cut score for Advanced Proficient was 30.5 (250). These raw cut scores were derived from a standard-setting workshop in 2004.

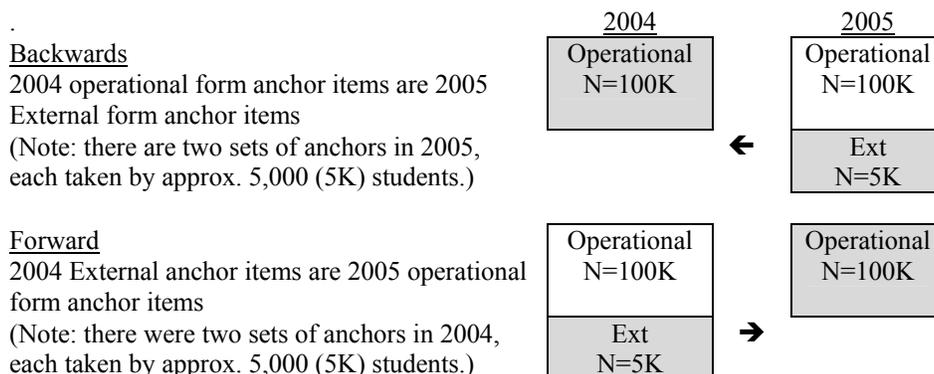
Scores on the 2005 NJ ASK grade 4 Language Arts Literacy form were equated back to scores on the 2001 Language Arts Literacy base form via 2004 anchored Rasch difficulty parameters and using IRT true score equating procedures. The grade 4 base year Language Arts Literacy raw score scale ranged from 0-43.0. The base year raw cut score for Proficient was 21.5 (200) and the raw cut score for Advanced Proficient was 33.0 (250). These raw cut scores were derived from a standard-setting workshop in 2001.

To perform equating, data must be collected. NJ ASK uses a Common-Item Nonequivalent Groups design. Common items are items that appear on both the reference (e.g., 2004) and new (e.g., 2005) forms. Common items are often also called linking and/or anchor items. The meaning of “Nonequivalent Groups” is that a different set of students took the reference and new forms, and no assumptions are made that the two groups are equal in ability. The groups could have the same ability, but the students taking the new form could also be more able or less able than the students taking the reference form.

The Language Arts Literacy equating design makes use of external anchor items (i.e., common items that do not count toward a student’s operational score). Language Arts Literacy uses an external anchor design that allows for two sets of anchor items to be used in the equating. The two designs have been called Backwards and Forward. The Backwards equating anchor items were operational items on the old form (e.g., 2004) and are in external sets on the new form (e.g., 2005). The Forward equating items were “pre-tested” as external sets on the old form (2004) and appear in the operational form on the new form (2005). In 2005, as recommended by the NJ Technical Advisory Committee, the results of these two approaches were then combined to yield the final results.

**Figure 7.2.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Language Arts Literacy Backwards and Forward Equating Designs**



The final, Combined, equating approach makes use of the difficulty values from both Backwards and Forward calibrations. The Backwards and Forward difficulties are averaged. In addition, the step parameters are averaged. These item parameters are fixed and used to generate a Combined test characteristic curve (TCC). Through interpolation back to the base year a raw-score to scale-score conversion is obtained. The averaged b-values and step parameters will be used for equating in the following year.

For grade 3, performance on the equating anchor items indicate students in 2005 were more able than in 2004, and the 2005 form was more difficult than the 2004 form. The recommended raw-score cut points 2005 for the grade 3 Language Arts Literacy test were 16.5 and 29.0 for proficient and advanced proficient categories, respectively. Details about the methods and results are described in the 2005 NJ ASK Grade 3 Language Arts Literacy Equating Report.

For grade 4, performance on the equating anchor items indicate students in 2005 were less able than students in 2004, and the 2005 form was more difficult than the 2004 form. The recommended raw-score cut points this year for Language Arts Literacy were 17.5 and 31.0 for proficient and advanced proficient categories respectively. Details about the methods and results are described in the 2005 NJ ASK Grade 4 Language Arts Literacy Equating Report.

Table 7.2.1 shows the Rasch difficulty parameters (“Measure”), and item fit statistics from WINSTEPS for the Combined equating solution for grade 3. Table 7.2.2 shows the fixed step parameters for the open-ended anchor items for grade 3. Table 7.2.3 shows the Rasch difficulty parameters, and item fit statistics from WINSTEPS for the Combined equating solution for grade 4. Table 7.2.4 shows the fixed step parameters for the open-ended anchor items for grade 4. The raw-to-scale score conversion tables for Language Arts Literacy for 2005 may be found in Appendix C.

To create Braille forms a committee reviewed the 2005 Language Arts Literacy test items. Items that could not be translated into Braille were dropped from the Braille version of the operational form. Separate raw-to-scale score conversion tables were created for the Braille forms.

**TABLE 7.2.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Language Arts Literacy Item Parameters – Grade 3**

Item No.	Measure	Anchor	Error	IN FIT		OUT FIT		Score	
				MNSQ	ZSTD	MNSQ	ZSTD	Corr.	Displace
1	0.6616	Free	0.0017	0.94	-9.9	0.94	-9.9	0.77	0.03
2	-0.2706	Anchor	0.0043	0.98	-4.9	0.94	-7.0	0.47	0.04
3	-0.3205	Anchor	0.0044	0.97	-5.9	0.98	-2.4	0.43	0.00
4	-0.4536	Anchor	0.0046	0.91	-9.9	0.94	-5.2	0.41	-0.05
5	-0.6706	Anchor	0.0052	0.92	-9.9	0.84	-9.9	0.39	-0.03
6	-0.0662	Anchor	0.0040	1.17	9.9	1.24	9.9	0.38	0.11
7	0.1600	Anchor	0.0038	1.11	9.9	1.23	9.9	0.39	0.07
8	1.1193	Anchor	0.0026	0.79	-9.9	0.79	-9.9	0.65	-0.08
9	0.8687	Free	0.0017	1.08	9.9	1.10	9.9	0.73	0.01
10	-0.6994	Anchor	0.0052	0.88	-9.9	0.70	-9.9	0.44	-0.01
11	-0.7091	Anchor	0.0053	0.95	-7.5	0.81	-9.9	0.38	-0.02
12	0.1276	Anchor	0.0038	1.05	9.9	1.09	9.9	0.43	0.05
13	0.1153	Anchor	0.0038	1.10	9.9	1.20	9.9	0.37	-0.01
14	-0.3494	Anchor	0.0044	0.87	-9.9	0.73	-9.9	0.49	-0.04
15	0.4589	Anchor	0.0037	1.13	9.9	1.26	9.9	0.36	-0.02
16	1.3864	Anchor	0.0027	0.85	-9.9	0.85	-9.9	0.66	-0.06

**TABLE 7.2.2**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Language Arts Literacy Fixed OE Item Step Parameters – Grade 3**

Item	Category	Step	Item	Category	Step
8	0	0.00	16	0	0.00
8	1	-0.97	16	1	-0.99
8	2	-2.39	16	2	-2.89
8	3	-0.30	16	3	-0.63
8	4	-1.01	16	4	-1.12
8	5	0.70	16	5	0.73
8	6	0.54	16	6	0.32
8	7	2.22	16	7	2.58
8	8	1.19	16	8	2.00

**TABLE 7.2.3**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Language Arts Literacy Item Parameters – Grade 4**

Item No.	Measure	Anchor	Error	INFIT		OUTFIT		Score	
				MNSQ	ZSTD	MNSQ	ZSTD	Corr.	Displace
1	0.4244	Free	0.0017	0.92	-9.9	0.92	-9.9	0.76	0.02
2	0.0138	Anchor	0.0037	0.89	-9.9	0.87	-9.9	0.50	-0.05
3	0.0089	Anchor	0.0037	1.23	9.9	1.43	9.9	0.24	0.00
4	-0.5629	Anchor	0.0046	0.76	-9.9	0.59	-9.9	0.46	-0.13
5	-0.0545	Anchor	0.0038	0.94	-9.9	0.88	-9.9	0.46	-0.05
6	0.2172	Anchor	0.0036	1.03	9.7	1.09	9.9	0.42	-0.01
7	0.8448	Anchor	0.0026	0.74	-9.9	0.74	-9.9	0.69	0.08
8	1.1773	Anchor	0.0024	0.69	-9.9	0.69	-9.9	0.69	0.01
9	0.7239	Free	0.0016	1.02	3.5	1.05	9.0	0.74	-0.02
10	0.5202	Anchor	0.0035	1.06	9.9	1.13	9.9	0.40	0.01
11	-0.2125	Anchor	0.0039	0.87	-9.9	0.78	-9.9	0.49	-0.04
12	-0.1530	Anchor	0.0039	0.96	-9.9	0.92	-9.9	0.48	0.05
13	-0.1177	Anchor	0.0038	1.04	9.9	1.20	9.9	0.34	-0.07
14	0.1959	Anchor	0.0036	1.19	9.9	1.32	9.9	0.28	-0.03
15	-0.2424	Anchor	0.0040	0.93	-9.9	0.90	-9.9	0.43	-0.05
16	1.0669	Anchor	0.0021	0.94	-9.9	0.94	-9.9	0.64	0.02

**TABLE 7.2.4**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Language Arts Literacy Fixed OE Item Step Parameters – Grade 4**

Item	Category	Step	Item	Category	Step	Item	Category	Step
7	0	0.00	8	0	0.00	16	0	0.00
7	1	-1.31	8	1	-0.95	16	1	-0.11
7	2	-2.34	8	2	-1.94	16	2	-1.74
7	3	-0.68	8	3	-0.77	16	3	-0.87
7	4	-0.84	8	4	-1.08	16	4	-1.01
7	5	0.94	8	5	0.93	16	5	0.49
7	6	0.77	8	6	0.72	16	6	0.45
7	7	2.01	8	7	2.18	16	7	1.38
7	8	1.45	8	8	0.91	16	8	1.40

### 7.3 Equating Mathematics

The equating design used in grade 3 and grade 4 Mathematics is the same. The base year for grade 3 is 2004. Scores on the 2005 NJ ASK grade 3 Mathematics form were equated back to scores on the 2004 NJ ASK grade 3 Mathematics base form via 2004 anchored Rasch difficulty parameters and using IRT true score equating procedures. The grade 3 base year Mathematics raw score scale ranged from 0-33.0. The base year raw cut score for Proficient was 17.0 (200) and the raw cut score for Advanced Proficient was 27.5 (250). These raw cut scores were derived from a standard-setting workshop in 2004.

Scores on the 2005 NJ ASK grade 4 Mathematics form were equated back to scores on the 1999 Mathematics base form via 2004 anchored Rasch difficulty parameters and using IRT true score equating procedures. The grade 4 base year Mathematics raw score scale ranged from 0-43.0. The base year raw cut score for Proficient was 23.0 (200) and the raw cut score for Advanced Proficient was 35.0 (250). These raw cut scores were derived from a standard-setting workshop in 1999.

The data collection design for the NJ ASK Mathematics test is also a Common-Item Nonequivalent Groups design. The Mathematics test uses internal anchor items. Internal anchor items are common items that are embedded in the operational set of items (i.e., they count toward a student's operational score).

For grade 3, equating was carried out using 11 anchor items from the 2004 form. Nine anchor items were multiple-choice and two were open-ended (for a total of 15 points). All of the anchors were embedded in the new form. Sample size was 101,279 or approximately 99% of the total NJ grade 3 population. The 2005 students appear to be more able than the 2004 students and the 2005 form was more difficult than the 2004 Mathematics form. The recommended raw-score (and scale-score) cut points for the 2005 Mathematics NJ ASK based on the equating results were 16.0 (200) and 27.0 (250) for proficient and advanced proficient categories respectively. Details about the methods and results are described in the 2005 NJ ASK Grade 3 Mathematics Equating Report.

For grade 4, equating was carried out using 11 anchor items from the 2004 form. Ten anchor items were multiple-choice and one was open-ended (13 points). All of the anchors were embedded in the new form. Sample size was 103,548 or approximately 99% of the total NJ grade 4 population. The 2005 students appear to be more able than the 2004 students and the 2005 form was slightly less difficult in the center of the scale than the 2004 Mathematics form. The recommended raw-score (and scale-score) cut points for the 2005 Mathematics NJ ASK based on the equating results were 20.0 (200) and 33.0 (250) for proficient and advanced proficient categories respectively. Details about the methods and results are described in the 2005 NJ ASK Grade 4 Mathematics Equating Report.

Table 7.3.1 shows the Rasch difficulty parameters ("Measure"), and item fit statistics from WINSTEPS for the equating for grade 3. Table 7.3.2 shows the fixed step parameters for the open-ended items for grade 3. Table 7.3.3 shows the Rasch difficulty parameters, and item fit statistics from WINSTEPS for grade 4. Table 7.3.4 shows the fixed step parameters for the open-

ended items for grade 4. The raw-to-scale score conversion tables for Mathematics for 2005 are presented in Appendix C. To create Braille forms a committee reviewed the 2005 Mathematics test items. Items that could not be translated into Braille were dropped from the Braille version of the operational form. Separate raw-to-scale score conversion tables were created for the Braille forms.

**TABLE 7.3.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Mathematics Item Parameters – Grade 3**

Item No.	Measure	Anchor	Error	IN FIT		OUT FIT		Score	
				MNSQ	ZSTD	MNSQ	ZSTD	Corr.	Displace
1	0.1140	Free	0.0068	0.91	-9.9	0.88	-9.9	0.40	0.00
2	-0.0997	Free	0.0071	0.89	-9.9	0.86	-9.9	0.42	-0.01
3	-1.2113	Free	0.0094	0.93	-9.9	0.81	-9.9	0.32	-0.01
4	-0.1628	Free	0.0071	0.93	-9.9	0.89	-9.9	0.36	0.00
5	-0.5337	Free	0.0077	0.93	-9.9	0.87	-9.9	0.34	0.00
6	-0.3875	Free	0.0075	0.93	-9.9	0.88	-9.9	0.36	0.00
7	0.4118	Free	0.0037	1.05	9.9	1.08	9.9	0.39	0.00
8	0.6813	Free	0.0035	1.24	9.9	1.36	9.9	0.26	0.00
9	-0.4224	Free	0.0051	0.97	-4.9	1.01	0.6	0.32	0.00
10	0.6143	Free	0.0036	1.10	9.9	1.16	9.9	0.36	0.00
11	0.7738	Free	0.0035	0.92	-9.9	0.91	-9.9	0.50	0.00
12	0.2205	Anchor	0.0038	0.94	-9.9	0.89	-9.9	0.43	-0.04
13	-0.5852	Free	0.0057	0.93	-8.4	0.82	-9.9	0.33	0.00
14	0.2413	Anchor	0.0023	1.13	9.9	1.15	9.9	0.51	-0.10
15	0.3404	Free	0.0037	1.17	9.9	1.31	9.9	0.28	0.00
16	0.8130	Free	0.0035	0.97	-9.9	0.97	-6.0	0.47	0.00
17	-0.2424	Anchor	0.0046	0.94	-9.9	1.01	0.5	0.30	-0.08
18	0.1612	Anchor	0.0039	0.94	-9.9	0.87	-9.9	0.50	0.09
19	0.5642	Free	0.0036	1.06	9.9	1.10	9.9	0.39	0.00
20	0.3068	Anchor	0.0037	1.08	9.9	1.05	7.2	0.45	0.17
21	-0.1714	Anchor	0.0045	0.98	-4.6	0.89	-9.9	0.41	0.05
22	0.6656	Free	0.0019	1.00	0.9	1.00	-0.1	0.66	0.00
23	-0.4126	Anchor	0.0051	1.25	9.9	1.48	9.9	0.28	0.15
24	0.0977	Free	0.0040	1.11	9.9	1.20	9.9	0.30	0.00
25	0.2626	Anchor	0.0038	1.01	3.5	1.01	1.7	0.42	0.05
26	0.0659	Anchor	0.0040	0.94	-9.9	0.83	-9.9	0.49	0.09
27	0.3430	Free	0.0037	0.97	-8.8	0.93	-9.9	0.44	0.00
28	0.3592	Anchor	0.0037	1.09	9.9	1.15	9.9	0.38	0.06
29	0.6690	Free	0.0035	0.96	-9.9	0.95	-9.9	0.47	0.00
30	0.4898	Anchor	0.0020	1.07	9.9	1.06	9.9	0.61	-0.02

**TABLE 7.3.2**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Mathematics Fixed OE Item Step Parameters – Grade 3**

Item	Category	Step
14	0	0.00
14	1	0.29
14	2	-1.52
14	3	0.96
14	4	-0.95
14	5	1.97
14	6	-0.75

Item	Category	Step
22	0	0.00
22	1	1.89
22	2	-2.00
22	3	1.94
22	4	-1.93
22	5	1.95
22	6	-1.84

Item	Category	Step
30	0	0.00
30	1	0.69
30	2	-1.28
30	3	0.94
30	4	-0.90
30	5	1.58
30	6	-1.03

**TABLE 7.3.3**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Mathematics Item Parameters – Grade 4**

Item No.	Measure	Anchor	Error	IN FIT		OUT FIT		Score	
				MNSQ	ZSTD	MNSQ	ZSTD	Corr.	Displace
1	-0.7106	Free	0.0083	0.92	-9.9	0.85	-9.9	0.35	0.00
2	-0.4466	Free	0.0077	0.92	-9.9	0.84	-9.9	0.38	0.00
3	0.1820	Free	0.0068	0.88	-9.9	0.85	-9.9	0.45	0.00
4	-0.2051	Free	0.0073	0.91	-9.9	0.85	-9.9	0.40	0.00
5	-0.4897	Free	0.0078	0.96	-8.2	0.92	-9.9	0.29	0.00
6	-1.0054	Free	0.0091	0.91	-9.9	0.77	-9.9	0.38	0.00
7	0.2562	Free	0.0067	0.87	-9.9	0.84	-9.9	0.47	0.00
8	-0.7476	Free	0.0084	0.92	-9.9	0.84	-9.9	0.35	0.00
9	0.1105	Free	0.0042	0.93	-9.9	0.89	-9.9	0.43	0.00
10	0.5797	Free	0.0036	1.00	-0.6	1.00	-1.0	0.43	0.00
11	0.7335	Free	0.0035	1.02	8.3	1.04	7.7	0.41	0.00
12	0.0178	Anchor	0.0043	1.15	9.9	1.24	9.9	0.31	0.07
13	0.1064	Free	0.0042	1.01	1.8	0.95	-5.5	0.38	0.00
14	0.4913	Free	0.0037	0.96	-9.9	0.93	-9.9	0.45	0.00
15	0.1235	Free	0.0041	0.84	-9.9	0.72	-9.9	0.51	0.00
16	0.2763	Free	0.0039	0.97	-7.0	0.93	-9.6	0.42	0.00
17	1.1627	Anchor	0.0035	0.96	-9.9	1.00	0.7	0.45	0.04
18	-0.2557	Anchor	0.0050	1.02	2.8	0.96	-3.1	0.34	0.03
19	0.7756	Free	0.0035	1.00	0.8	1.01	1.9	0.43	0.00
20	0.2945	Free	0.0039	1.01	1.3	1.01	1.6	0.39	0.00
21	0.7859	Anchor	0.0019	1.06	9.9	1.07	9.9	0.63	-0.05
22	0.3787	Free	0.0038	0.96	-9.9	0.91	-9.9	0.44	0.00
23	-0.0892	Anchor	0.0046	0.93	-9.9	0.81	-9.9	0.41	-0.01
24	0.8801	Free	0.0035	0.99	-3.8	1.01	2.7	0.44	0.00
25	0.9746	Anchor	0.0035	1.09	9.9	1.14	9.9	0.37	-0.07
26	0.3394	Free	0.0038	0.95	-9.9	0.90	-9.9	0.45	0.00
27	0.1740	Free	0.0041	1.03	7.0	1.00	0.2	0.37	0.00
28	0.7088	Free	0.0018	1.26	9.9	1.41	9.9	0.57	0.00
29	0.7880	Free	0.0020	1.28	9.9	1.32	9.9	0.54	0.00
30	1.0033	Anchor	0.0035	1.07	9.9	1.15	9.9	0.37	0.05
31	0.1669	Anchor	0.0041	1.05	9.9	1.08	9.6	0.39	0.06
32	1.0818	Free	0.0035	0.98	-5.7	1.01	2.6	0.45	0.00
33	0.6876	Anchor	0.0035	1.17	9.9	1.22	9.9	0.36	0.23
34	0.4580	Anchor	0.0037	1.00	-1.0	0.98	-4.1	0.44	0.04
35	0.1068	Anchor	0.0042	1.05	9.9	1.04	4.6	0.42	0.09
36	0.8211	Free	0.0019	1.03	8.0	1.04	6.9	0.65	0.00
37	1.1099	Free	0.0021	1.21	9.9	1.24	9.9	0.53	0.00

**TABLE 7.3.4****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Mathematics Fixed OE Item Step Parameters – Grade 4**

Item	Category	Step	Item	Category	Step	Item	Category	Step
21	0	0.00	28	0	0.00	29	0	0.00
21	1	1.47	28	1	2.33	29	1	0.65
21	2	-1.49	28	2	-1.23	29	2	-1.21
21	3	1.39	28	3	1.03	29	3	0.86
21	4	-1.86	28	4	-2.33	29	4	-1.00
21	5	2.67	28	5	1.95	29	5	2.12
21	6	-2.18	28	6	-1.76	29	6	-1.42

Item	Category	Step	Item	Category	Step
36	0	0.00	37	0	0.00
36	1	0.79	37	1	2.35
36	2	-0.71	37	2	-3.35
36	3	0.46	37	3	1.79
36	4	-0.97	37	4	-2.77
36	5	2.07	37	5	4.41
36	6	-1.63	37	6	-2.43

**7.4 Equating Science**

The NJ ASK grade 4 Science test became operational in 2005. Standard setting workshops were held after the administration. As a result, equating was not necessary for the 2005 NJ ASK grade 4 Science assessment. See Part 5, Standard-Setting, for more information about the scaling of the 2005 NJ ASK grade 4 Science section.

**Part 8: Validity****Content and Curricular Validity**

The New Jersey Department of Education is developing a comprehensive set of assessments that measure student achievement of the Core Curriculum Content Standards. The validity of the NJ ASK scores is based on the alignment of the NJ ASK assessments to the Core Curriculum Content Standards and the knowledge and skills expected of third- and fourth-grade students.

The Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999, p. 11-12) notes the following possible sources of validity evidence:

- Evidence based on test content
- Evidence based on internal structure of the test
- Evidence based on relations to other variables
- Evidence based on consequences of testing

For an assessment like NJ ASK, which is intended to measure students' performance in relation to the Core Curriculum Content Standards, content validity evidence is primary. Content validity is the most relevant and important source of evidence. The section of this technical report on "Test Development," presents validity evidence based on test content. A description of the test specification development is followed by the procedures for test item development. Details about item writing as well as task, prompt, and passage selection are included. The last section delineates the review work of the New Jersey Assessment Content Committees. Additionally, an external committee is assisting the New Jersey Department of Education by reviewing the assessments to determine how well they measure the knowledge and skills stated in the standards, and by comparing the New Jersey standards with those in other states and countries.

## **PART 9: TEST RELIABILITY**

### **9.1 Classical Reliability Estimates of the Test Scores**

Tables 9.1.1 and 9.1.2 summarize reliability estimates for the NJ ASK grades 3 and 4 content areas and clusters. The reliability coefficients given in these tables are based on Cronbach's coefficient alpha measure of internal consistency. Cronbach's alpha is used on tests containing items that can be scored along a range of values. The standard errors of measurement (SEMs) for the major content areas - Language Arts Literacy and Mathematics - are expressed in terms of the raw score metric and the scale score metric. The NJ ASK scale scores range from 100 to 300.

Reliabilities and SEMs for the dichotomously scored items in each cluster are reported in Tables 9.1.3 and 9.1.4.

When evaluating these results, it is important to recall that reliability is partially a function of test length. Therefore, the reliability of a content area is likely to be greater than the reliability of a cluster simply because the content area has more items. Similarly, clusters with more items are likely to be more reliable than clusters with fewer items. The data provided in Tables 9.1.1, 9.1.2, 9.1.3 and 9.1.4 reflect the expected positive relationship between test length and reliability.

The SEMs given in Tables 9.1.1, 9.1.2, 9.1.3 and 9.1.4 are useful when interpreting students' scores. Measurement error occurs in every test. A student's true score is a hypothetical average score that the student would obtain if a test were repeatedly administered to the student without the effects of instruction, practice, or fatigue. Mehrens and Lehmann (1991) suggest this use of the SEM:

The standard error of measurement is often used for what is called band interpretation. Band interpretation helps convey the idea of imprecision of measurement.... If we assume that the errors are random, an individual's observed scores will be normally distributed about his true score over repeated testing. Thus, one can say that a person's observed score will lie between  $\pm 1$  SE of his true score approximately 68 percent of the time, or  $\pm 2$  SE of his true score about 95 percent of the time (p. 252).

**TABLE 9.1.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Reliability Estimates and Standard Errors of Measurement (SEM)  
for Content Areas and Clusters – Grade 3**

<b>NJ ASK Test Section</b>	<b>Number of Points</b>	<b>Reliability</b>	<b>Raw Score SEM</b>	<b>Scale Score SEM</b>
<b>Language Arts Literacy</b>	<b>40</b>	<b>0.82</b>	<b>2.22</b>	<b>9.06</b>
Reading	20	0.79	1.55	.
Writing	20	0.70	1.38	.
Working with Text	10	0.67	1.22	.
Analyzing Text	10	0.66	0.96	.
<b>Mathematics</b>	<b>33</b>	<b>0.85</b>	<b>2.45</b>	<b>11.11</b>
Number Sense and Numerical Operations	10	0.71	1.36	.
Geometry and Measurement	8	0.45	1.16	.
Patterns and Algebra	8	0.57	1.24	.
Data analysis, Probability and Discrete Math	7	0.48	1.23	.
Problem Solving	22	0.80	2.12	.

**TABLE 9.1.2****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Reliability Estimates and Standard Errors of Measurement (SEM)  
for Content Areas and Clusters – Grade 4**

<b>NJ ASK Test Section</b>	<b>Number of Points</b>	<b>Reliability</b>	<b>Raw Score SEM</b>	<b>Scale Score SEM</b>
<b>Language Arts Literacy</b>	<b>43</b>	<b>0.84</b>	<b>2.34</b>	<b>9.21</b>
Reading	23	0.80	1.72	.
Writing	20	0.71	1.37	.
Working with Text	7	0.67	1.07	.
Analyzing Text	16	0.70	1.34	.
<b>Mathematics</b>	<b>43</b>	<b>0.89</b>	<b>2.90</b>	<b>11.21</b>
Number Sense and Numerical Operations	13	0.74	1.55	.
Geometry and Measurement	10	0.59	1.37	.
Patterns and Algebra	10	0.53	1.69	.
Data analysis, Probability and Discrete Math	10	0.62	1.44	.
Problem Solving	32	0.84	2.71	.
<b>Science</b>	<b>39</b>	<b>0.81</b>	<b>2.83</b>	<b>12.86</b>
Life Science	15	0.53	1.87	.
Physical Science	12	0.57	1.51	.
Earth Science	12	0.61	1.58	.
Application	33	0.78	2.62	.

**TABLE 9.1.3****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Reliability Estimates and Standard Errors of Measurement (SEM)  
for Dichotomously Scored Items Within Content Clusters – Grade 3**

<b>NJ ASK Content Area</b>	<b>Number of Points</b>	<b>Reliability</b>	<b>Raw Score SEM</b>
<b>Language Arts Literacy</b>	<b>12</b>	<b>0.72</b>	<b>1.34</b>
Reading	12	0.72	1.34
Writing*	--	--	--
Writing/Picture	--	--	--
Writing/Poem	--	--	--
-----	-----	-----	-----
Working with Text	10	0.67	1.22
Analyzing Text	2	0.33	0.56
<b>Mathematics</b>	<b>24</b>	<b>0.82</b>	<b>1.96</b>
Number Sense and Numerical Operations	7	0.66	0.99
Geometry and Measurement	8	0.45	1.16
Patterns and Algebra	5	0.58	0.95
Data analysis, Probability and Discrete Math	4	0.46	0.75
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Problem Solving	13	0.74	1.53

**TABLE 9.1.4****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)****Reliability Estimates and Standard Errors of Measurement (SEM)  
for Dichotomously Scored Items Within Content Clusters – Grade 4**

<b>NJ ASK Content Area</b>	<b>Number of Points</b>	<b>Reliability</b>	<b>Raw Score SEM</b>
<b>Language Arts Literacy</b>	<b>11</b>	<b>0.69</b>	<b>1.37</b>
Reading	11	0.69	1.37
Writing*	--	--	--
Writing/Picture	--	--	--
Writing/Poem	--	--	--
-----	-----	-----	-----
Working with Text	7	0.67	1.07
Analyzing Text	4	0.28	0.84

**TABLE 9.1.4 (Continued)**  
**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Reliability Estimates and Standard Errors of Measurement (SEM)  
for Dichotomously Scored Items Within Content Clusters – Grade 4**

NJ ASK Content Area	Number of Points	Reliability	Raw Score SEM
<b>Mathematics</b>	<b>28</b>	<b>0.86</b>	<b>2.06</b>
Number Sense and Numerical Operations	7	0.67	0.90
Geometry and Measurement	7	0.57	1.06
Patterns and Algebra	7	0.52	1.22
Data analysis, Probability and Discrete Math	7	0.62	1.04
Problem Solving	17	0.76	1.78
<b>Science</b>	<b>30</b>	<b>0.79</b>	<b>2.35</b>
Life Science	12	0.56	1.45
Physical Science	9	0.53	1.26
Earth Science	9	0.58	1.33
Application	24	0.75	2.09

\* There were no dichotomously scored writing items.

## 9.2 Reliability of Performance Classifications

Decision accuracy provides an estimate of how reliably scores from a test form classifies students into performance categories. It is determined by comparing the observed score distribution for a form to a hypothetical true score distribution. The observed score distribution (also called single-form score distribution) is the actual distribution of scores for all test takers on a test form. The true score distribution is hypothetical because true scores cannot be known, although, they can be estimated. A true score is the average of the observed scores for a student obtained over an infinite number of repeated administrations of the same form.

The methodology used for estimating the reliability of classification and decision accuracy is described in Livingston and Lewis (1995) and is implemented using the ETS-proprietary computer program RELCLASS-COMP (Version 4.12). RELCLASS-COMP generates a contingency table that shows the proportion of exact agreement between the two distributions. In Tables 9.2.1 and 9.2.2, the cells showing exact agreement are shaded. The sum of the shaded, diagonal cells represents the estimated proportion correctly classified.

Table 9.2.1: For grade 3 Language Arts Literacy, the estimated proportion correctly classified overall was 0.85. When the decisions were collapsed to below proficient versus proficient and above, the estimated proportion correctly classified was 0.93. For Mathematics, the estimated

proportion correctly classified overall was 0.81. When the decisions were collapsed to below proficient versus proficient and above, the estimated proportion correctly classified was 0.93.

Table 9.2.2: For grade 4 Language Arts Literacy, the estimated proportion correctly classified overall was 0.86. When the decisions were collapsed to below proficient versus proficient and above, the estimated proportion correctly classified was 0.93. For Mathematics, the estimated proportion correctly classified overall was 0.83. When the decisions were collapsed to below proficient versus proficient and above, the estimated proportion correctly classified was 0.93. For Science, the estimated proportion correctly classified overall was 0.79. When the decisions were collapsed to below proficient versus proficient and above, the estimated proportion correctly classified was 0.91.

**TABLE 9.2.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Reliability of Classification and Decision Accuracy – Grade 3**

**Decision Accuracy: Language Arts Literacy**

		<i>Observed Score</i>			
		<b>Advanced Proficient (28.0-40.0)</b>	<b>Proficient (16.5-27.5)</b>	<b>Partially Proficient (0-16.0)</b>	<b>Observed Total</b>
<i>True Score</i>	<b>Advanced Proficient (28.0-40.0)</b>	0.00	0.07	0.00	0.08
	<b>Proficient (16.5-27.5)</b>	0.00	0.72	0.03	0.76
	<b>Partially Proficient (0-16.0)</b>	0.00	0.03	0.13	0.17
	<b>Expected Total</b>	0.00	0.83	0.17	

Estimated Proportion Correctly Classified: Total = 0.85, Proficient & Above = 0.93

**Decision Accuracy: Mathematics**

		<i>Observed Score</i>			
		<b>Advanced Proficient (27.0-33.0)</b>	<b>Proficient (16.0-26.5)</b>	<b>Partially Proficient (0-15.5)</b>	<b>Observed Total</b>
<i>True Score</i>	<b>Advanced Proficient (27.0-33.0)</b>	0.22	0.06	0.00	0.29
	<b>Proficient (16.0-26.5)</b>	0.05	0.46	0.03	0.54
	<b>Partially Proficient (0-15.5)</b>	0.00	0.04	0.13	0.17
	<b>Expected Total</b>	0.27	0.57	0.16	

Estimated Proportion Correctly Classified: Total = 0.81, Proficient & Above = 0.93

**TABLE 9.2.2**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Reliability of Classification and Decision Accuracy – Grade 4**

**Decision Accuracy Language Arts Literacy**

		<i>Observed Score</i>				
		<b>Placement Score</b>	<b>Advanced Proficient (30.0-43.0)</b>	<b>Proficient (17.5-29.5)</b>	<b>Partially Proficient (0-17.0)</b>	<b>Observed Total</b>
<i>True Score</i>	<b>Advanced Proficient (30.0-43.0)</b>	0.01	0.06	0.00	0.07	
	<b>Proficient (17.5-29.5)</b>	0.01	0.70	0.03	0.75	
	<b>Partially Proficient (0-17.0)</b>	0.00	0.03	0.15	0.18	
	<b>Expected Total</b>	0.01	0.80	0.19		

**Estimated Proportion Correctly Classified: Total = 0.86, Proficient & Above = 0.93**

**Decision Accuracy Mathematics Grade 4**

		<i>Observed Score</i>				
		<b>Placement Score</b>	<b>Advanced Proficient (33.0-43.0)</b>	<b>Proficient (20.0-32.5)</b>	<b>Partially Proficient (0-19.5)</b>	<b>Observed Total</b>
<i>True Score</i>	<b>Advanced Proficient (33.0-43.0)</b>	0.26	0.05	0.00	0.32	
	<b>Proficient (20.0-32.5)</b>	0.05	0.41	0.03	0.49	
	<b>Partially Proficient (0-19.5)</b>	0.00	0.04	0.16	0.20	
	<b>Expected Total</b>	0.31	0.49	0.19		

**Estimated Proportion Correctly Classified: Total = 0.83, Proficient & Above = 0.93**

**TABLE 9.2.2 (Continued)**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)**

**Reliability of Classification and Decision Accuracy – Grade 4**

		<b>Decision Accuracy Science</b>			
		<i>Observed Score</i>			
	<b>Placement Score</b>	<b>Advanced Proficient (30.0-39.0)</b>	<b>Proficient (19.0-29.5)</b>	<b>Partially Proficient (0-18.5)</b>	<b>Observed Total</b>
<i>True Score</i>	<b>Advanced Proficient (30.0-39.0)</b>	0.15	0.07	0.00	0.22
	<b>Proficient (19.0-29.5)</b>	0.05	0.50	0.04	0.59
	<b>Partially Proficient (0-18.5)</b>	0.00	0.05	0.14	0.19
	<b>Expected Total</b>	0.20	0.63	0.18	

**Estimated Proportion Correctly Classified: Total = 0.79, Proficient & Above = 0.91**

**9.3 Conditional Estimate of Error at Each Cut-Score**

When reviewing a cut score, it is important to keep in mind that there is measurement error surrounding that cut score. Measurement error occurs because no instrument measures a student’s level of knowledge and skills precisely. Think of the student who knows the correct answer to an item, but makes a careless arithmetic error or accidentally marks the wrong response. Or think of a student who really does not know the correct answer but who fills in the correct answer purely by chance. These situations require us to calculate a standard error of measurement for each score. For example, let’s say a student scores a 28 (out of 43) and the standard error of measurement for the score is about 2.0 raw score points. We can be 95% confident that the student’s ability put him in the range of scoring a 28 plus or minus two standard errors of measurement: that is between 24–32.

The WINSTEPS program calculates the standard error of the measure (SEM) at each score point. Unlike the classical standard error of measurement, the value of the SEM using Item Response Theory varies with ability level. The equation for standard error of estimation is given by

$$SE(\hat{\theta}) = \frac{1}{\sqrt{I(\theta)}} \tag{9.3.1}$$

where  $I(\theta)$  is the information function for a test at  $\theta$ . For the Rasch model using unweighted raw scores, the information provided by a test at  $\theta$  is the sum of the item information functions at  $\theta$  (Hambleton, Swaminathan, and Rogers, 1991). Table 9.3.1 shows conditional estimates of error at each cut score for each subject in grades 3 and 4.

**TABLE 9.3.1****2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Conditional Estimate of Error at Each Cut-Score**

Grade	Subject	Proficiency Level	Raw Score Cut	Theta Cut	Theta SE	Approximate SE in Raw Points
3	LAL	Proficient	16.5	-0.0615	0.219	2.5
		Advanced Proficient	29.5	1.5464	0.292	2.0
	Math	Proficient	16.0	0.2663	0.187	2.5
		Advanced Proficient	27.0	1.1076	0.240	2.0
Grade	Subject	Proficiency Level	Raw Score Cut	Theta Cut	Theta SE	Approximate SE in Raw Points
4	LAL	Proficient	17.5	-0.0343	0.206	2.5
		Advanced Proficient	31.0	1.4518	0.263	2.0
	Math	Proficient	20.0	0.4843	0.158	3.0
		Advanced Proficient	33.0	1.1830	0.188	3.0
	Science	Proficient	19.0	0.0202	0.165	3.0
		Advanced Proficient	30.0	0.6960	0.201	2.5

**9.4 Rater Reliability**

Tables 9.4.1 and 9.4.2 show the percentages of writing tasks and open-ended items scored with exact agreement, adjacent agreement, and resolution needed.

The Writing cluster within Language Arts Literacy consists of two writing activities: a writing/speculate task in response to a picture and a writing/analyze task related to a poem. For these writing tasks, the rubrics used by the raters had score points that ranged from 0 to 5. If two raters assigned scores to a student's writing task that were not exactly the same or adjacent, a third "expert" rater also read and assigned a score to the student's response. Of more than 200,000 task responses in grade 3 in March 2005, 56.8% received exactly the same scores by the raters and 39.7% received scores that were adjacent. Thus, a total of 96.5% of the task responses required only two raters. The remaining 3.5% received scores on the Writing Tasks that differed by more than one point and therefore required a third rater (see Table 9.4.1). For grade 4 Language Arts Literacy in March 2005, 55.9% received exactly the same scores by the raters and 40.7% received scores that were adjacent. Thus, a total of 96.6% of the task responses required only two raters. The remaining 3.4% received scores on the Writing Tasks that differed by more than one point and therefore required a third rater (see Table 9.4.2).

The Reading cluster and the Mathematics content areas include open-ended items. For the Reading open-ended items, the rubric used by the raters had score points that ranged from 0 to 4.

For the Mathematics items, the rubric ranged from 0 to 3 points. Table 9.4.1 shows that for grade 3 Reading open-ended items, exact agreement was obtained 57.4% of the time. Resolution by a third rater was needed for 3.1% of the responses. For grade 3 Mathematics, exact agreement was obtained 86.8% of the time and resolution was needed for 1.1% of the task responses. Table 9.4.2 shows that for grade 4 Reading open-ended items, exact agreement was obtained 59.3% of the time. Resolution by a third rater was needed for 3.0% of the responses. For grade 4 Mathematics, exact agreement was obtained 87.0% of the time and resolution was needed for 1.8% of the responses. Finally, for grade 4 Science, exact agreement was obtained 74.5% of the time and resolution was needed for 4.8% of the open-ended responses.

**TABLE 9.4.1**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Consistency Between Raters Scoring Writing Tasks and Open-Ended Items - Grade 3**

<b>Writing Tasks and Open-Ended Items</b>	<b>Percent Raters In Exact Agreement</b>	<b>Percent Raters In Adjacent Agreement</b>	<b>Percent Resolution Needed</b>
Language Arts Literacy	57.1	39.6	3.3
<b>Writing Total</b>	<b>56.8</b>	<b>39.7</b>	<b>3.5</b>
Writing/Picture	56.6	40.3	3.1
Writing/Poem	57.0	39.1	3.9
<b>Reading Total</b>	<b>57.4</b>	<b>39.5</b>	<b>3.1</b>
Open-Ended Item 1	58.9	38.5	2.6
Open-Ended Item 2	55.8	40.5	3.6
<b>Mathematics</b>	<b>86.8</b>	<b>12.1</b>	<b>1.1</b>
Open-Ended Item 1	85.8	13.1	1.2
Open-Ended Item 2	90.5	8.3	1.3
Open-Ended Item 3	84.2	15.0	0.8

**TABLE 9.4.2**

**2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Consistency Between Raters Scoring Writing Tasks and Open-Ended Items – Grade 4**

<b>Writing Tasks and Open-Ended Items</b>	<b>Percent Raters In Exact Agreement</b>	<b>Percent Raters In Adjacent Agreement</b>	<b>Percent Resolution Needed</b>
<b>Language Arts Literacy</b>	58.0	38.9	3.1
<b>Writing Total</b>	<b>55.9</b>	<b>40.7</b>	<b>3.4</b>
Writing/Picture	57.5	39.6	3.0
Writing/Poem	54.4	41.8	3.7
<b>Reading Total</b>	<b>59.3</b>	<b>37.7</b>	<b>3.0</b>
Open-Ended Item 1	58.2	39.3	2.5
Open-Ended Item 2	59.4	38.4	2.2
Open-Ended Item 3	60.3	35.5	4.2
<b>Mathematics</b>	<b>87.0</b>	<b>11.2</b>	<b>1.8</b>
Open-Ended Item 1	89.7	8.9	1.4
Open-Ended Item 2	90.9	7.9	1.1
Open-Ended Item 3	79.7	17.1	3.1
Open-Ended Item 4	80.3	17.2	2.5
Open-Ended Item 5	94.4	4.6	1.0
<b>Science</b>	<b>74.5</b>	<b>20.7</b>	<b>4.8</b>
Open-Ended Item 1	69.7	19.9	10.4
Open-Ended Item 2	71.4	26.7	2.0
Open-Ended Item 3	82.4	15.6	2.0

## **Part 10: Reporting**

Scores are reported in two cycles, Cycle I and Cycle II. Cycle I data are considered preliminary. Schools and districts are encouraged to review student information to make sure it is correct and accurate before Cycle I reports are released. Schools have the opportunity to make corrections to student information before Cycle II reports are published. In addition, to minimize the risk of misclassification, Cycle I open ended items are automatically rescored for students whose scale scores fall between 197 and 199. Rescoring is also done at the request of districts. When the rescoring of a student's responses produces a higher raw score, the student's scale score is adjusted to reflect this change. Cycle II reports, which contain the rescored results are considered final. For more information about score reports, readers are referred to the Cycle I and II Score Interpretation Manual at the following website:

<http://www.nj.gov/njded/assessment/es/njask2005manual.pdf>.

## **10.1 Cycle I Reports**

The Cycle I reports include the following: Student Sticker, Individual Student Report, All Sections Roster, Student Roster, Summary of School Performance, Summary of District Performance, Summary of School Cluster Performance, and Summary of District Cluster Performance. Each Cycle I report is briefly described below.

### **Student Sticker**

The Student Sticker is produced alphabetically, and one sticker for each student within the school is provided. It is a peel-off label designed to be easily attached to the student's permanent record.

The scale scores in Language Arts Literacy, Mathematics and (for Grade 4 students) Science are provided. Designations of the proficiency levels are printed next to the Language Arts Literacy, Mathematics and Science scale scores. Voids, where applicable, are noted.

### **Individual Student Report**

The Individual Student Report (ISR) is a two-sided report, produced in alphabetical sequence for students within the school. Two copies of this report are produced for every student tested, one for the student's permanent folder after the results are analyzed, and the other for the student's parent/guardian to be shared in a manner determined by the local district.

The scale scores in Language Arts Literacy, Mathematics and Science are provided on the front of the ISR (Figure 10.1.1), along with explanatory text about scale scores and proficiency levels. Cluster data is provided on the back of the ISR (Figure 10.2.1), along with explanatory text about cluster scores.

The Just Proficient Mean is a statewide statistic comprised of the average or mean score attained on each cluster by all students (GE, SE, and LEP) with a scale score of 200, i.e., students who are "just proficient." Students whose NJ ASK test booklets were coded as "void" were excluded from these means.

The ISR for NJ ASK4 is shown in sample format as Figure 10.1.1 (front page) and Figure 10.1.2 (back page).

Figure 10.1.1

2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Individual Student Report (ISR) – Front

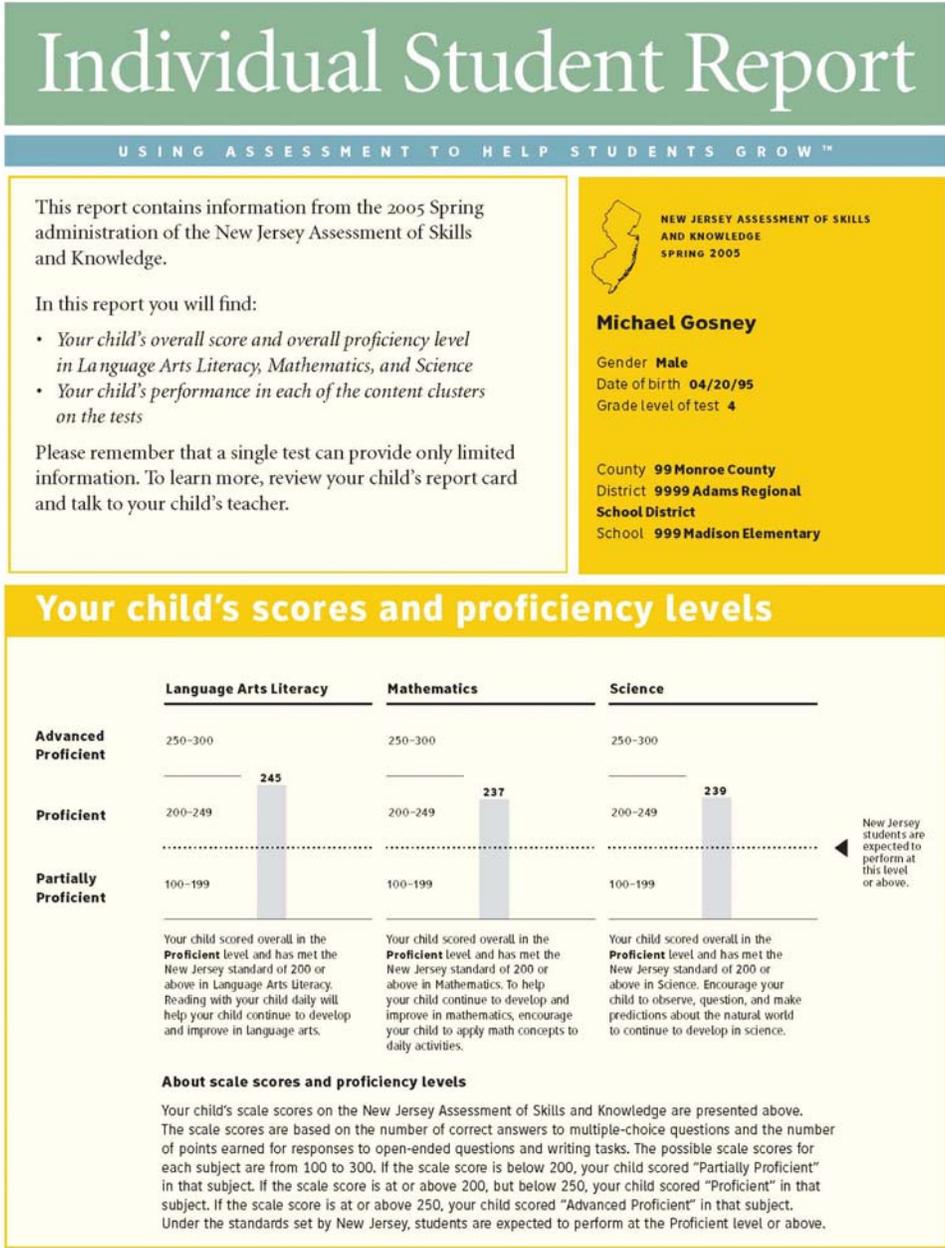


Figure 10.1.2

2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Individual Student Report (ISR) – Back

More about your child's performance

Language Arts Literacy: Cluster Scores\*

	Your Child's Points	Total Points Possible	Just Proficient Mean (JPM)**
<b>Total</b>	<b>33.5</b>	<b>43.0</b>	<b>18.0</b>
Writing	17.0	20.0	10.0
Writing about Pictures	10.0	10.0	N/A
Writing about Poems	7.0	10.0	N/A
Reading	16.5	23.0	8.0
Working with Text	6.0	8.0	3.9
Analyzing Text	10.5	15.0	4.1

The Language Arts Literacy test has two clusters: Writing and Reading. The Writing cluster consists of one writing task about a picture and one writing task about a poem. The Reading cluster, Working with Text, refers to questions that measure students' understanding of ideas and information in the text. The Reading cluster, Analyzing Text, focuses on students' analysis of what they have read. If your child did not receive a score for a writing task, a code may appear. Possible codes are: WF—Wrong Format, NE—Not English, NR—No Response, and OT—Off Topic. Just Proficient Means are not provided for writing tasks.

Mathematics: Cluster Scores\*

	Your Child's Points	Total Points Possible	Just Proficient Mean (JPM)**
<b>Total</b>	<b>30.5</b>	<b>42.0</b>	<b>22.0</b>
Number and Numerical Operations	11.0	13.0	7.7
Geometry and Measurement	7.0	10.0	4.5
Patterns and Algebra	5.5	9.0	4.8
Data Analysis, Probability, and Discrete Math	7.0	10.0	5.0
Problem Solving	20.5	32.0	15.6

The Mathematics test has five clusters. The first four are content clusters, and the last is a process cluster. The content clusters refer to four different mathematical topics. The process cluster refers to test questions that are designed to measure mathematical problem-solving ability. Each test question measures one content cluster and may contribute to the process cluster.

Science: Cluster Scores\*

	Your Child's Points	Total Points Possible	Just Proficient Mean (JPM)**
<b>Total</b>	<b>36.0</b>	<b>39.0</b>	<b>19.3</b>
Life Science	11.0	15.0	7.1
Physical Science	7.0	12.0	5.9
Earth Science	8.0	12.0	6.3
Application	22.0	33.0	6.2

The Science test consists of four reporting clusters. The first three—Life, Physical, and Earth—are content clusters. The fourth reporting cluster, Application, refers to test questions that are designed to measure a student's ability to apply skills and knowledge. Each question addresses one content cluster and may contribute to the Application cluster.

\* About Cluster Scores

A 'cluster' is a group of related test questions on a single topic. The tables on this page show how your child performed on different clusters in Language Arts Literacy, Mathematics, and Science. For each cluster, the tables show the number of points earned by your child, the total number of points possible, and the 'Just Proficient Mean' for that cluster.

\*\* About Just Proficient Means

The Just Proficient Mean (JPM) is the average points earned in that cluster by all New Jersey students who received a scale score of 200 on the test as a whole. The tables on this page show how your child performed in each cluster relative to the total points possible and Just Proficient students.

A Note on Using this Information

Cluster scores must be interpreted with caution. Because they are based on a small number of test questions, the cluster scores might change if the students are re-tested. Students who score about the same as or below the JPM may benefit from additional instruction. When you decide whether your child needs special help in a cluster, you should also take into account your child's performance on classroom work and other activities.

## **All Sections Roster**

The All Sections Roster provides a convenient method for reviewing students' complete test results. The report displays student names in alphabetical order (last name first). Users of this report can quickly determine how a particular student performed in all content areas: Language Arts Literacy, Mathematics and Science.

Following a student's identification information, the student's Scale Score and Proficiency Level (Partially Proficient, Proficient, or Advanced Proficient) are printed for each test section. If the student's test booklet was coded void, the reason code will appear in this space.

### **Student Roster – Language Arts Literacy**

The Student Roster – Language Arts Literacy lists the names of the students (last name first) in groups by proficiency level. Thus, the first students listed on the Language Arts Literacy roster are the students with the highest Language Arts Literacy scale scores. Students are listed alphabetically when more than one student has earned the same score. Students whose test booklets were voided and students coded APA, who are exempt from taking the test, are listed alphabetically at the end of the roster.

Following a student's identification information, the student's Language Arts Literacy scale score is given. This score is based on a combination of the number of correct answers to multiple-choice items and the number of points earned for open-ended items and writing tasks. Points earned are then reported for each cluster. Each item contributes only once to the NJ ASK total score.

### **Student Roster – Mathematics**

The Student Roster – Mathematics lists the names of the students (last name first) in groups by proficiency level. Thus, the first students listed on the Mathematics roster are the students with the highest Mathematics scale scores. Students are listed alphabetically when more than one student has achieved the same score. Students whose test booklets were voided and students coded APA, who are exempt from taking the test, are listed alphabetically at the end of the roster.

Following a student's identification information, the student's total Mathematics score is given. This score is based on a combination of the number of correct answers to multiple-choice items and the number of points earned for open-ended items. Points earned are then reported for each cluster. Each item contributes only once to the NJ ASK total score.

### **Student Roster – Science**

The Student Roster – Science lists the names of the students (last name first) in groups by proficiency level. Thus, the first students listed on the Science roster are the students with the highest Science scale scores. Students are listed alphabetically when more than one student has

achieved the same score. Students whose test booklets were voided and students coded APA, who are exempt from taking the test, are listed alphabetically at the end of the roster.

Following a student's identification information, the student's total Science score is given. This score is based on a combination of the number of correct answers to multiple-choice items and the number of points earned for open-ended items. Points earned are then reported for each cluster. Each item contributes only once to the NJ ASK total score.

### **Summary of School Performance**

There are three Summary of School Performance reports, one for each content area: Language Arts Literacy, Mathematics and Science. The reports are produced at the school level and provide preliminary aggregated data for a test section. Final aggregated data is sent in Cycle II. Data are provided for total students, general education students, special education students, and limited English proficient students. Data are also presented in the report by gender, ethnicity, economic status, and migrant status.

The report provides the percent of students in each proficiency level as well as the number of total students, general education students, special education students, and limited English proficient students tested for each content area.

### **Summary of District Performance**

There are three Summary of District Performance reports, one for each content area: Language Arts Literacy, Mathematics and Science. This report provides aggregated data for the district. In addition, this report includes data for total students, general education students, special education students, and limited English proficient students. The report format is the same as the summary of school performance. Any district that chooses to test a student classified Alternate Proficiency Assessment (APA), who is exempt from taking the NJ ASK, will receive score reports for that student, and the scores will be aggregated into the school and district reports.

### **Summary of School Cluster Performance**

There are three Summary of School Cluster Performance reports, one for each content area: Language Arts Literacy, Mathematics and Science. The reports are produced at the school level and provide aggregated data for each test section. Data are provided for general education students, special education students, limited English proficient students, and Title I students. Cluster level means for each of these populations are also presented on this report.

### **Summary of District Cluster Performance**

There are three Summary of District Cluster Performance reports, one for each content area: Language Arts Literacy, Mathematics and Science. This reports provides aggregated data for the district. In addition, this report includes data for total students, general education students, special education students, limited English proficient students, and Title I students. The report format is the same as the summary of school cluster performance. Any district that chooses to

test a student classified Alternate Proficiency Assessment (APA), who is exempt from taking the NJ ASK, will receive score reports for that student, and the scores will be aggregated into the school and district reports.

## **10.2 Cycle II Reports**

The Cycle II reports include the following: School and District Reports, Special Reports, Statewide Report, DFG Reports, Statewide Charter School Report, Special Needs Report, Non-Special Needs Report, and Title I Report. Each Cycle II report is briefly described below.

### **School and District Reports**

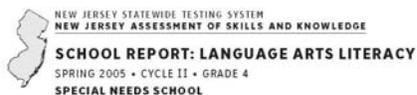
The school and district reports provide a complete analysis of student performance. Separate reports are produced for each subject tested. Each report covers two pages. The first page of each report provides information pertaining to total students, general education students, special education students, and limited English proficient students, as well as to groups classified by gender, ethnicity, economic status, and migrant status. The second page provides cluster raw score information for total students, general education students, special education students and limited English proficient students. This page also contains mean scores for the school or district, for the DFG in which the school or district is classified, and for the State.

For districts and schools identified as “Special Needs”, the Special Needs District Mean is also included. This is the mean as calculated for total students, statewide, in districts identified as “Special Needs”.

The School Report for NJ ASK4 is shown in sample format as Figure 10.2.1 (front page – Performance by Demographic Groups) and Figure 10.2.2 (back page – Cluster Score Means).

Figure 10.2.1

2005 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
School Report - Performance by Demographic Groups



County: **88 Marble County**  
District: **8888 Granite Hill District**  
School: **888 Rocky Creek School**

Performance by Demographic Groups

	Number of Students Enrolled <sup>1</sup>	Number Not Present	Number of Voids	Number of Valid Scale Scores	Scale Score Mean	% Partially Proficient	% Proficient	% Advanced Proficient
<b>Total Students</b>	46	2	4	40	207.6	30.0%	70.0%	0.0%
<b>General Education<sup>2</sup></b>	39	0	4	35	213.3	20.0%	80.0%	0.0%
<b>Special Education</b>	7	2	0	5	167.4	100.0%	0.0%	0.0%
<b>Limited English Proficient</b>	0	0	0	0	—	—	—	—
<b>Gender<sup>3</sup></b>								
Female	26	1	0	25	211.1	20.0%	80.0%	0.0%
Male	20	1	4	15	201.7	46.7%	53.3%	0.0%
<b>Ethnicity</b>								
American Indian	0	0	0	0	—	—	—	—
Asian	0	0	0	0	—	—	—	—
Black	35	2	4	29	206.1	34.5%	65.5%	0.0%
Hispanic	3	0	0	3	213.7	33.3%	66.7%	0.0%
Pacific Islander	0	0	0	0	—	—	—	—
White	8	0	0	8	210.5	12.5%	87.5%	0.0%
Other <sup>4</sup>	0	0	0	0	—	—	—	—
<b>Economic Status</b>								
Economically Disadvantaged	35	1	4	30	209.8	33.3%	66.7%	0.0%
Non-Economically Disadvantaged	11	1	0	10	200.9	20.0%	80.0%	0.0%
<b>Migrant Status</b>								
Migrant	0	0	0	0	—	—	—	—
Non-Migrant	46	2	4	40	207.6	30.0%	70.0%	0.0%

Note: Percentages may not total 100 due to rounding.

— No students in this category.

1 Enrollment is based on the number of scannable test booklets.

2 General Education excludes Special Education and Limited English Proficient students.

3 Excludes students who did not have gender coded.

4 Includes students who did not have ethnicity coded and students who had more than one ethnicity coded.

See page 2  
for Cluster Information

03/2005/MSJ2

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**Figure 10.2.2**

**2004 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
School Report - Cluster Score Means**

**SCHOOL REPORT: LANGUAGE ARTS LITERACY**  
SPRING 2005 • CYCLE II • GRADE 4  
**SPECIAL NEEDS SCHOOL**

County: **88 Marble County**  
District: **8888 Granite Hill District**  
School: **888 Rocky Creek School**

**Cluster Score Means<sup>1</sup>**

	<b>Writing</b>	Writing About Pictures	Writing About Poems	<b>Reading</b>	Working with Text	Analyzing Text	<b>TOTAL</b>
Total Points Possible	<b>20.0</b>	10.0	10.0	<b>23.0</b>	8.0	15.0	<b>43.0</b>
Just Proficient Means <sup>2</sup>	<b>10.0</b>	5.1	4.8	<b>8.0</b>	3.9	4.1	<b>18.0</b>
Total Students	<b>10.2</b>	5.0	5.2	<b>10.6</b>	5.0	5.6	<b>20.8</b>
General Education Students <sup>3</sup>	<b>10.7</b>	5.3	5.4	<b>11.6</b>	5.5	6.1	<b>22.3</b>
Special Education Students	<b>6.6</b>	2.6	4.0	<b>3.3</b>	1.8	1.5	<b>9.9</b>
Limited English Proficient Students	—	—	—	—	—	—	—
Title I Students	<b>11.5</b>	5.3	6.3	<b>11.0</b>	5.3	5.8	<b>22.5</b>
School Mean	<b>10.2</b>	5.0	5.2	<b>10.6</b>	5.0	5.6	<b>20.8</b>
District Mean	<b>10.6</b>	5.6	5.0	<b>10.6</b>	4.9	5.7	<b>21.2</b>
DFG B Mean	<b>10.9</b>	5.6	5.3	<b>10.1</b>	4.7	5.4	<b>21.0</b>
Special Needs District Mean	<b>11.1</b>	5.7	5.4	<b>10.8</b>	4.9	6.0	<b>21.9</b>
State Mean	<b>11.7</b>	6.0	5.7	<b>11.4</b>	5.2	6.3	<b>23.1</b>

Students coded both SE and LEP 0  
 Students coded APA who did not take the NJ ASK 2  
 Students coded void 4  
 — No students in this category.  
<sup>1</sup> Cluster means exclude students who took Braille and alternate forms, as well as students with voided test booklets.  
<sup>2</sup> Just Proficient Means are the statewide raw score means for students whose scale score is 200.  
<sup>3</sup> General Education excludes Special Education and Limited English Proficient students.

**School Reports**

School reports are produced when a district requests information about the performance of special groups, as identified by the district at the time of testing. By using the “special” code category at the time of the test administration, districts have the opportunity to create such reports for specific student groups containing six or more students. Student test booklets may be coded in any of the four two-column “Special Codes” grids labeled A, B, C, and D. The special code, as coded on the students’ test booklet, is printed in the report title. These reports are produced at the school level. One report for each content area per code is produced.

### **Statewide Report**

The Statewide Report provides state-level data pertaining to the performance of the total student population, as well as the general education, special education and limited English proficient students. Performance is also reported by gender, ethnicity, economic status and migrant status.

### **District Factor Group (DFG) Report**

The DFG Report summarizes the performance data for each DFG by total students, general education students, special education students and limited English proficient students as well as for groups classified by gender, ethnicity, economic status and migrant status. There is one DFG report for each District Factor Group.

### **Charter School Report**

The Charter School Report summarizes the performance data by total students, general education students, special education students and limited English proficient students as well as for groups classified by gender, ethnicity, economic status and migrant status, for all students in charter schools within the State.

### **Special Needs Report**

The Special Needs Report summarizes the statewide performance of students in special needs districts. Results are reported by total students, general education students, special education students and limited English proficient students as well as for student groups classified by gender, ethnicity, economic status and migrant status.

### **Non-Special Needs Report**

The Non-Special Needs Reports summarizes the statewide performance of student in districts not designated as special needs districts. Results are reported by total students, general education students, special education students and limited English proficient students as well as for student groups classified by gender, ethnicity, economic status and migrant status.

### **Title I Report**

Title I Reports summarizes the performance of Title I students statewide. Results are reported by total students, general education students, special education students and limited English proficient students as well as for student groups classified by gender, ethnicity, economic status and migrant status.

### **10.3 State Summary Reporting**

The State Summary consists of a group of files presented to the State on a CD. These files include an executive summary, report PDFs, and test result tables and graphs.

The executive summary contains a brief history of each test and the highlights of 2005 results based on the state Cycle II demographic report. The executive summaries for Grades 3 and 4 can be found in Appendix A. Additional statewide Cycle II results can be found in Appendix B. Two files of test results are provided based on the Cycle II demographic reports; one file includes all data with no suppression rules applied, and the other file applies the suppression rules for small cell numbers. The suppression rules are included in the executive summaries in Appendix A.

The report PDFs included on the State Summary CD are the DFG Reports, the Charter School Reports, the Special Needs Reports, the Non-Special Needs Reports and the Statewide Reports.

Longitudinal data graphs of percentages proficient and above for demographic groups from the first time each test was administered to 2005 are also provided in the State Summary.

### **10.4 Interpreting Reports**

The 2005 NJ ASK score report information is used for the purpose of district monitoring. The data are also provided to assist districts in the review of current curricular programs. With the adoption of the Core Curriculum Content Standards in May 1996, all districts were required to implement standards based instruction. NJ ASK results displayed in school-level and district-level reports can provide meaningful information for educational program reviews.

All other factors being equal, the reliability (stability) of scores decreases as the number of items used decreases. Generally speaking, reliability is lower in clusters that have smaller numbers of items. All else being equal, differences in mean cluster scores for clusters with smaller numbers of items must be greater than differences for clusters with large numbers of items before they can be considered meaningful. Decreases in reliability also increase the need for multiple measures, particularly where the number of students in the assessed group is small.

All clusters cannot be assumed to be of equal difficulty level. Cluster scores should, therefore, be compared to their respective Just Proficient Means to facilitate effective interpretation. Insofar as tests are not equated at the cluster level, cluster scores cannot be compared from year to year. Year-to-year comparisons should be limited to total test scores in the subjects tested. For each subject, it is the whole test level (only) for which scores are equated.

The NJ ASK reports provide information on clusters in content areas that need further attention. However, since some clusters were assessed with a relatively small number of items, evaluation of a student's performance should never be based solely on the results of the NJ ASK or any other single form of formal or informal assessment. Insofar as the NJ ASK is equated at the test level only, cluster performance should not be directly compared across multiple test administrations. See also, the Cycle I and II Score Interpretation Manual at:

<http://www.nj.gov/njded/assessment/es/njask2005manual.pdf>.

## **10.5 Quality Control in Reporting**

Prior to reports being distributed, both the reports themselves and the steps leading up to the production of the reports are subjected to extensive quality control procedures. These procedures include tasks to ensure the raw scores are accurately recorded in the database, and to ensure the scale scores and proficiency levels have been converted accurately. The aggregated data file is extensively reviewed to ensure the data is aggregated according to the aggregation rules defined by the State. The paper reports are then reviewed to verify all of the data is accurately represented on each report.

**APPENDIX A:**  
**Statewide Cycle II Executive Summary Results**  
**Grade 3 New Jersey Assessment of Knowledge and Skills**  
**Spring 2005**

The spring 2005 grade 3 New Jersey Assessment of Knowledge and Skills (NJ ASK) consisted of two content areas: Language Arts Literacy and Mathematics. The NJ ASK is designed to give an early indication of the progress students are making in mastering the knowledge and skills described in the Core Curriculum Content Standards. The results are to be used by schools and districts to identify strengths and weaknesses in their educational programs. It is anticipated that this process will lead to improved instruction and better alignment with the Core Curriculum Content Standards. The results may also be used, along with other indicators of student progress, to identify those students who may need instructional support in any of the content areas. This support, which could be in the form of individual or programmatic intervention, would be a means to address any identified knowledge or skill gaps.

The NJ ASK scores are reported as scale scores in each of the content areas. The scores range from 100-199 (Partially Proficient), 200-249 (Proficient), and 250-300 (Advanced Proficient). The scores of students who are included in the Partially Proficient level are considered to be below the state minimum of proficiency and those students may be most in need of instructional support.

The NJ ASK was administered in March 2005. From a total third grade student population of 102,727, valid scores were obtained in language arts literacy from 100,931 students, with 851 students not present and 945 voids (unscorable due to illness, other difficulties during testing, or an insufficient number of items answered in a given content area). Valid scores were obtained in Mathematics from 101,683 students, with 338 not present and 706 voids.

This executive summary includes two tables summarizing statewide test results for the 2005 grade 3 administration of the NJ ASK. Table A.3.1 presents results for Language Arts Literacy and Table A.3.2 presents results for Mathematics. Results are presented for the following student groups: total, general education, special education, and limited English proficient students. Data are also summarized for several demographic variables including: gender, ethnicity, and economic status. The tables include the number of students enrolled, not present, voided, and with valid scale scores. In addition, the tables present mean scale scores and the percent of students in each performance category (i.e., Partially Proficient, Proficient, and Advanced Proficient).

The tables that follow are derived from the statewide performance data of the Cycle II report. Note that the enrollment is based on the number of scannable test booklets. Also, students coded as multiple ethnicity and those whose ethnicity was unspecified are counted as Other. The percentage of students in Proficient or Advanced Proficient is calculated by subtracting the percentage of students in Partially Proficient from one hundred. The percentages may not total to one hundred due to rounding.

Following are highlights of the 2005 third grade assessment results.

#### Grade 3 Language Arts Literacy Results:

- Of the 100,931 grade 3 students with valid scale scores in Language Arts Literacy in spring 2005, 16.7% scored in Partially Proficient; 78.8% scored in Proficient and 4.4% scored in Advanced Proficient (Table A.3.1).
- **General Education** 89.2% of general education grade 3 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- **Special Education** 56.7% of special education grade 3 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- **Limited English Proficient** 50.1% of limited English proficient grade 3 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- **Gender** 86.8% of female compared to 79.9% of male grade 3 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- **Ethnicity** For performance by grade 3 ethnic groups in 2005, students scoring in Proficient or Advanced Proficient in Language Arts Literacy ranged from 92.4% of Asian American students to 68.2% of African American students. The percentage of Proficient and Advanced Proficient for all other race/ethnic groups fell between Asians and African Americans (Table A.3.1).
- **Economic Status** 67.5% of economically disadvantaged grade 3 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- The mean scale score for all grade 3 students on the Language Arts Literacy test in spring 2005 was 218.0 (Table A.3.1).

#### Grade 3 Mathematics Results:

- Of the 101,683 grade 3 students with valid scale scores in Mathematics in spring 2005, 17.5% scored in Partially Proficient; 53.7% scored in Proficient and 28.8% scored in Advanced Proficient (Table A.3.2).
- **General Education** 86.8% of general education grade 3 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).
- **Special Education** 64.4% of special education grade 3 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).

- **Limited English Proficient** 59.1% of limited English proficient grade 3 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).
- **Gender** 82.8% of female compared to 82.3% of male grade 3 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).
- **Ethnicity** For performance by grade 3 ethnic groups in 2005, students scoring in Proficient or Advanced Proficient in Mathematics ranged from 93.1% of Asian American students to 66.3% of African American students. The percentage of Proficient and Advanced Proficient for all other race/ethnic groups fell between Asians and African Americans (Table A.3.2).
- **Economic Status** 68.9% of economically disadvantaged grade 3 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).
- The mean scale score for all grade 3 students on the Mathematics test in spring 2005 was 227.9 (Table A.3.2).

Reporting Rules for Data File:

The accompanying state summary data file contains the same type of information shown in the statewide summary tables included with this executive summary. Please note that there may be small differences between the state summary data file and the Cycle II reports issued to districts. In order to safeguard student confidentiality, certain information is suppressed in the state summary file according to the following reporting rules:

- Data are not reported where the number of students with valid scale scores for a particular group is less than 11.
- Data are not reported where demographic groups are mutually exclusive (e.g., gender) and there are one or two students with a valid scale score in one of the groups (e.g., male).
- Data are not reported when it is otherwise possible to identify individual student performance.

**TABLE A.3.1**

**STATEWIDE PERFORMANCE BY DEMOGRAPHIC GROUPS SPRING 2005 -- GRADE 3**

**Language Arts Literacy**

	<b>Number of Students Enrolled</b>	<b>Number Not Present</b>	<b>Number of Voids</b>	<b>Number of Valid Scale Scores</b>	<b>Scale Score Mean</b>	<b>% Partially Proficient</b>	<b>% Proficient</b>	<b>% Advanced Proficient</b>
<b>Total Students</b>	102727	851	945	100931	218.0	16.7%	78.8%	4.4%
<b>General Education</b>	83409	163	189	83057	221.9	10.8%	84.0%	5.2%
<b>Special Education</b>	14891	73	725	14093	200.4	43.3%	55.8%	0.9%
<b>Limited English Proficient</b>	4788	627	47	4114	196.1	49.9%	49.8%	0.3%
<b>Gender</b>								
Female	50019	420	327	49272	221.4	13.2%	80.5%	6.4%
Male	52583	419	613	51551	214.7	20.1%	77.3%	2.6%
<b>Ethnicity</b>								
American Indian	99	0	3	96	215.5	17.7%	80.2%	2.1%
Asian	7467	96	39	7332	226.6	7.6%	82.5%	10.0%
Black	17803	107	264	17432	207.3	31.8%	66.9%	1.3%
Hispanic	18352	452	190	17710	207.9	29.7%	69.0%	1.3%
Pacific Islander	397	5	3	389	223.2	10.3%	83.0%	6.7%
White	57718	161	429	57128	223.2	9.3%	85.1%	5.6%
Other	891	30	17	844	217.6	17.7%	77.4%	5.0%
<b>Economic Status</b>								
Economically Disadvantaged	30872	486	390	29996	206.4	32.5%	66.5%	1.0%
Non-Economically Disadvantaged	71855	365	555	70935	222.9	10.1%	84.1%	5.9%

**TABLE A.3.2**

**STATEWIDE PERFORMANCE BY DEMOGRAPHIC GROUPS SPRING 2005 -- GRADE 3**

**Mathematics**

	<b>Number of Students Enrolled</b>	<b>Number Not Present</b>	<b>Number of Voids</b>	<b>Number of Valid Scale Scores</b>	<b>Scale Score Mean</b>	<b>% Partially Proficient</b>	<b>% Proficient</b>	<b>% Advanced Proficient</b>
<b>Total Students</b>	102727	338	706	101683	227.9	17.5%	53.7%	28.8%
<b>General Education</b>	83409	216	89	83104	231.6	13.2%	54.7%	32.1%
<b>Special Education</b>	14891	100	610	14181	212.1	35.6%	50.0%	14.4%
<b>Limited English Proficient</b>	4788	25	17	4746	208.0	40.9%	47.1%	12.1%
<b>Gender</b>								
Female	50019	140	260	49619	227.9	17.2%	54.3%	28.6%
Male	52583	196	442	51945	227.9	17.7%	53.2%	29.1%
<b>Ethnicity</b>								
American Indian	99	0	2	97	226.0	26.8%	42.3%	30.9%
Asian	7467	22	37	7408	242.2	6.9%	43.2%	49.8%
Black	17803	94	187	17522	212.7	33.7%	52.7%	13.6%
Hispanic	18352	73	140	18139	217.6	27.9%	54.5%	17.7%
Pacific Islander	397	0	3	394	234.8	10.9%	50.3%	38.8%
White	57718	133	324	57261	233.9	10.6%	55.2%	34.2%
Other	891	16	13	862	228.4	18.0%	50.1%	31.9%
<b>Economic Status</b>								
Economically Disadvantaged	30872	151	292	30429	215.2	31.1%	53.1%	15.8%
Non-Economically Disadvantaged	71855	187	414	71254	233.3	11.6%	54.0%	34.4%

## **Statewide Cycle II Executive Summary Results**

### **Grade 4 New Jersey Assessment of Knowledge and Skills Spring 2005**

The spring 2005 grade 4 New Jersey Assessment of Knowledge and Skills (NJ ASK) consisted of three content areas: Language Arts Literacy, Mathematics, and Science. The NJ ASK is designed to give an early indication of the progress students are making in mastering the knowledge and skills described in the Core Curriculum Content Standards. The results are to be used by schools and districts to identify strengths and weaknesses in their educational programs. It is anticipated that this process will lead to improved instruction and better alignment with the Core Curriculum Content Standards. The results may also be used, along with other indicators of student progress, to identify those students who may need instructional support in any of the content areas. This support, which could be in the form of individual or programmatic intervention, would be a means to address any identified knowledge or skill gaps.

The NJ ASK scores are reported as scale scores in each of the content areas. The scores range from 100-199 (Partially Proficient), 200-249 (Proficient), and 250-300 (Advanced Proficient). The scores of students who are included in the Partially Proficient level are considered to be below the state minimum of proficiency, and those students may be most in need of instructional support.

The NJ ASK was administered in March 2005. From a total fourth grade student population of 104,743, valid scores were obtained in language arts literacy from 102,894 students, with 897 students not present and 952 voids (unscorable due to illness, other difficulties during testing, or an insufficient number of items answered in a given content area). Valid scores were obtained in Mathematics from 103,636 students, with 295 not present and 812 voids. Valid scores were obtained in Science from 103,380 students, with 653 not present and 710 voids. Performance levels for the grade 4 NJ ASK Science test were established by panels of educators during standard-setting sessions held between June 6 and June 8, 2005. The Science standards were approved by the New Jersey State Board of Education on July 6, 2005.

This executive summary includes three tables summarizing statewide test results for the 2005 administration of the grade 4 NJ ASK. Table A.4.1 presents results for Language Arts Literacy, Table A.4.2 presents results for Mathematics, and Table A.4.3 presents results for Science. Results are presented for the following student groups: total, general education, special education, and limited English proficient students. Data are also summarized for several demographic variables including: gender, ethnicity, and economic status. The tables include the number of students enrolled, not present, voided, and with valid scale scores. In addition, the tables present mean scale scores and the percentage of students in each performance category (i.e., Partially Proficient, Proficient, and Advanced Proficient).

The tables that follow are derived from the statewide performance data of the Cycle II report. Note that the enrollment is based on the number of scannable test booklets. Also, students coded as multiple ethnicity and those whose ethnicity was unspecified are counted as Other. The percentage of students in Proficient or Advanced Proficient is calculated by subtracting the

percentage of students in Partially Proficient from one hundred. The percentages may not total to one hundred due to rounding.

Following are highlights of the 2005 fourth grade assessment results.

#### Grade 4 Language Arts Literacy Results:

- Of the 102,894 grade 4 students with valid scale scores in Language Arts Literacy in spring 2005, 18.4% scored in Partially Proficient; 77.2% scored in Proficient and 4.4% scored in Advanced Proficient (Table A.4.1).
- **General Education:** 89.0% of general education grade 4 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- **Special Education:** 48.7% of special education grade 4 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- **Limited English Proficient:** 46.2% of limited English proficient grade 4 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- **Gender:** 86.4% of female compared to 77.0% of male grade 4 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- **Ethnicity:** For performance by grade 4 ethnic groups in 2005, students scoring in Proficient or Advanced Proficient in Language Arts Literacy ranged from 92.1% of Asian American students to 65.5% African American students. The percentage of Advanced Proficient and Proficient for all other race/ethnic groups fell between Asians and African Americans (Table A.4.1).
- **Economic Status:** 66.6% of economically disadvantaged grade 4 students in 2005 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- The mean scale score for all grade 4 students on the Language Arts Literacy test in spring 2005, was 216.6 (Table A.4.1).

#### Grade 4 Mathematics Results:

- Of the 103,636 grade 4 students with valid scale scores in Mathematics in spring 2005, 19.8% scored in Partially Proficient; 48.5% scored in Proficient and 31.7% scored in Advanced Proficient (Table A.4.2).
- **General Education:** 86.1% of general education grade 4 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).

- **Special Education:** 55.3% of special education grade 4 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).
- **Limited English Proficient:** 51.2% of limited English proficient grade 4 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).
- **Gender:** 80.5% of female compared to 80.0% of male grade 4 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).
- **Ethnicity:** For performance by grade 4 ethnic groups in 2005, students scoring in Proficient or Advanced Proficient in Mathematics ranged from 92.3% of Asian students to 60.4% African American students. The percentage of Advanced Proficient and Proficient for all other race/ethnic groups fell between Asians and African Americans (Table A.4.2).
- **Economic Status:** 64.9% of economically disadvantaged grade 4 students in 2005 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).
- The mean scale score for all grade 4 students on the Mathematics test in spring 2005 was 228.0 (Table A.4.2).

#### Grade 4 Science Results:

- Of the 103,380 grade 4 students with valid scale scores in Science in spring 2005, 18.9% scored in Partially Proficient; 59.1% scored in Proficient and 22.0% scored in Advanced Proficient (Table A.4.3).
- **General Education:** 86.2% of general education grade 4 students in 2005 scored in Proficient or Advanced Proficient in Science (Table A.4.3).
- **Special Education:** 64.1% of special education grade 4 students in 2005 scored in Proficient or Advanced Proficient in Science (Table A.4.3).
- **Limited English Proficient:** 38.1% of limited English proficient grade 4 students in 2005 scored in Proficient or Advanced Proficient in Science (Table A.4.3).
- **Gender:** 81.1% of both female and male grade 4 students in 2005 scored in Proficient or Advanced Proficient in Science (Table A.4.3).
- **Ethnicity:** For performance by grade 4 ethnic groups in 2005, students scoring in Proficient or Advanced Proficient in Science ranged from 90.7% of White students to 62.4% African American students. The percentage of Advanced Proficient and Proficient for all other race/ethnic groups fell between Whites and African Americans (Table A.4.3).

- **Economic Status:** 62.9% of economically disadvantaged grade 4 students in 2005 scored in Proficient or Advanced Proficient in Science (Table A.4.3).
- The mean scale score for all grade 4 students on the Science test in spring 2005 was 224.2 (Table A.4.3).

#### Reporting Rules for Data File

The accompanying state summary data file contains the same type of information shown in the statewide summary tables included with this executive summary. Please note that there may be small discrepancies differences between the data file and reports issued to districts due to adjustments made to the data by districts after the reporting deadline. In order to safeguard student confidentiality, certain information is suppressed in the state summary file according to the following reporting rules:

- Data are not reported where the number of students with valid scale scores for a particular group is less than 11.
- Data are not reported where demographic groups are mutually exclusive (e.g., gender) and there are one or two students with a valid scale score in one of the groups (e.g., male).
- Data are not reported when it is otherwise possible to identify individual student performance.

**TABLE A.4.1**

**STATEWIDE PERFORMANCE BY DEMOGRAPHIC GROUPS SPRING 2005 -- GRADE 4**

**Language Arts Literacy**

	<b>Number of Students Enrolled</b>	<b>Number Not Present</b>	<b>Number of Voids</b>	<b>Number of Valid Scale Scores</b>	<b>Scale Score Mean</b>	<b>% Partially Proficient</b>	<b>% Proficient</b>	<b>% Advanced Proficient</b>
<b>Total Students</b>	104743	897	952	102894	216.6	18.4%	77.2%	4.4%
<b>General Education</b>	84464	169	185	84110	221.5	11.0%	83.7%	5.2%
<b>Special Education</b>	16545	73	728	15744	195.0	51.3%	48.0%	0.7%
<b>Limited English Proficient</b>	4047	664	46	3337	192.1	53.8%	46.0%	0.2%
<b>Gender</b>								
Female	50790	416	326	50048	221.1	13.6%	79.7%	6.8%
Male	53797	458	621	52718	212.4	23.0%	74.9%	2.1%
<b>Ethnicity</b>								
American Indian	113	3	2	108	214.7	18.5%	79.6%	1.9%
Asian	7197	102	46	7049	226.7	7.9%	82.3%	9.7%
Black	18263	88	271	17904	205.2	34.5%	64.3%	1.1%
Hispanic	18746	486	208	18052	207.5	29.2%	69.4%	1.4%
Pacific Islander	401	3	0	398	224.8	9.5%	80.7%	9.8%
White	59017	175	403	58439	221.7	11.4%	83.0%	5.6%
Other	1006	40	22	944	217.3	20.1%	74.0%	5.8%
<b>Economic Status</b>								
Economically Disadvantaged	31598	510	420	30668	205.3	33.4%	65.5%	1.1%
Non-Economically Disadvantaged	73145	387	532	72226	221.4	12.0%	82.2%	5.8%

**TABLE A.4.2**

**STATEWIDE PERFORMANCE BY DEMOGRAPHIC GROUPS SPRING 2005 -- GRADE 4**

**Mathematics**

	<b>Number of Students Enrolled</b>	<b>Number Not Present</b>	<b>Number of Voids</b>	<b>Number of Valid Scale Scores</b>	<b>Scale Score Mean</b>	<b>% Partially Proficient</b>	<b>% Proficient</b>	<b>% Advanced Proficient</b>
<b>Total Students</b>	104743	295	812	103636	228.0	19.8%	48.5%	31.7%
<b>General Education</b>	84464	175	137	84152	233.6	13.9%	50.0%	36.1%
<b>Special Education</b>	16545	87	655	15803	204.5	44.7%	42.5%	12.8%
<b>Limited English Proficient</b>	4047	33	24	3990	201.7	48.8%	38.9%	12.3%
<b>Gender</b>								
Female	50790	102	299	50389	227.9	19.5%	49.5%	31.0%
Male	53797	173	511	53113	228.2	20.0%	47.6%	32.4%
<b>Ethnicity</b>								
American Indian	113	0	1	112	227.6	20.5%	44.6%	34.8%
Asian	7197	16	38	7143	245.9	7.7%	36.3%	56.0%
Black	18263	88	219	17956	209.1	39.6%	45.7%	14.7%
Hispanic	18746	75	166	18505	216.7	30.0%	50.0%	20.0%
Pacific Islander	401	0	0	401	240.9	11.7%	41.9%	46.4%
White	59017	88	365	58564	235.2	12.0%	50.6%	37.4%
Other	1006	28	23	955	229.5	19.8%	42.1%	38.1%
<b>Economic Status</b>								
Economically Disadvantaged	31598	128	342	31128	212.7	35.1%	47.7%	17.2%
Non-Economically Disadvantaged	73145	167	470	72508	234.6	13.2%	48.9%	37.9%

**TABLE A.4.3**

**STATEWIDE PERFORMANCE BY DEMOGRAPHIC GROUPS SPRING 2005 -- GRADE 4**

**Science**

	<b>Number of Students Enrolled</b>	<b>Number Not Present</b>	<b>Number of Voids</b>	<b>Number of Valid Scale Scores</b>	<b>Scale Score Mean</b>	<b>% Partially Proficient</b>	<b>% Proficient</b>	<b>% Advanced Proficient</b>
<b>Total Students</b>	104743	653	710	103380	224.2	18.9%	59.1%	22.0%
<b>General Education</b>	84464	392	96	83976	228.5	13.8%	61.2%	25.0%
<b>Special Education</b>	16545	198	602	15745	209.0	35.9%	53.4%	10.7%
<b>Limited English Proficient</b>	4047	65	15	3967	189.3	61.9%	34.8%	3.2%
<b>Gender</b>								
Female	50790	275	256	50259	223.2	18.9%	61.4%	19.7%
Male	53797	366	449	52982	225.1	18.9%	56.9%	24.2%
<b>Ethnicity</b>								
American Indian	113	0	1	112	222.4	22.3%	57.1%	20.5%
Asian	7197	24	37	7136	235.5	10.0%	54.5%	35.5%
Black	18263	177	163	17923	207.1	37.6%	54.8%	7.5%
Hispanic	18746	157	152	18437	208.8	34.8%	56.9%	8.4%
Pacific Islander	401	0	0	401	233.5	10.5%	58.1%	31.4%
White	59017	268	325	58424	232.8	9.3%	61.7%	29.0%
Other	1006	27	32	947	225.5	18.2%	57.7%	24.2%
<b>Economic Status</b>								
Economically Disadvantaged	31598	298	275	31025	207.2	37.1%	55.6%	7.3%
Non-Economically Disadvantaged	73145	355	435	72355	231.5	11.1%	60.6%	28.3%

**APPENDIX B:  
Additional Statewide Cycle II Results**

**TABLE B.3.1**

**NEW JERSEY STATEWIDE TESTING SYSTEM SPRING 2005  
NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE BY DISTRICT  
FACTOR GROUP**

**LANGUAGE ARTS LITERACY SECTION – Grade 3**

**GENERAL EDUCATION STUDENTS<sup>b</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	13,061	72.5	27.5	71.1	1.4	209.8
B	8,203	83.7	16.3	81.4	2.3	216.1
CD	7,744	86.6	13.4	84.0	2.6	218.2
DE	10,545	91.9	8.1	87.4	4.4	222.4
FG	10,318	94.2	5.8	89.3	4.9	224.6
GH	11,687	94.7	5.3	87.4	7.3	226.6
I	16,497	96.5	3.5	87.2	9.3	229.3
J	3,642	98.2	1.8	87.9	10.3	231.6

**SPECIAL EDUCATION STUDENTS<sup>c</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,287	29.5	70.5	29.3	0.2	184.4
B	1,483	45.7	54.3	45.5	0.2	194.3
CD	1,404	46.4	53.6	46.1	0.4	194.6
DE	1,958	58.3	41.7	57.5	0.8	201.6
FG	1,840	64.7	35.3	63.9	0.9	205.0
GH	1,833	65.8	34.2	64.2	1.6	206.0
I	2,626	75.0	25.0	73.3	1.7	210.5
J	494	82.4	17.6	80.4	2.0	215.4

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.
- b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.
- c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.
- d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.
- e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.3.1 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
BY DISTRICT FACTOR GROUP**

**LANGUAGE ARTS LITERACY SECTION – Grade 3**

**LIMITED ENGLISH PROFICIENT STUDENTS <sup>d</sup>**

DFG	NUMBER TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,339	46.0	54.0	45.7	0.3	193.9
B	522	48.3	51.7	48.1	0.2	194.7
CD	324	54.3	45.7	54.0	0.3	199.0
DE	209	62.2	37.8	62.2	0.0	201.4
FG	222	51.8	48.2	51.4	0.5	197.7
GH	236	57.6	42.4	57.2	0.4	201.3
I	191	70.7	29.3	70.7	0.0	206.1
J	37	89.2	10.8	83.8	5.4	219.1

**TOTAL STUDENTS <sup>e</sup>**

DFG	NUMBER TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	17,483	63.9	36.1	62.8	1.1	204.7
B	10,181	76.5	23.5	74.6	1.9	211.9
CD	9,442	79.7	20.3	77.5	2.2	214.2
DE	12,697	86.3	13.7	82.5	3.8	218.9
FG	12,361	89.2	10.8	84.9	4.3	221.2
GH	13,735	90.3	9.7	83.9	6.5	223.5
I	19,297	93.3	6.7	85.2	8.2	226.5
J	4,173	96.3	3.7	87.0	9.3	229.6

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.
- b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.
- c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.
- d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.
- e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.3.1 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**LANGUAGE ARTS LITERACY SECTION – Grade 3**

**CHARTER SCHOOLS<sup>f</sup>**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	1,026	80.0	20.0	77.7	2.3	214.4
SPECIAL <sup>c</sup> EDUCATION STUDENTS	85	47.1	52.9	47.1	0.0	194.0
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	13	53.8	46.2	53.8	0.0	195.5
TOTAL <sup>e</sup> STUDENTS	1,124	77.2	22.8	75.1	2.1	212.6

**STATEWIDE RESULTS**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	83,057	89.2	10.8	84.0	5.2	221.9
SPECIAL <sup>c</sup> EDUCATION STUDENTS	14,093	56.7	43.3	55.8	0.9	200.4
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	4,114	50.1	49.9	49.8	0.3	196.1
TOTAL <sup>e</sup> STUDENTS	100,931	83.3	16.7	78.8	4.4	218.0

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.

b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.

c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.

d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.

e. INCLUDES ALL STUDENTS TESTED.

f. CHARTER SCHOOLS ARE NOT INCLUDED IN A DFG.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.3.2**

**NEW JERSEY STATEWIDE TESTING SYSTEM SPRING 2005  
NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE BY DISTRICT  
FACTOR GROUP**

**MATHEMATICS SECTION – Grade 3**

**GENERAL EDUCATION STUDENTS <sup>b</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	13,059	72.1	27.9	53.3	18.8	218.0
B	8,228	80.5	19.5	57.0	23.5	224.9
CD	7,748	84.5	15.5	58.4	26.1	227.8
DE	10,556	88.7	11.3	56.9	31.8	232.4
FG	10,322	90.4	9.6	57.9	32.5	233.7
GH	11,686	92.1	7.9	53.7	38.4	237.3
I	16,503	94.1	5.9	52.2	41.9	239.6
J	3,645	96.7	3.3	45.5	51.2	244.3

**SPECIAL EDUCATION STUDENTS <sup>c</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,323	43.0	57.0	36.5	6.6	196.3
B	1,489	59.0	41.0	47.1	11.8	207.8
CD	1,417	56.2	43.8	43.8	12.4	206.5
DE	1,962	68.2	31.8	54.7	13.5	213.7
FG	1,848	69.5	30.5	55.0	14.4	215.4
GH	1,846	70.5	29.5	53.6	16.9	217.1
I	2,633	77.1	22.9	56.4	20.8	221.8
J	494	83.6	16.4	58.5	25.1	227.6

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.

b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.

c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.

d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.

e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.3.2 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
 SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
 BY DISTRICT FACTOR GROUP**

**MATHEMATICS SECTION – Grade 3**

**LIMITED ENGLISH PROFICIENT STUDENTS <sup>d</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,667	57.0	43.0	44.8	12.2	206.9
B	612	54.4	45.6	43.0	11.4	204.1
CD	373	63.0	37.0	51.2	11.8	210.5
DE	242	65.7	34.3	51.2	14.5	211.4
FG	241	62.2	37.8	55.6	6.6	208.0
GH	280	62.1	37.9	52.1	10.0	209.3
I	239	76.2	23.8	59.8	16.3	220.0
J	45	97.8	2.2	64.4	33.3	239.6

**TOTAL STUDENTS <sup>e</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	17,836	66.4	33.6	50.0	16.4	213.8
B	10,299	75.9	24.1	54.8	21.1	221.3
CD	9,508	79.5	20.5	56.0	23.5	224.0
DE	12,742	85.2	14.8	56.5	28.7	229.1
FG	12,392	86.9	13.1	57.5	29.4	230.6
GH	13,791	88.6	11.4	53.7	35.0	234.1
I	19,358	91.6	8.4	52.8	38.7	236.9
J	4,184	95.2	4.8	47.2	48.0	242.3

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.
- b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.
- c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.
- d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.
- e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.3.2 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
 SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**MATHEMATICS SECTION – Grade 3**

**CHARTER SCHOOLS<sup>f</sup>**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	1,024	76.7	23.3	54.6	22.1	222.0
SPECIAL <sup>c</sup> EDUCATION STUDENTS	86	61.6	38.4	50.0	11.6	209.3
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	15	26.7	73.3	26.7	0.0	188.6
TOTAL <sup>e</sup> STUDENTS	1,125	74.8	25.2	53.9	21.0	220.6

**STATEWIDE RESULTS**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	83,104	86.8	13.2	54.7	32.1	231.6
SPECIAL <sup>c</sup> EDUCATION STUDENTS	14,181	64.4	35.6	50.0	14.4	212.1
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	4,746	59.1	40.9	47.1	12.1	208.0
TOTAL <sup>e</sup> STUDENTS	101,683	82.5	17.5	53.7	28.8	227.9

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.
- b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.
- c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.
- d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.
- e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.3.3**

**NEW JERSEY STATEWIDE TESTING SYSTEM SPRING 2005  
NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
LANGUAGE ARTS LITERACY AND MATHEMATICS  
FOR THE SPECIAL NEEDS DISTRICTS AS COMPARED TO ALL OTHER DISTRICTS – Grade 3**

LANGUAGE ARTS LITERACY SECTION		NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	15,384	73.9	26.1	72.5	1.4	210.5
	ALL OTHERS	67,673	92.7	7.3	86.6	6.1	224.5
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	2,655	32.3	67.7	32.0	0.3	185.8
	ALL OTHERS	11,438	62.3	37.7	61.3	1.0	203.8
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	SPECIAL NEEDS	2,469	47.0	53.0	46.7	0.3	194.3
	ALL OTHERS	1,645	54.7	45.3	54.4	0.3	198.9
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	20,306	65.7	34.3	64.6	1.2	205.6
	ALL OTHERS	80,625	87.7	12.3	82.4	5.3	221.1

MATHEMATICS SECTION		NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	15,400	72.3	27.7	53.3	19.0	218.3
	ALL OTHERS	67,704	90.1	9.9	55.0	35.1	234.6
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	2,695	45.6	54.4	37.8	7.7	198.2
	ALL OTHERS	11,486	68.9	31.1	52.9	16.0	215.3
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	SPECIAL NEEDS	2,854	57.1	42.9	45.1	12.0	206.9
	ALL OTHERS	1,892	62.2	37.8	50.0	12.2	209.6
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	20,736	67.1	32.9	50.3	16.7	214.4
	ALL OTHERS	80,947	86.5	13.5	54.6	31.9	231.4

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.

b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.

c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.

d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.

e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.1**

**NEW JERSEY STATEWIDE TESTING SYSTEMS SPRING 2005  
NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE BY DISTRICT  
FACTOR GROUP**

**LANGUAGE ARTS LITERACY SECTION – Grade 4**

**GENERAL EDUCATION STUDENTS<sup>b</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	13,273	75.6	24.4	74.0	1.6	211.3
B	8,315	82.3	17.7	80.0	2.3	214.8
CD	7,920	85.8	14.2	83.2	2.7	217.7
DE	11,015	90.8	9.2	86.5	4.2	221.6
FG	10,946	93.4	6.6	88.6	4.8	223.8
GH	11,437	94.3	5.7	87.8	6.5	225.5
I	16,267	96.6	3.4	86.4	10.2	229.6
J	3,567	97.1	2.9	86.4	10.7	230.9

**SPECIAL EDUCATION STUDENTS<sup>c</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,818	27.8	72.2	27.8	0.0	180.3
B	1,713	35.0	65.0	34.9	0.1	187.7
CD	1,588	40.7	59.3	40.4	0.3	190.6
DE	2,017	50.4	49.6	49.9	0.5	196.6
FG	2,026	52.6	47.4	52.3	0.3	198.5
GH	2,058	58.7	41.3	56.9	1.8	201.8
I	2,791	67.0	33.0	65.6	1.4	205.8
J	558	75.1	24.9	73.8	1.3	210.2

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.  
b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.  
c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.  
d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.  
e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.1 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
BY DISTRICT FACTOR GROUP**

**LANGUAGE ARTS LITERACY SECTION – Grade 4**

**LIMITED ENGLISH PROFICIENT STUDENTS <sup>d</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	1,902	43.4	56.6	43.1	0.3	190.3
B	420	40.5	59.5	40.5	0.0	189.1
CD	291	57.4	42.6	57.0	0.3	198.5
DE	160	53.1	46.9	53.1	0.0	195.9
FG	157	45.9	54.1	45.2	0.6	191.8
GH	183	50.8	49.2	50.8	0.0	193.8
I	160	65.6	34.4	65.6	0.0	204.3
J	28	67.9	32.1	67.9	0.0	203.5

**TOTAL STUDENTS <sup>e</sup>**

DFG	NUMBER TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	17,797	65.2	34.8	63.9	1.2	204.5
B	10,429	73.0	27.0	71.1	1.8	209.4
CD	9,765	77.8	22.2	75.5	2.2	212.8
DE	13,185	84.2	15.8	80.6	3.6	217.5
FG	13,117	86.6	13.4	82.5	4.1	219.6
GH	13,665	88.4	11.6	82.7	5.7	221.6
I	19,204	92.1	7.9	83.3	8.8	225.9
J	4,153	93.9	6.1	84.6	9.3	227.9

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.
- b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.
- c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.
- d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.
- e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.1 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**LANGUAGE ARTS LITERACY SECTION – Grade 4**

**CHARTER SCHOOLS<sup>f</sup>**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	1,044	69.5	30.5	67.2	2.3	209.5
SPECIAL <sup>c</sup> EDUCATION STUDENTS	97	28.9	71.1	28.9	0.0	187.3
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	10	30.0	70.0	30.0	0.0	194.0
TOTAL <sup>e</sup> STUDENTS	1,150	65.8	34.2	63.7	2.1	207.6

**STATEWIDE RESULTS**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	84,110	89.0	11.0	83.7	5.2	221.5
SPECIAL <sup>c</sup> EDUCATION STUDENTS	15,744	48.7	51.3	48.0	0.7	195.0
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3,337	46.2	53.8	46.0	0.2	192.1
TOTAL <sup>e</sup> STUDENTS	102,894	81.6	18.4	77.2	4.4	216.6

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.  
b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.  
c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.  
d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.  
e. INCLUDES ALL STUDENTS TESTED.  
f. CHARTER SCHOOLS ARE NOT INCLUDED IN A DFG.  
NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.2**

**NEW JERSEY STATEWIDE TESTING SYSTEM SPRING 2005  
NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE BY DISTRICT  
FACTOR GROUP**

**MATHEMATICS SECTION – Grade 4****GENERAL EDUCATION STUDENTS<sup>b</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	13,289	72.0	28.0	48.8	23.2	220.0
B	8,334	77.5	22.5	53.6	23.8	223.3
CD	7,916	84.5	15.5	54.4	30.1	229.9
DE	11,010	87.8	12.2	52.4	35.4	234.3
FG	10,947	90.6	9.4	51.7	38.9	237.3
GH	11,447	91.4	8.6	49.5	41.9	239.0
I	16,275	94.5	5.5	46.4	48.0	243.6
J	3,565	95.4	4.6	43.4	52.0	245.8

**SPECIAL EDUCATION STUDENTS<sup>c</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,823	35.8	64.2	30.3	5.5	188.1
B	1,729	44.4	55.6	36.0	8.4	196.1
CD	1,598	49.1	50.9	40.5	8.6	199.8
DE	2,019	58.6	41.4	44.5	14.1	207.2
FG	2,038	60.3	39.7	45.6	14.7	208.5
GH	2,062	63.9	36.1	45.6	18.3	212.5
I	2,796	70.2	29.8	52.8	17.3	216.1
J	559	75.0	25.0	53.3	21.6	221.3

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.  
b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.  
c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.  
d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.  
e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.2 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
 SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
 BY DISTRICT FACTOR GROUP**

**MATHEMATICS SECTION – Grade 4**

**LIMITED ENGLISH PROFICIENT STUDENTS <sup>d</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,210	50.2	49.8	38.8	11.4	200.8
B	533	41.7	58.3	32.6	9.0	194.8
CD	344	61.9	38.1	49.7	12.2	208.4
DE	208	54.3	45.7	35.6	18.8	205.5
FG	180	52.8	47.2	39.4	13.3	203.5
GH	221	51.6	48.4	42.1	9.5	200.7
I	208	64.9	35.1	41.3	23.6	214.2
J	40	77.5	22.5	45.0	32.5	224.9

**TOTAL STUDENTS <sup>e</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	18,119	64.1	35.9	44.9	19.3	213.0
B	10,576	70.3	29.7	49.8	20.6	217.5
CD	9,823	78.1	21.9	52.1	26.0	224.4
DE	13,229	82.9	17.1	51.0	31.9	229.7
FG	13,152	85.4	14.6	50.6	34.8	232.4
GH	13,717	86.7	13.3	48.8	37.9	234.4
I	19,265	90.6	9.4	47.3	43.3	239.3
J	4,163	92.5	7.5	44.7	47.8	242.3

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.
- b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.
- c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.
- d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.
- e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.2 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**MATHEMATICS SECTION – Grade 4**

**CHARTER SCHOOLS<sup>f</sup>**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	1,043	64.6	35.4	48.2	16.4	212.6
SPECIAL <sup>c</sup> EDUCATION STUDENTS	100	34.0	66.0	24.0	10.0	190.2
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	10	20.0	80.0	20.0	0.0	185.0
TOTAL <sup>e</sup> STUDENTS	1,152	61.6	38.4	45.9	15.7	210.5

**STATEWIDE RESULTS**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	84,152	86.1	13.9	50.0	36.1	233.6
SPECIAL <sup>c</sup> EDUCATION STUDENTS	15,803	55.3	44.7	42.5	12.8	204.5
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3,990	51.2	48.8	38.9	12.3	201.7
TOTAL <sup>e</sup> STUDENTS	103,636	80.2	19.8	48.5	31.7	228.0

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.

b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.

c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.

d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.

e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.3**

**NEW JERSEY STATEWIDE TESTING SYSTEM SPRING 2005  
NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE BY DISTRICT  
FACTOR GROUP**

**SCIENCE SECTION – Grade 4**

**GENERAL EDUCATION STUDENTS<sup>b</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	13,248	66.2	33.8	57.5	8.7	210.1
B	8,308	77.8	22.2	64.7	13.1	218.6
CD	7,913	84.9	15.1	65.3	19.7	225.3
DE	10,989	88.7	11.3	65.5	23.3	229.3
FG	10,929	92.3	7.7	64.0	28.3	233.5
GH	11,423	92.7	7.3	61.2	31.4	235.0
I	16,237	96.0	4.0	57.5	38.5	240.0
J	3,559	97.0	3.0	54.5	42.5	242.9

**SPECIAL EDUCATION STUDENTS<sup>c</sup>**

DFG	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,802	38.8	61.2	35.2	3.6	190.2
B	1,726	54.3	45.7	49.9	4.4	201.1
CD	1,602	60.3	39.7	52.5	7.8	205.6
DE	2,015	69.1	30.9	57.7	11.4	212.4
FG	2,031	71.6	28.4	59.9	11.8	214.1
GH	2,053	72.6	27.4	58.1	14.5	215.8
I	2,775	80.0	20.0	62.3	17.8	221.5
J	561	83.2	16.8	63.8	19.4	224.6

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.

b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.

c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.

d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.

e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.3 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
 SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
 BY DISTRICT FACTOR GROUP**

**SCIENCE SECTION – Grade 4**

**LIMITED ENGLISH PROFICIENT STUDENTS <sup>d</sup>**

DFG	NUMBER TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,193	34.7	65.3	32.6	2.1	186.4
B	534	31.3	68.7	28.8	2.4	186.2
CD	344	50.6	49.4	45.1	5.5	198.4
DE	203	39.9	60.1	34.5	5.4	191.5
FG	178	45.5	54.5	41.6	3.9	192.4
GH	221	41.6	58.4	38.0	3.6	192.7
I	208	57.2	42.8	48.6	8.7	204.3
J	40	67.5	32.5	55.0	12.5	210.5

**TOTAL STUDENTS <sup>e</sup>**

DFG	NUMBER TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	18,042	58.6	41.4	51.4	7.2	204.4
B	10,547	71.7	28.3	60.5	11.1	214.1
CD	9,824	79.8	20.2	62.5	17.3	221.2
DE	13,199	85.0	15.0	63.8	21.2	226.2
FG	13,125	88.5	11.5	63.1	25.4	230.0
GH	13,684	88.9	11.1	60.4	28.5	231.4
I	19,206	93.3	6.7	58.1	35.2	237.0
J	4,159	94.9	5.1	55.7	39.1	240.1

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.

b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.

c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.

d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.

e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.3 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM  
SPRING 2005 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**SCIENCE SECTION – Grade 4**

**CHARTER SCHOOLS<sup>f</sup>**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	1,045	69.1	30.9	56.4	12.7	213.7
SPECIAL <sup>c</sup> EDUCATION STUDENTS	101	45.5	54.5	38.6	6.9	197.6
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	10	40.0	60.0	40.0	0.0	192.2
TOTAL <sup>e</sup> STUDENTS	1,155	66.8	33.2	54.7	12.1	212.2

**STATEWIDE RESULTS**

	NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	83,976	86.2	13.8	61.2	25.0	228.5
SPECIAL <sup>c</sup> EDUCATION STUDENTS	15,745	64.1	35.9	53.4	10.7	209.0
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3,967	38.1	61.9	34.8	3.2	189.3
TOTAL <sup>e</sup> STUDENTS	103,380	81.1	18.9	59.1	22.0	224.2

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.

b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.

c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.

d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.

e. INCLUDES ALL STUDENTS TESTED.

f. CHARTER SCHOOLS ARE NOT INCLUDED IN A DFG.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.4**

**NEW JERSEY STATEWIDE TESTING SYSTEM SPRING 2005  
NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
LANGUAGE ARTS LITERACY, MATHEMATICS, AND SCIENCE  
FOR THE SPECIAL NEEDS DISTRICTS AS COMPARED TO ALL OTHER DISTRICTS –  
Grade 4**

LANGUAGE ARTS LITERACY SECTION		NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	15,569	76.3	23.7	74.6	1.7	211.6
	ALL OTHERS	68,541	91.9	8.1	85.8	6.1	223.8
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	3,277	28.0	72.0	28.0	0.0	181.0
	ALL OTHERS	12,467	54.1	45.9	53.2	0.8	198.7
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	SPECIAL NEEDS	2,023	43.9	56.1	43.6	0.3	190.7
	ALL OTHERS	1,314	49.8	50.2	49.7	0.2	194.3
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	20,671	66.0	34.0	64.7	1.3	205.1
	ALL OTHERS	82,223	85.5	14.5	80.3	5.2	219.5

MATHEMATICS SECTION		NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	15,590	72.0	28.0	48.9	23.0	219.9
	ALL OTHERS	68,562	89.3	10.7	50.3	39.0	236.7
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	3,293	36.0	64.0	30.2	5.8	188.5
	ALL OTHERS	12,510	60.3	39.7	45.7	14.6	208.8
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	SPECIAL NEEDS	2,400	50.3	49.8	38.9	11.4	200.7
	ALL OTHERS	1,590	52.5	47.5	38.9	13.6	203.2
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	21,078	64.3	35.7	45.1	19.2	213.2
	ALL OTHERS	82,558	84.3	15.7	49.4	34.9	231.9

a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.

b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.

c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.

d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.

e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.4.4 (Continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM SPRING 2005  
NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
LANGUAGE ARTS LITERACY, MATHEMATICS, AND SCIENCE  
FOR THE SPECIAL NEEDS DISTRICTS AS COMPARED TO ALL OTHER DISTRICTS – Grade 4**

SCIENCE SECTION		NUMBER <sup>a</sup> TESTED 2005	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2005	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2005
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	15,541	66.7	33.3	58.2	8.6	210.3
	ALL OTHERS	68,435	90.6	9.4	61.9	28.7	232.7
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	3,270	40.0	60.0	36.9	3.2	191.0
	ALL OTHERS	12,475	70.4	29.6	57.8	12.6	213.7
LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	SPECIAL NEEDS	2,385	34.5	65.5	32.4	2.1	186.6
	ALL OTHERS	1,582	43.5	56.5	38.5	5.0	193.4
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	20,993	59.3	40.7	52.2	7.1	204.9
	ALL OTHERS	82,387	86.7	13.3	60.8	25.8	229.1

- a. EXCLUDES STUDENTS' TEST BOOKLETS CODED VOID, NOT PRESENT AND APA EXEMPT WITH NO SCALED SCORES.
  - b. EXCLUDES SPECIAL EDUCATION AND LIMITED ENGLISH PROFICIENT STUDENTS.
  - c. INCLUDES SPECIAL EDUCATION STUDENTS ONLY.
  - d. INCLUDES LIMITED ENGLISH PROFICIENT STUDENTS ONLY.
  - e. INCLUDES ALL STUDENTS TESTED.
- NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**How to Interpret The Categories**

The following is an explanation of how to interpret the categories of students presented in the following report. Please apply these rules as you read and interpret the report.

For each content area:

**“General Education”** excludes students coded as special education OR limited English proficient on their test booklets.

**“Special Education”** includes students coded as SE on their test booklet

**“Limited English Proficient”** includes students coded as LEP on their test booklet.

**“Total”** includes all students tested who were not Void.

## DISTRICT FACTOR GROUPS

The District Factor Group (DFG) is an indicator of the socioeconomic status of citizens in each district and has been useful for the comparative reporting of test results from New Jersey's statewide testing programs. The measure was first developed in 1974 using demographic variables from the 1970 United States Census. Revisions were made in 1984 and 1992 to take into account new data from the 1980 and 1990 United States Census. The DFG designations were updated again in 2004, using the following demographic variables from the 2000 United States Census.

- A. Percentage of adult residents who failed to complete high school
- B. Percentage of adult residents who attended college
- C. Occupational status of adult household members:
  - 1 = laborers
  - 2 = service workers (except private and protective)
  - 3 = farm workers
  - 4 = operatives and kindred workers
  - 5 = protective service workers
  - 6 = sales workers
  - 7 = clerical and kindred workers
  - 8 = craftsmen, foremen, and kindred workers
  - 9 = quasi-professionals
  - 10 = managers, officials, and proprietors
  - 11 = old and new professionals
- D. Population Density: persons per square mile
- E. Income: median family income
- F. Unemployment: percentage of those in the work force who received some unemployment compensation
- G. Poverty: percentage of residents below the poverty level

The variables described above were combined using a statistical technique called principal components analysis, which resulted in a single measure of socioeconomic status for each district. Districts were then ranked according to their score on this measure and divided into eight groups based on the score interval in which their scores were located. Eight DFGs have been created based on the 1990 United States Census data. They range from A (lowest socioeconomic districts) to J (highest socioeconomic districts) and are labeled as follows: A, B, CD, DE, FG, GH, I, J. Updating the DFGs has not changed any district's designation as Special Needs or not Special Needs.

Whereas the DFGs based on the 1970 and 1980 United States Census resulted in 10 groups containing approximately equal numbers of districts, the DFGs based on the 1990 and 2000 United States Census resulted in eight groups of different sizes depending on their score. The number of districts\* in each DFG is now as follows:

DFG	Number of Districts
A	39
B	67
CD	67
DE	83
FG	89
GH	76
I	103
J	25

In the most recent DFG designations, 15 non-functioning or cooperative school districts are no longer included in a DFG. Two other districts, Deal and Lakewood, no longer carry a DFG designation because more than 50% of their students attend private schools.

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\* Includes all New Jersey's public school districts (regardless of school configuration or grade levels served).

**APPENDIX C:  
Raw to Scale Score Conversions**

**Raw Score – Scale Score Conversions with Theta, S.E. and Cumulative Frequencies**

**TABLE C.3.1 Conversion 2005 NJ ASK Language Arts Literacy – Grade 3**

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
0.0	128	-2.8287	1.389	8	0.0
0.5	130	-2.1721	0.714	8	0.0
1.0	132	-1.8329	0.484	35	0.0
1.5	134	-1.6467	0.387	39	0.0
2.0	136	-1.5176	0.334	113	0.1
2.5	138	-1.4174	0.300	118	0.1
3.0	140	-1.3341	0.277	217	0.2
3.5	142	-1.2617	0.261	238	0.2
4.0	144	-1.1968	0.248	367	0.4
4.5	147	-1.1375	0.238	411	0.4
5.0	149	-1.0823	0.231	580	0.6
5.5	152	-1.0305	0.224	659	0.7
6.0	154	-0.9812	0.219	889	0.9
6.5	157	-0.9341	0.214	1,028	1.0
7.0	159	-0.8887	0.211	1,331	1.3
7.5	162	-0.8447	0.208	1,563	1.5
8.0	164	-0.8017	0.206	1,938	1.9
8.5	166	-0.7595	0.204	2,251	2.2
9.0	169	-0.7178	0.203	2,757	2.7
9.5	171	-0.6764	0.203	3,166	3.1
10.0	173	-0.6350	0.203	3,817	3.8
10.5	175	-0.5936	0.203	4,375	4.3
11.0	177	-0.5521	0.204	5,140	5.1
11.5	179	-0.5102	0.205	5,765	5.7
12.0	182	-0.4679	0.206	6,703	6.6
12.5	184	-0.4251	0.207	7,554	7.5
13.0	186	-0.3818	0.208	8,646	8.6
13.5	188	-0.3379	0.210	9,762	9.7
14.0	190	-0.2935	0.211	11,074	11.0
14.5	192	-0.2484	0.213	12,425	12.3
15.0	194	-0.2027	0.214	14,011	13.9
15.5	195	-0.1564	0.216	15,617	15.5
16.0	197	-0.1093	0.217	16,871	16.7
16.5	200	-0.0615	0.219	19,060	18.9
17.0	201	-0.0129	0.221	21,697	21.5
17.5	203	0.0364	0.223	24,085	23.9
18.0	205	0.0866	0.224	26,878	26.6
18.5	207	0.1376	0.226	29,588	29.3
19.0	209	0.1895	0.228	32,738	32.4
19.5	212	0.2423	0.230	35,877	35.5
20.0	214	0.2960	0.232	39,496	39.1

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
20.5	216	0.3507	0.235	42,954	42.6
21.0	218	0.4065	0.237	46,919	46.5
21.5	220	0.4635	0.239	50,669	50.2
22.0	222	0.5216	0.242	54,920	54.4
22.5	224	0.5810	0.245	58,942	58.4
23.0	226	0.6419	0.248	63,305	62.7
23.5	228	0.7045	0.251	67,262	66.6
24.0	230	0.7690	0.255	71,546	70.9
24.5	232	0.8355	0.260	75,319	74.6
25.0	234	0.9043	0.264	79,238	78.5
25.5	236	0.9757	0.269	82,510	81.7
26.0	238	1.0499	0.275	85,932	85.1
26.5	240	1.1270	0.280	88,650	87.8
27.0	242	1.2070	0.285	91,257	90.4
27.5	244	1.2896	0.289	93,363	92.5
28.0	246	1.3741	0.292	95,102	94.2
28.5	248	1.4601	0.293	96,446	95.6
29.0	250	1.5464	0.293	97,653	96.8
29.5	252	1.6323	0.292	98,562	97.7
30.0	254	1.7170	0.289	99,261	98.3
30.5	256	1.8002	0.287	99,761	98.8
31.0	259	1.8818	0.284	100,119	99.2
31.5	261	1.9619	0.281	100,353	99.4
32.0	262	2.0409	0.280	100,543	99.6
32.5	264	2.1194	0.279	100,664	99.7
33.0	266	2.1978	0.280	100,746	99.8
33.5	268	2.2770	0.282	100,809	99.9
34.0	270	2.3577	0.286	100,854	99.9
34.5	272	2.4409	0.291	100,884	100.0
35.0	273	2.5277	0.298	100,904	100.0
35.5	275	2.6196	0.308	100,920	100.0
36.0	277	2.7184	0.321	100,923	100.0
36.5	278	2.8267	0.338	100,929	100.0
37.0	280	2.9486	0.361	100,931	100.0
37.5	282	3.0903	0.393	100,931	100.0
38.0	283	3.2621	0.438	100,931	100.0
38.5	284	3.4833	0.506	100,931	100.0
39.0	286	3.7952	0.619	100,931	100.0
39.5	287	4.3250	0.871	100,931	100.0
40.0	289	5.2511	1.623	100,931	100.0

**TABLE C.3.2 Conversion 2005 NJ ASK Mathematics – Grade 3**

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
0.0	119	-3.6309	1.774	0	0.0
0.5	122	-2.5423	0.924	4	0.0
1.0	125	-1.9731	0.627	13	0.0
1.5	127	-1.6602	0.502	21	0.0
2.0	130	-1.4451	0.430	30	0.0
2.5	132	-1.2805	0.383	47	0.0
3.0	135	-1.1465	0.349	71	0.1
3.5	138	-1.0331	0.324	107	0.1
4.0	140	-0.9342	0.305	177	0.2
4.5	143	-0.8461	0.289	256	0.3
5.0	145	-0.7663	0.275	355	0.3
5.5	148	-0.6933	0.264	494	0.5
6.0	151	-0.6256	0.255	691	0.7
6.5	153	-0.5625	0.247	977	1.0
7.0	156	-0.5030	0.240	1,305	1.3
7.5	159	-0.4468	0.234	1,715	1.7
8.0	161	-0.3933	0.228	2,139	2.1
8.5	164	-0.3422	0.223	2,663	2.6
9.0	166	-0.2932	0.219	3,221	3.2
9.5	169	-0.2460	0.215	3,895	3.8
10.0	171	-0.2005	0.211	4,626	4.5
10.5	174	-0.1564	0.208	5,500	5.4
11.0	177	-0.1137	0.205	6,416	6.3
11.5	179	-0.0721	0.202	7,374	7.3
12.0	182	-0.0315	0.200	8,414	8.3
12.5	184	0.0082	0.198	9,550	9.4
13.0	186	0.0469	0.195	10,833	10.7
13.5	189	0.0849	0.194	12,123	11.9
14.0	191	0.1223	0.192	13,483	13.3
14.5	194	0.1591	0.190	14,914	14.7
15.0	196	0.1952	0.189	16,431	16.2
15.5	198	0.2309	0.188	17,759	17.5
16.0	200	0.2663	0.187	19,738	19.4
16.5	203	0.3012	0.186	21,541	21.2

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
17.0	205	0.3359	0.185	23,411	23.0
17.5	207	0.3704	0.185	25,311	24.9
18.0	210	0.4047	0.185	27,306	26.9
18.5	212	0.4389	0.184	29,384	28.9
19.0	214	0.4731	0.185	31,562	31.0
19.5	216	0.5074	0.185	33,726	33.2
20.0	219	0.5417	0.185	36,161	35.6
20.5	221	0.5764	0.186	38,553	37.9
21.0	223	0.6113	0.187	41,029	40.3
21.5	225	0.6466	0.188	43,524	42.8
22.0	227	0.6824	0.190	46,245	45.5
22.5	229	0.7189	0.192	48,877	48.1
23.0	232	0.7562	0.194	51,679	50.8
23.5	234	0.7944	0.196	54,418	53.5
24.0	236	0.8337	0.199	57,369	56.4
24.5	238	0.8743	0.203	60,203	59.2
25.0	240	0.9165	0.207	63,412	62.4
25.5	242	0.9606	0.212	66,184	65.1
26.0	245	1.0068	0.217	69,615	68.5
26.5	247	1.0556	0.224	72,381	71.2
27.0	250	1.1076	0.231	76,020	74.8
27.5	252	1.1631	0.240	78,730	77.4
28.0	254	1.2233	0.250	82,271	80.9
28.5	256	1.2888	0.262	84,723	83.3
29.0	258	1.3614	0.276	88,308	86.8
29.5	261	1.4429	0.294	90,320	88.8
30.0	263	1.5362	0.317	93,640	92.1
30.5	265	1.6459	0.346	95,066	93.5
31.0	267	1.7796	0.387	97,765	96.1
31.5	270	1.9522	0.447	98,605	97.0
32.0	272	2.1977	0.552	100,522	98.9
32.5	274	2.6304	0.800	100,855	99.2
33.0	276	3.4509	1.559	101,683	100.0

**TABLE C.4.1 Conversion 2005 NJ ASK Language Arts Literacy – Grade 4**

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
0.0	106	-2.8626	1.496	22	0.0
0.5	110	-2.1219	0.745	25	0.0
1.0	112	-1.7619	0.491	76	0.1
1.5	116	-1.5735	0.386	87	0.1
2.0	119	-1.4467	0.329	186	0.2
2.5	122	-1.3501	0.294	204	0.2
3.0	126	-1.2708	0.270	310	0.3
3.5	129	-1.2024	0.253	335	0.3
4.0	133	-1.1414	0.240	465	0.5
4.5	137	-1.0857	0.231	525	0.5
5.0	141	-1.0342	0.223	729	0.7
5.5	144	-0.9859	0.216	830	0.8
6.0	148	-0.9403	0.210	1,051	1.0
6.5	151	-0.8969	0.206	1,200	1.2
7.0	154	-0.8553	0.201	1,469	1.4
7.5	157	-0.8153	0.198	1,688	1.6
8.0	159	-0.7766	0.195	2,059	2.0
8.5	162	-0.7387	0.193	2,334	2.3
9.0	164	-0.7017	0.191	2,766	2.7
9.5	166	-0.6650	0.191	3,159	3.1
10.0	168	-0.6286	0.190	3,730	3.6
10.5	171	-0.5922	0.191	4,219	4.1
11.0	173	-0.5556	0.191	4,828	4.7
11.5	175	-0.5186	0.192	5,430	5.3
12.0	177	-0.4811	0.194	6,242	6.1
12.5	179	-0.4431	0.195	7,082	6.9
13.0	181	-0.4045	0.197	8,091	7.9
13.5	183	-0.3652	0.198	9,093	8.8
14.0	185	-0.3254	0.200	10,324	10.0
14.5	187	-0.2850	0.201	11,518	11.2
15.0	189	-0.2441	0.202	12,960	12.6
15.5	191	-0.2027	0.203	14,407	14.0
16.0	193	-0.1611	0.204	16,093	15.6
16.5	195	-0.1191	0.205	17,823	17.3
17.0	197	-0.0768	0.205	18,928	18.4
17.5	200	-0.0343	0.206	21,130	20.5
18.0	201	0.0084	0.207	23,693	23.0
18.5	203	0.0513	0.207	26,122	25.4
19.0	205	0.0946	0.208	28,686	27.9
19.5	207	0.1382	0.209	31,288	30.4
20.0	209	0.1823	0.210	34,216	33.3
20.5	211	0.2267	0.211	37,081	36.0
21.0	213	0.2718	0.213	40,286	39.2
21.5	215	0.3176	0.214	43,614	42.4

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
22.0	217	0.3641	0.216	46,962	45.6
22.5	218	0.4115	0.218	50,476	49.1
23.0	220	0.4600	0.221	54,150	52.6
23.5	222	0.5096	0.224	57,987	56.4
24.0	224	0.5607	0.227	61,892	60.2
24.5	226	0.6131	0.230	65,704	63.9
25.0	228	0.6673	0.234	69,566	67.6
25.5	230	0.7233	0.238	73,234	71.2
26.0	231	0.7811	0.242	76,915	74.8
26.5	233	0.8411	0.247	80,321	78.1
27.0	235	0.9032	0.251	83,610	81.3
27.5	237	0.9673	0.255	86,627	84.2
28.0	239	1.0334	0.258	89,368	86.9
28.5	241	1.1014	0.261	91,807	89.2
29.0	243	1.1706	0.264	93,940	91.3
29.5	245	1.2407	0.265	95,680	93.0
30.0	246	1.3113	0.265	97,143	94.4
30.5	248	1.3818	0.265	98,373	95.6
31.0	250	1.4518	0.263	99,369	96.6
31.5	252	1.5210	0.262	100,184	97.4
32.0	254	1.5892	0.260	100,847	98.0
32.5	255	1.6564	0.258	101,324	98.5
33.0	257	1.7228	0.256	101,729	98.9
33.5	258	1.7885	0.255	102,017	99.1
34.0	260	1.8537	0.255	102,267	99.4
34.5	262	1.9189	0.255	102,430	99.5
35.0	263	1.9844	0.256	102,562	99.7
35.5	265	2.0507	0.258	102,650	99.8
36.0	266	2.1182	0.261	102,717	99.8
36.5	268	2.1875	0.265	102,762	99.9
37.0	270	2.2593	0.270	102,808	99.9
37.5	271	2.3342	0.277	102,843	100.0
38.0	273	2.4133	0.285	102,860	100.0
38.5	275	2.4977	0.295	102,873	100.0
39.0	277	2.5890	0.308	102,880	100.0
39.5	278	2.6892	0.325	102,882	100.0
40.0	280	2.8015	0.346	102,887	100.0
40.5	282	2.9308	0.374	102,888	100.0
41.0	284	3.0851	0.413	102,891	100.0
41.5	286	3.2804	0.474	102,892	100.0
42.0	288	3.5530	0.580	102,894	100.0
42.5	290	4.0264	0.835	102,894	100.0
43.0	294	4.9171	1.621	102,894	100.0

**TABLE C.4.2 Conversion 2005 NJ ASK Mathematics – Grade 4**

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
0.0	104	-3.8174	1.816	0	0.0
0.5	108	-2.6418	0.976	0	0.0
1.0	111	-1.9981	0.670	5	0.0
1.5	115	-1.6424	0.534	8	0.0
2.0	118	-1.4008	0.454	17	0.0
2.5	122	-1.2192	0.400	30	0.0
3.0	125	-1.0741	0.362	63	0.1
3.5	129	-0.9532	0.333	108	0.1
4.0	132	-0.8495	0.311	178	0.2
4.5	135	-0.7584	0.292	275	0.3
5.0	138	-0.6770	0.277	399	0.4
5.5	140	-0.6035	0.265	580	0.6
6.0	143	-0.5361	0.254	803	0.8
6.5	146	-0.4739	0.244	1,049	1.0
7.0	148	-0.4159	0.236	1,341	1.3
7.5	151	-0.3617	0.229	1,676	1.6
8.0	153	-0.3106	0.222	2,090	2.0
8.5	155	-0.2622	0.217	2,505	2.4
9.0	158	-0.2163	0.211	2,982	2.9
9.5	160	-0.1725	0.206	3,473	3.4
10.0	162	-0.1307	0.202	4,041	3.9
10.5	164	-0.0905	0.198	4,639	4.5
11.0	166	-0.0519	0.194	5,224	5.0
11.5	168	-0.0147	0.191	5,869	5.7
12.0	170	0.0212	0.187	6,554	6.3
12.5	172	0.0559	0.184	7,196	6.9
13.0	174	0.0895	0.182	7,937	7.7
13.5	176	0.1221	0.179	8,710	8.4
14.0	178	0.1539	0.176	9,532	9.2
14.5	180	0.1847	0.174	10,376	10.0
15.0	182	0.2148	0.172	11,240	10.8
15.5	184	0.2441	0.170	12,158	11.7
16.0	185	0.2728	0.168	13,132	12.7
16.5	187	0.3009	0.166	14,172	13.7
17.0	189	0.3284	0.165	15,196	14.7
17.5	191	0.3554	0.163	16,305	15.7
18.0	192	0.3819	0.162	17,390	16.8
18.5	194	0.4080	0.161	18,500	17.9
19.0	196	0.4337	0.159	19,710	19.0
19.5	198	0.4592	0.158	20,504	19.8
20.0	200	0.4843	0.158	21,986	21.2
20.5	201	0.5092	0.157	23,447	22.6
21.0	203	0.5338	0.156	24,909	24.0
21.5	205	0.5584	0.156	26,419	25.5

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
22.0	207	0.5828	0.156	27,988	27.0
22.5	208	0.6071	0.155	29,476	28.4
23.0	210	0.6313	0.155	31,147	30.1
23.5	212	0.6556	0.155	32,828	31.7
24.0	214	0.6799	0.156	34,590	33.4
24.5	216	0.7044	0.156	36,307	35.0
25.0	218	0.7289	0.156	38,122	36.8
25.5	219	0.7536	0.157	39,958	38.6
26.0	221	0.7785	0.158	41,953	40.5
26.5	223	0.8037	0.159	43,920	42.4
27.0	225	0.8292	0.160	45,982	44.4
27.5	227	0.8550	0.161	47,940	46.3
28.0	229	0.8813	0.162	50,086	48.3
28.5	231	0.9081	0.164	52,250	50.4
29.0	234	0.9354	0.166	54,545	52.6
29.5	236	0.9634	0.168	56,720	54.7
30.0	238	0.9919	0.170	59,067	57.0
30.5	240	1.0213	0.172	61,262	59.1
31.0	242	1.0515	0.175	63,770	61.5
31.5	244	1.0827	0.178	65,992	63.7
32.0	246	1.1149	0.181	68,502	66.1
32.5	248	1.1483	0.184	70,789	68.3
33.0	250	1.1830	0.188	73,365	70.8
33.5	253	1.2192	0.192	75,587	72.9
34.0	255	1.2570	0.196	78,271	75.5
34.5	257	1.2967	0.201	80,363	77.5
35.0	259	1.3385	0.207	83,007	80.1
35.5	261	1.3827	0.213	84,941	82.0
36.0	263	1.4297	0.220	87,541	84.5
36.5	265	1.4797	0.227	89,319	86.2
37.0	266	1.5335	0.236	91,733	88.5
37.5	268	1.5916	0.246	93,243	90.0
38.0	270	1.6550	0.257	95,458	92.1
38.5	271	1.7245	0.270	96,626	93.2
39.0	273	1.8018	0.286	98,593	95.1
39.5	275	1.8889	0.304	99,477	96.0
40.0	276	1.9886	0.327	101,046	97.5
40.5	277	2.1058	0.357	101,574	98.0
41.0	278	2.2476	0.397	102,605	99.0
41.5	280	2.4285	0.456	102,855	99.2
42.0	281	2.6807	0.556	103,412	99.8
42.5	283	3.1109	0.790	103,467	99.8
43.0	285	3.8924	1.508	103,636	100.0

**TABLE C.4.3 Conversion 2005 NJ ASK Science – Grade 4**

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
0.0	114	-2.9810	1.346	2	0.0
0.5	116	-2.3335	0.731	2	0.0
1.0	118	-1.9605	0.521	5	0.0
1.5	120	-1.7383	0.429	5	0.0
2.0	123	-1.5773	0.376	17	0.0
2.5	125	-1.4496	0.340	17	0.0
3.0	127	-1.3429	0.314	42	0.0
3.5	130	-1.2508	0.293	45	0.0
4.0	132	-1.1692	0.277	106	0.1
4.5	134	-1.0958	0.264	114	0.1
5.0	136	-1.0287	0.253	235	0.2
5.5	139	-0.9668	0.244	254	0.2
6.0	141	-0.9092	0.236	458	0.4
6.5	143	-0.8553	0.228	491	0.5
7.0	145	-0.8044	0.222	813	0.8
7.5	148	-0.7561	0.216	904	0.9
8.0	150	-0.7101	0.211	1,294	1.3
8.5	152	-0.6662	0.207	1,418	1.4
9.0	155	-0.6241	0.203	1,901	1.8
9.5	157	-0.5836	0.199	2,109	2.0
10.0	159	-0.5445	0.196	2,790	2.7
10.5	161	-0.5067	0.192	3,060	3.0
11.0	164	-0.4701	0.189	3,732	3.6
11.5	166	-0.4345	0.187	4,106	4.0
12.0	168	-0.3999	0.184	4,941	4.8
12.5	170	-0.3662	0.182	5,446	5.3
13.0	173	-0.3332	0.180	6,434	6.2
13.5	175	-0.3010	0.178	7,035	6.8
14.0	177	-0.2696	0.176	8,203	7.9
14.5	180	-0.2387	0.175	8,903	8.6
15.0	182	-0.2083	0.173	10,248	9.9
15.5	184	-0.1784	0.172	11,162	10.8
16.0	186	-0.1491	0.170	12,642	12.2
16.5	189	-0.1201	0.169	13,774	13.3
17.0	191	-0.0915	0.168	15,423	14.9
17.5	193	-0.0632	0.167	16,764	16.2
18.0	195	-0.0352	0.167	18,749	18.1
18.5	198	-0.0074	0.166	19,530	18.9
19.0	200	0.0202	0.165	22,279	21.6
19.5	202	0.0477	0.165	24,071	23.3

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students	Cumulative Percent of Students
20.0	205	0.0750	0.165	26,649	25.8
20.5	207	0.1024	0.165	28,544	27.6
21.0	209	0.1297	0.165	31,322	30.3
21.5	211	0.1571	0.165	33,413	32.3
22.0	214	0.1846	0.166	36,413	35.2
22.5	216	0.2122	0.166	38,675	37.4
23.0	218	0.2402	0.167	41,858	40.5
23.5	220	0.2683	0.168	44,201	42.8
24.0	223	0.2968	0.169	47,570	46.0
24.5	225	0.3257	0.170	50,090	48.5
25.0	227	0.3552	0.172	53,616	51.9
25.5	230	0.3852	0.174	56,304	54.5
26.0	232	0.4158	0.176	60,039	58.1
26.5	234	0.4471	0.178	62,676	60.6
27.0	236	0.4793	0.180	66,243	64.1
27.5	239	0.5124	0.183	68,854	66.6
28.0	241	0.5465	0.186	72,357	70.0
28.5	243	0.5818	0.189	74,891	72.4
29.0	245	0.6184	0.193	78,263	75.7
29.5	248	0.6564	0.196	80,623	78.0
30.0	250	0.6960	0.201	83,724	81.0
30.5	252	0.7374	0.206	85,835	83.0
31.0	255	0.7809	0.211	88,743	85.8
31.5	257	0.8267	0.217	90,632	87.7
32.0	259	0.8752	0.223	93,181	90.1
32.5	261	0.9268	0.230	94,670	91.6
33.0	264	0.9818	0.238	96,724	93.6
33.5	266	1.0411	0.248	97,865	94.7
34.0	268	1.1053	0.259	99,465	96.2
34.5	270	1.1756	0.271	100,244	97.0
35.0	273	1.2533	0.286	101,374	98.1
35.5	275	1.3405	0.304	101,913	98.6
36.0	277	1.4402	0.327	102,551	99.2
36.5	280	1.5566	0.356	102,840	99.5
37.0	282	1.6973	0.395	103,180	99.8
37.5	284	1.8762	0.453	103,271	99.9
38.0	286	2.1241	0.550	103,356	100.0
38.5	289	2.5411	0.774	103,373	100.0
39.0	291	3.2720	1.441	103,380	100.0

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