

Grades 3 and 4  
New Jersey Assessment of Skills  
and Knowledge

**TECHNICAL REPORT**

**March 2006**

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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 2006. 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 2006 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 help 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 from March 20 through March 24, 2006. The 2006 Language Arts Literacy and Mathematics tests were administered to 102,583 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 2006 Language Arts Literacy, Mathematics, and Science tests were administered to 102,725 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 2006 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 100,680 grade 3 students with valid scale scores in Language Arts Literacy in spring 2006, 17.5% scored in Partially Proficient; 79.0% scored in Proficient and 3.4% scored in Advanced Proficient (Table 1.2.1).
- Of the 101,602 grade 3 students with valid scale scores in Mathematics in spring 2006, 13.1% scored in Partially Proficient; 55.7% scored in Proficient and 31.1% scored in Advanced Proficient (Table 1.2.1).
- Of the 100,880 grade 4 students with valid scale scores in Language Arts Literacy in spring 2006, 20.0% scored in Partially Proficient; 76.2% scored in Proficient and 3.8% scored in Advanced Proficient (Table 1.2.2).
- Of the 101,659 grade 4 students with valid scale scores in Mathematics in spring 2006, 17.6% scored in Partially Proficient; 41.2% scored in Proficient and 41.1% scored in Advanced Proficient (Table 1.2.2).
- Of the 101,636 grade 4 students with valid scale scores in Science in spring 2006, 17.7% scored in Partially Proficient; 54.5% scored in Proficient and 27.8% scored in Advanced Proficient (Table 1.2.2).

**TABLE 1.2.1**

**2006 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 2006	100,680	17,658	17.5%	79,563	79.0%	3,459	3.4%	218.3
MATHEMATICS 2006	101,602	13,356	13.1%	56,631	55.7%	31,615	31.1%	231.6

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

**TABLE 1.2.2**

**2006 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 2006	100,880	20,157	20.0%	76,841	76.2%	3,882	3.8%	215.6
MATHEMATICS 2006	101,659	17,929	17.6%	41,934	41.2%	41,796	41.1%	232.8
SCIENCE 2006	101,636	18,028	17.7%	55,343	54.5%	28,265	27.8%	227.9

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 items 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 summarizes the total points possible for each of the content areas of the operational NJ ASK administered in March 2006 for grades 3 and 4.

**TABLE 2.1.1****2006 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	11 points	5 points
Analyzing Text	9 points	18 points
<b>Mathematics</b>	<b>Grade 3</b>	<b>Grade 4</b>
<b>Total</b>	<b>33 points</b>	<b>43 points</b>
Number Sense & Numerical Operations	9 points	13 points
Geometry & Measurement	8 points	10 points
Patterns & Algebra	8 points	10 points
Data Analysis, Probability & Discrete Math	8 points	10 points
-----	-----	-----
Problem Solving	16 points	28 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		31 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 2006 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**

**2006 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**

**2006 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 shows the number of field-test items presented during the March 2006 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**

**2006 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>	60	57	14	14	10	10
	<b>Mathematics</b>	140	130	19	16	--	--
		Presented	Accepted	Presented	Accepted	Presented	Accepted
<b>Grade 4</b>	<b>Language Arts</b>	56	56	14	14	10	10
	<b>Mathematics</b>	120	109	32	25	--	--
	<b>Science</b>	79	60	18	18	--	--

**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 2006 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 2006, the Braille versions and the standard versions were the same for the Mathematics tests

in both Grade 3 and Grade 4. The Braille versions differed from the standard versions of the tests for Grade 3 and Grade 4 Language Arts Literacy and Grade 4 Science. Some items were omitted from those forms. 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 currently 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. For each grade and subject, standard

setting workshops were conducted shortly after the tests were administered for the first time operationally (i.e., in the base year). There were no standard setting workshops held after the March 2006 administration.

In all cases, the cut scores are used to distinguish performance among three levels: Partially Proficient, Proficient, and Advanced Proficient. Once raw score cuts were established on the base forms, item response theory (IRT) equating procedures have been used to maintain the cuts over time on new forms. See Part 7, Scaling and Equating, for more information about equating procedures. Following is a brief description of the standard setting procedures used by ETS to set standards on the NJ ASK tests.

### **5.1 Grade 4 Language Arts Literacy and Mathematics**

The NJ ASK was introduced in 2003. Grade 4 NJ ASK Language Arts Literacy and Mathematics were intended to be a continuation of the grade 4 Elementary School Proficiency Assessment (ESPA). The base year for grade 4 Mathematics was 1999 and for Language Arts Literacy was 2001. To maintain program consistency, the content, number of items, and number of score points were all consistent with the previous ESPA forms. Cut scores were set in the base years for each subject, when the program was called the ESPA. The reader should contact the NJDOE for more information about the standard setting procedures used to set cut scores on the grade 4 Language Arts Literacy and Mathematics forms.

### **5.2 Grade 3 Language Arts Literacy and Mathematics**

After the March 2004 administration, standard setting workshops were held in June for the grade 3 Language Arts Literacy (LAL) and Mathematics tests. ETS conducted the standard setting workshops in two phases. The following text comes from the executive summary of the standard setting report. For more information about the standard setting workshop, the full report is available from the NJDOE.

#### **Overview**

The grade 3 Language Arts Literacy and Mathematics standard setting was conducted in two phases. Phase 1 involved approximately 20 educators from across the state of New Jersey meeting for 2 ½ to 4 days and using a research-based standard setting method to recommend cut scores. Phase 2 immediately followed Phase 1 and involved 3 teachers from each of the two Phase 1 panels as well as 3 additional policymakers from the state. They 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. They then provided their recommendations for cut scores, which were presented to the New Jersey State Board of Education for review and adoption. Following is a brief summary of the procedure and the results.

## Summary of the Process

In May 2004, two groups of educators were invited to participate in a one-day workshop to develop the performance level descriptors for Proficient and Advanced Proficient in LAL and mathematics. These descriptors were used throughout the standard setting process.

Two different methods were used to set standards because the two subject areas had different test specifications. Because the LAL test was comprised primarily of open-ended items and writing prompts, a holistic method was chosen to determine cut scores. The Body of Work method required panelists to review entire student booklets, including responses to both open-ended and multiple-choice items, and determine whether the skills and knowledge demonstrated in the booklet best match the performance level descriptors for Partially Proficient, Proficient, or Advanced. The panelists were not told what the scores were for each booklet, but the standard setting facilitators used the information on judges ratings in combination with the scores for each booklet to calculate a cut score for each level. Body of Work was conducted over two rounds. In the first round, rangefinding, panelists were given 30 booklets with scores ranging from 4 to 38 points out of 40. Based on the ratings of these 30 booklets, a second set of booklets were pulled for round 2, the pinpointing round. After the rangefinding round, the preliminary cut scores were calculated to be 20 points for Proficient and 30 points for Advanced Proficient. Another 22 booklets were selected to cover the range of 15 to 25 points for the Partially Proficient/Proficient cut score and 22 more booklets at 25 to 35 points for the Proficient/Advanced Proficient cut score. These 44 new booklets were used in the Pinpointing round to determine exactly where within the initial ranges the cut scores should fall.

For mathematics, which consisted primarily of multiple-choice items, and item mapping procedure called Item-Descriptor (ID) Matching was used. This is a variant of the Bookmark procedure that orders the operational items by difficulty as determined by the scale location of the items. Thus, the items that students performed best on appear first in an ordered test booklet and the items they performed worst on appear last. Panelists first go through the ordered test booklet and match the knowledge and skills required by the each item to the knowledge and skills listed in the performance level descriptors. That is, they ask themselves what one has to know and be able to do to answer an item correctly and then determine whether those knowledge and skills more closely match the descriptions of Partially Proficient, Proficient, and Advanced Proficient. Once they have matched each item to a performance level descriptor, they then determine the location of the cut score that best separates Partially Proficient performance from Proficient performance and Proficient from Advanced Proficient performance. ID Matching is conducted over three rounds with panelists receiving feedback about their ratings and having a chance to discuss their ratings with their peers between rounds.

In both procedures, panelists received “consequence” information about the percentage of students that 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 cut scores set after the first Pinpointing rating in Body of Work and after Round 2 in ID Matching. They then had the chance to discuss this information with their peers and make final adjustments to their ratings before the conclusion of Phase 1.

## Summary of Results

Overall, panelists’ judgments about the cut scores converged from one round to the next, showing strong agreement by the end of the final round of Phase 1 and even more agreement in Phase 2. Table 5.2.1 shows the recommended cut scores at the end of Round 2 (the equivalent of the first Pinpointing rating in Body of Work) before the panelists saw the consequences 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. Table 5.2.1 also shows that the Phase 2 panelists adopted the Phase 1 recommendations for three of the four cut scores and only modified the recommendation for the proficient cut score in mathematics by 2 points—within 1 SEM of the cut score recommended at the end of Phase 1.

**TABLE 5.2.1**

**2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Grade 3 LAL and Mathematics Standard-Setting Results from 2004  
Recommended Cut Scores at the End of Phase 1 and Phase 2**

	Phase 1 - Round 2		Phase 1 - Round 3		Phase 2	
	Proficient	Advanced Proficient	Proficient	Advanced Proficient	Proficient	Advanced Proficient
<b>LAL</b>						
Cut Score	19.5	32.5	18	30.5	18	30.5
SEM	2.5	2.0	2.5	2.0	2.5	2.0
SEJ	0.30	0.40	0.14	0.32	0.09	0.00
<b>Math</b>						
Cut Score	14.5	32.0	15	27.5	17.0	27.5
SEM	2.5	2.0	2.5	2.0	2.5	2.0
SEJ	0.50	0.31	0.32	0.35	0.25	0.12

Table 5.2.2 shows the final cut scores that were brought to the State Board of Education for their review and approval. The four cut scores recommended by the Phase 2 panel were presented along with the consequences data showing the percentage of grade 3 students who would be categorized as Partially Proficient, Proficient, and Advanced Proficient. 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. The State Board voted unanimously to adopt the recommended cut scores for the NJ ASK3.

**TABLE 5.2.2**

**2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Grade 3 LAL and Mathematics Standard-Setting Results from 2004  
Recommended Cut Scores After Phase 2**

	Cut score for Proficient	Cut Score for Advanced Proficient	% Partially Proficient	% Proficient	% Advanced Proficient
<b>LAL</b>	18.0	30.5	21.6%	74.6%	3.8%
<b>Math</b>	17.0	27.5	23.8%	53.4%	22.8%

### **5.3 Grade 4 Science**

The Science program became operational in 2005. As a result, a standard setting workshop was held after the March 2005 administration to determine the cut scores for Science. ETS conducted the standard setting workshop in two phases. The following text comes from the executive summary of the standard setting report. For more information about the standard setting workshop, the full report is available from the NJDOE.

#### **Overview**

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.

#### **Summary of the Process**

In April 2005, a group of educators was 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.

### **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**

**2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Grade 4 Science Standard-Setting Results from 2005  
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>	
	Advanced Proficient	Proficient	Advanced Proficient	Proficient	Advanced Proficient	Proficient	Advanced Proficient	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. The State Board voted unanimously to adopt the recommended cut scores for the NJ ASK grade 4 Science test.

**TABLE 5.3.2**

**2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Grade 4 Science Standard-Setting Results from 2005  
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.
- Distractor 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 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

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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).

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**

**2006 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>	<b>0.74</b>	<b>0.13</b>	<b>0.56</b>	<b>0.43</b>	<b>0.02</b>	<b>0.74</b>
Writing	--	--	--	0.45	0.02	0.78
Writing/Picture	--	--	--	0.46	--	0.80
Writing/Poem	--	--	--	0.43	--	0.75
<b>Reading</b>	<b>0.74</b>	<b>0.13</b>	<b>0.56</b>	<b>0.41</b>	<b>0.01</b>	<b>0.70</b>
Working with Text	0.81	0.05	0.60	0.41	--	0.70
Analyzing Text	0.63	0.13	0.51	0.41	--	0.70
<b>Mathematics</b>	<b>0.73</b>	<b>0.12</b>	<b>0.50</b>	<b>0.53</b>	<b>0.06</b>	<b>0.74</b>
Number Sense & Numerical Operations	0.69	0.11	0.50	0.57	--	0.74
Geometry & Measurement	0.81	0.10	0.43	--	--	--
Patterns & Algebra	0.62	0.06	0.55	0.55	--	0.72
Data Analysis, Probability & Discrete Math	0.75	0.15	0.53	0.47	--	0.75
Problem Solving	0.62	0.07	0.54	0.53	0.06	0.74

**TABLE 6.1.2**

**2006 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>	0.70	0.07	0.54	0.43	0.06	0.71
Writing	--	--	--	0.49	0.04	0.77
Writing/Picture	--	--	--	0.52	--	0.79
Writing/Poem	--	--	--	0.46	--	0.74
Reading	0.70	0.07	0.54	0.38	0.02	0.68
Working with Text	0.71	0.08	0.59	--	--	--
Analyzing Text	0.70	0.08	0.50	0.38	0.02	0.68
<b>Mathematics</b>	0.70	0.11	0.54	0.55	0.08	0.71
Number Sense & Numerical Operations	0.78	0.09	0.51	0.53	0.09	0.71
Geometry & Measurement	0.66	0.08	0.53	0.65	--	0.62
Patterns & Algebra	0.64	0.10	0.56	0.55	--	0.78
Data Analysis, Probability & Discrete Math	0.66	0.13	0.59	0.48	--	0.73
Problem Solving	0.65	0.10	0.57	0.55	0.08	0.71
<b>Science</b>	0.69	0.18	0.49	0.46	0.05	0.59
Life Science	0.63	0.22	0.45	0.49	--	0.61
Physical Science	0.77	0.14	0.51	0.40	--	0.56
Earth Science	0.69	0.10	0.49	0.49	--	0.61
Application	0.70	0.17	0.49	0.40	--	0.56

Frequency distributions of the March 2006 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****2006 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+	5	0	5	5
.700 - .799	2	2	3	4
.600 - .699	0	2	0	2
.500 - .599	0	0	0	0
<.500	0	1	0	1
<b>MEAN P-VALUE</b>	0.81	0.63	0.80	0.74
<b>MEDIAN P-VALUE</b>	0.81	0.64	0.81	0.77
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>				
.50+	6	4	7	10
.40 - .49	1	0	1	1
.27 - .39	0	1	0	1
<b>MEAN POINT-BISERIAL</b>	0.60	0.51	0.61	0.56
<b>MEDIAN POINT-BISERIAL</b>	0.61	0.57	0.63	0.59
<b>TOTAL NUMBER OF ITEMS</b>	7	5	8	12

**TABLE 6.1.4**

**2006 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	0	4	4
.500 - .599	1	0	1
<.500	0	0	0
<b>MEAN P-VALUE</b>	0.71	0.70	0.70
<b>MEDIAN P-VALUE</b>	0.71	0.68	0.71
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>			
.50+	5	4	9
.40 - .49	0	1	1
.30 - .39	0	1	1
<b>MEAN POINT-BISERIAL</b>	0.59	0.50	0.54
<b>MEDIAN POINT-BISERIAL</b>	0.60	0.54	0.56
<b>TOTAL NUMBER OF ITEMS</b>	5	6	11

**TABLE 6.1.5**

**2006 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	3	0	2	0	5
.800 - .899	1	1	0	0	0	2
.700 - .799	4	3	0	1	0	8
.600 - .699	3	1	2	1	4	7
.500 - .599	1	0	3	1	3	5
<.500	0	0	0	0	0	0
<b>MEAN P-VALUE</b>	0.70	0.81	0.62	0.75	0.62	0.73
<b>MEDIAN P-VALUE</b>	0.72	0.81	0.59	0.75	0.66	0.72
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>						
.50+	6	2	4	4	6	16
.40 - .49	2	3	1	1	1	7
.30 - .39	1	3	0	0	0	4
.20 - .29	0	0	0	0	0	0
<b>MEAN POINT-BISERIAL</b>	0.50	0.43	0.55	0.53	0.54	0.50
<b>MEDIAN POINT-BISERIAL</b>	0.52	0.44	0.54	0.53	0.54	0.50
<b>Total Number of Items</b>	9	8	5	5	7	27

**TABLE 6.1.6**

**2006 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	6	0	0	1	1	7
.700 - .799	4	2	2	2	2	10
.600 - .699	0	4	2	2	6	8
.500 - .599	1	1	3	1	3	6
<.500	0	0	0	1	1	1
<b>MEAN P-VALUE</b>	0.78	0.66	0.64	0.66	0.65	0.70
<b>MEDIAN P-VALUE</b>	0.80	0.66	0.66	0.68	0.66	0.71
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>						
.50 - .59	7	6	6	7	12	26
.40 - .49	4	0	1	0	1	5
.30 - .39	0	1	0	0	0	1
.20 - .29	0	0	0	0	0	0
<b>MEAN POINT-BISERIAL</b>	0.51	0.53	0.56	0.59	0.57	0.54
<b>MEDIAN POINT-BISERIAL</b>	0.52	0.55	0.56	0.56	0.56	0.56
<b>Total Number of Items</b>	11	7	7	7	13	32

**TABLE 6.1.7****2006 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+	1	1	0	2	3
.800 - .899	2	3	1	7	7
.700 - .799	2	3	3	7	7
.600 - .699	2	0	3	4	4
.500 - .599	1	2	2	5	5
<.500	4	0	0	3	4
<b>MEAN P-VALUE</b>	0.63	0.77	0.69	0.70	0.69
<b>MEDIAN P-VALUE</b>	0.68	0.78	0.69	0.77	0.77
<b>ITEM DISCRIMINATION: BISERIAL CORRELATIONS</b>					
.50+	3	5	4	12	12
.40 - .49	6	4	4	13	15
.30 - .39	3	0	1	3	3
.20 - .29	0	0	0	0	0
<b>MEAN POINT-BISERIAL</b>	0.45	0.51	0.49	0.49	0.49
<b>MEDIAN POINT-BISERIAL</b>	0.46	0.50	0.47	0.49	0.48
<b>Total Number of Items</b>	12	9	9	28	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 0.9% to 1.1%. 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 0.5% to 1.6%. The percentage of grade 3 students omitting the Mathematics open-ended items ranged from 1.1% to 1.4%.

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 3.9%. 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 0.4% to 2.1%. The percentage of grade 4 students omitting the Mathematics open-ended items ranged from 0.6% to 4.2%. 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 0.9%. The percentage of grade 4 students omitting the Science open-ended items ranged from 0.4% to 1.6%.

**TABLE 6.2.1**

**2006 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	0.4%	Item 7	1.1%
<u>Second Part</u>	Item 5	0.2%		
	Item 6	0.4%	Item 7	0.9%
<b>Mathematics</b>				
<u>Day 1</u>				
<u>First Part</u>	Item 2	0.5%		
	Item 3	1.4%		
<u>Second Part</u>	Item 5	1.0%		
	Item 6	1.6%		
<u>Third Part</u>	Item 12	0.5%		
	Item 13	0.6%	Item 14	1.1%
<u>Fourth Part</u>	Item 20	0.9%		
	Item 21	0.9%	Item 22	1.4%
<u>Fifth Part</u>	Item 28	0.7%		
	Item 29	0.5%	Item 30	1.1%

**TABLE 6.2.2**

**2006 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	0.3%	Item 6	0.5%
	Item 5	0.5%	Item 7	3.9%
<u>Second Part</u>	Item 5	0.3%		
	Item 6	0.6%	Item 7	0.9%
<b>Mathematics</b>				
<u>Day 1</u>				
<u>First Part</u>	Item 3	2.0%		
	Item 4	1.5%		
<u>Second Part</u>	Item 7	0.4%		
	Item 8	0.6%		
<u>Third Part</u>	Item 19	1.8%		
	Item 20	2.1%	Item 21	2.4%
<u>Fourth Part</u>	Item 26	0.8%	Item 28	1.8%
	Item 27	1.0%	Item 29	4.2%
<u>Day 2</u>				
<u>Fifth Part</u>	Item 34	1.8%	Item 36	0.6%
	Item 35	0.4%	Item 37	1.6%

**TABLE 6.2.2 (continued)**

**2006 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	0.9%		
<u>First Part</u>	Item 10	0.4%	Item 11	0.4%
<u>Second Part</u>	Item 20	0.8%		
	Item 21	0.3%	Item22	
<u>Third Part</u>	Item 31	0.8%		0.9%
	Item 32	0.2%	Item 33	1.6%

### 6.3 Intercorrelations

The Pearson product-moment correlation between student scores on the Language Arts Literacy and Mathematics content areas for grade 3 was .69; 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 .66 and .76, 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 .96 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**

**2006 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)	.93							
R MC Reading Multiple-Choice (12)	.86	.95						
R OE Reading Open-ended (8)	.80	.81	.58					
W Writing (20)	.84	.59	.51	.57				
<b>MAT Mathematics (33)</b>	<b>.69</b>	<b>.67</b>	<b>.62</b>	<b>.57</b>	<b>.53</b>			
M MC Mathematics Multiple-Choice (24)	.66	.65	.61	.54	.50	.95		
M OE Mathematics Open-ended (9)	.59	.57	.52	.52	.47	.88	.68	

Number in Parentheses is the number of points.  
Language Arts Literacy N=100,680; Mathematics N=101,602.

**TABLE 6.3.2**

**2006 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	.93						
R OE Reading Open-ended (12)	.83	.83	.57					
W Writing (20)	.85	.61	.50	.62				
<b>MAT Mathematics (43)</b>	<b>.70</b>	<b>.69</b>	<b>.64</b>	<b>.58</b>	<b>.53</b>			
M MC Mathematics Multiple-Choice (28)	.68	.68	.63	.55	.52	.96		
M OE Mathematics Open-ended (15)	.64	.63	.58	.54	.49	.93	.79	

Number in Parentheses is the number of points.  
Language Arts Literacy N=100,880; Mathematics N=101,659.

**TABLE 6.3.2 (Continued)**

**2006 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	.93						
R OE Reading Open-ended (12)	.83	.83	.57					
W Writing (20)	.85	.61	.50	.62				
<b>SCI Science (39)</b>	<b>.66</b>	<b>.69</b>	<b>.67</b>	<b>.52</b>	<b>.47</b>			
S MC Science Multiple-Choice (30)	.66	.68	.67	.51	.46	.96		
S OE Science Open-ended (9)	.48	.49	.47	.39	.34	.78	.58	

Number in Parentheses is the number of points.  
Language Arts Literacy N=100,880; Science N=101,636.

**TABLE 6.3.2 (Continued)**

**2006 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)	.96					
M OE Mathematics Open-ended (15)	.93	.79				
<b>SCI Science (39)</b>	<b>.76</b>	<b>.74</b>	<b>.69</b>			
S MC Science Multiple-Choice (30)	.73	.72	.66	.96		
S OE Science Open-ended (9)	.58	.55	.56	.78	.58	

Number in Parentheses is the number of points.  
Mathematics N=101,659; Science N=101,363.

**TABLE 6.3.3**

**2006 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)	.93													
L2 Writing (20)	.84	.59												
L3 Writing / Picture (10)	.76	.55	.88											
L4 Writing / Poem (10)	.72	.49	.88	.55										
L5 Working with Text (11)	.87	.93	.56	.52	.46									
L6 Analyzing Text (9)	.82	.88	.51	.48	.42	.65								
L7 Read First (8)	.82	.89	.51	.48	.42	.91	.68							
<b>MAT Mathematics (33)</b>	<b>.69</b>	<b>.67</b>	<b>.53</b>	<b>.50</b>	<b>.43</b>	<b>.63</b>	<b>.60</b>	<b>.59</b>						
M1 Number Sense and Numerical Operations (9)	.58	.56	.45	.43	.37	.52	.50	.49	.87					
M2 Geometry and Measurement (8)	.50	.49	.39	.36	.32	.46	.43	.45	.70	.50				
M3 Data Analysis, Probability and Discrete Math (8)	.59	.59	.45	.43	.37	.54	.52	.51	.84	.63	.49			
M4 Patterns and Algebra (8)	.57	.56	.44	.42	.36	.52	.50	.49	.86	.65	.47	.61		
M5 Problem Solving (16)	.64	.62	.49	.47	.40	.58	.56	.53	.95	.84	.56	.78	.88	

Number in Parentheses is the number of points.  
Language Arts Literacy N=100,680; Mathematics N=101,602.

**TABLE 6.3.4**

**2006 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	.61											
L3 Writing / Picture (10)	.77	.58	.89										
L4 Writing / Poem (10)	.71	.49	.86	.52									
L5 Working with Text (5)	.76	.83	.46	.44	.36								
L6 Analyzing Text (18)	.91	.96	.61	.57	.50	.63							
<b>MAT Mathematics (43)</b>	<b>.70</b>	<b>.69</b>	<b>.53</b>	<b>.50</b>	<b>.42</b>	<b>.58</b>	<b>.66</b>						
M1 Number Sense and Numerical Operations(13)	.63	.62	.49	.46	.39	.51	.59	.89					
M2 Geometry and Measurement (10)	.57	.57	.43	.41	.34	.48	.54	.85	.68				
M3 Data Analysis, Probability and Discrete Math (10)	.64	.64	.48	.46	.38	.54	.61	.88	.72	.68			
M4 Patterns and Algebra (10)	.61	.61	.46	.43	.36	.51	.58	.89	.73	.66	.72		
M5 Problem Solving (28)	.68	.67	.51	.49	.41	.56	.64	.98	.88	.81	.88	.98	

Number in Parentheses is the number of points.

Language Arts Literacy N=100,880; Mathematics N=101,659.

**TABLE 6.3.4 (Continued)**

**2006 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	.61										
L3 Writing / Picture (10)	.77	.58	.89									
L4 Writing / Poem (10)	.71	.49	.86	.52								
L5 Working with Text (5)	.76	.83	.46	.44	.36							
L6 Analyzing Text (18)	.91	.96	.61	.57	.50	.63						
<b>SCI Science (39)</b>	<b>.66</b>	<b>.69</b>	<b>.47</b>	<b>.45</b>	<b>.36</b>	<b>.60</b>	<b>.64</b>					
S1 Life Science (15)	.56	.58	.39	.38	.30	.50	.54	.88				
S2 Physical Science (12)	.57	.59	.39	.38	.3	.52	.55	.84	.59			
S3 Earth Science (12)	.59	.60	.42	.41	.32	.52	.56	.87	.62	.62		
S4 Application (31)	.65	.68	.46	.44	.35	.60	.63	.97	.81	.87	.84	

Number in Parentheses is the number of points.

Language Arts Literacy N=100,880; Science N=101,636.

**TABLE 6.3.4 (Continued)**

**2006 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)	.89										
M2 Geometry and Measurement (10)	.85	.68									
M3 Data Analysis, Probability and Discrete Math (10)	.88	.72	.68								
M4 Patterns and Algebra (10)	.89	.73	.66	.72							
M5 Problem Solving (28)	.98	.88	.81	.88	.88						
<b>SCI Science (39)</b>	<b>.76</b>	<b>.66</b>	<b>.65</b>	<b>.69</b>	<b>.66</b>	<b>.74</b>					
S1 Life Science (15)	.64	.55	.54	.58	.56	.62	.88				
S2 Physical Science (12)	.62	.54	.54	.57	.54	.60	.84	.59			
S3 Earth Science (12)	.70	.61	.60	.63	.61	.67	.87	.62	.62		
S4 Application (31)	.73	.64	.63	.67	.64	.71	.97	.81	.87	.84	

Number in Parentheses is the number of points.  
Mathematics N=101,659; Science N=101,636.

## 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**

**2006 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 2006 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 21.0 of 40 points for Language Arts Literacy, and 22.0 of 33 points for Mathematics. The table also shows the standard deviations of the raw scores for grade 3 were 5.4 on Language Arts Literacy and 6.5 on Mathematics. Table 6.5.2 shows that grade 4 students' mean raw scores were 22.2 of 43 points for Language Arts Literacy, 27.0 of 43 points for Mathematics, and 24.8 of 39 points for Science. The table also shows the standard deviations of the raw scores for grade 4 were 5.6 on Language Arts Literacy, 9.4 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****2006 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	21.0	5.4	100,680
<b>Mathematics</b>	33	22.0	6.5	101,602

**TABLE 6.5.2****2006 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	5.6	100,880
<b>Mathematics</b>	43	27.0	9.4	101,659
<b>Science</b>	39	24.8	6.5	101,636

**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 2006 tests. Table 6.5.3 shows that in Language Arts Literacy, grade 3 students’ mean percent correct was 52.5% overall with 60.5% in Reading and 44.6% in Writing. The mean raw score on the writing/speculate task in response to a picture was 4.6 points out of a possible 10 points and the mean raw score on the writing/analyze task in response to a poem was 4.3 points out of a possible 10 points. The mean percents correct in the two Reading clusters—Working with Text and Analyzing/Critiquing Text—were 66.6% and 53.2%.

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 58.8% in Patterns and Algebra to 80.5% in Geometry and Measurement. The mathematics items are also categorized as Problem Solving and Total. The mean percent correct was 56.8% for Problem Solving and 66.8% for Total.

Table 6.5.4 shows that in Language Arts Literacy, grade 4 students' mean percent correct was 51.5% overall with 53.5% in Reading and 49.2% in Writing. The mean raw score on the writing/speculate task in response to a picture was 5.2 points out of a possible 10 points and the mean raw score on the writing/analyze task in response to a poem was 4.6 points out of a possible 10 points. The mean percents correct in the two Reading clusters—Working with Text and Analyzing/Critiquing Text—were 71.1% and 48.6%.

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 59.7% in Data Analysis, Probability, and Discrete Math to 65.3% in Number Sense and Numerical Operations. The mathematics items are also categorized as Problem Solving and Total. The mean percent correct was 58.7% for Problem Solving and 62.9% 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 59.7% in Life Science to 67.3% in Physical Science. The Science items are also categorized as Application and Total. The mean percent correct was 66.6% for Application and 63.6% 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**

**2006 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>21.0</b>	<b>5.4</b>	<b>52.5</b>	<b>13.4</b>
Writing	0	2	20	8.9	2.4	44.6	12.0
Writing/Picture	0	1	10	4.6	1.4	45.9	13.6
Writing/Poem	0	1	10	4.3	1.3	43.2	13.5
Reading	12	2	20	12.1	3.6	60.5	17.9
Working with Text	7	1	11	7.3	2.2	66.6	20.1
Analyzing Text	5	1	9	4.8	1.7	53.2	19.1
<b>Mathematics*</b>	<b>27</b>	<b>3</b>	<b>33</b>	<b>22.0</b>	<b>6.5</b>	<b>66.8</b>	<b>19.7</b>
Number Sense and Numerical Operations*	9	1	9	5.8	2.3	64.0	25.3
Geometry and Measurement	8	0	8	6.4	1.4	80.5	17.6
Patterns and Algebra	5	1	8	4.7	2.2	58.8	27.7
Data Analysis, Probability, and Discrete Math	5	1	8	5.1	2.0	64.0	24.6
Problem Solving	7	3	16	9.1	4.2	56.8	26.2

\* 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****2006 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>5.6</b>	<b>51.5</b>	<b>13.0</b>
Writing	0	2	20	9.8	2.5	49.2	12.3
Writing/Picture	0	1	10	5.2	1.5	52.4	14.7
Writing/Poem	0	1	10	4.6	1.3	46.0	13.4
Reading	11	3	23	12.3	3.7	53.5	16.2
Working with Text	5	0	5	3.6	1.4	71.1	27.7
Analyzing Text	6	3	18	8.8	2.7	48.6	15.0
<b>Mathematics*</b>	<b>32</b>	<b>5</b>	<b>43</b>	<b>27.0</b>	<b>9.4</b>	<b>62.9</b>	<b>22.0</b>
Number Sense and Numerical Operations*	11	2	13	8.5	2.9	65.3	22.0
Geometry and Measurement	7	1	10	6.5	2.5	65.2	24.6
Patterns and Algebra	7	1	10	6.1	2.8	60.7	27.8
Data Analysis, Probability, and Discrete Math	7	1	10	6.0	2.6	59.7	26.4
Problem Solving	13	5	28	16.4	6.8	58.7	24.3
<b>Science</b>	<b>30</b>	<b>3</b>	<b>39</b>	<b>24.8</b>	<b>6.5</b>	<b>63.6</b>	<b>16.6</b>
Life Science	12	1	15	9.0	2.8	59.7	18.9
Physical Science	9	1	12	8.1	2.2	67.3	18.4
Earth Science	9	1	12	7.8	2.5	64.9	20.5
Application	28	1	31	20.6	5.1	66.6	16.5

\* 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****2006 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>2.6</b>	<b>73.5</b>	<b>21.6</b>
Writing <sup>a</sup>	--	--	--	--	--
Writing/Picture	--	--	--	--	--
Writing/Poem	--	--	--	--	--
Reading	12	8.8	2.6	73.5	21.6
Working with Text	7	5.7	1.6	81.0	22.6
Analyzing Text	5	3.2	1.4	63.1	27.1
<b>Mathematics*</b>	<b>24</b>	<b>17.3</b>	<b>4.2</b>	<b>72.1</b>	<b>17.6</b>
Number Sense and Numerical Operations*	6	4.0	1.4	67.5	24.0
Geometry and Measurement	8	6.4	1.4	80.5	17.6
Patterns and Algebra	5	3.1	1.5	61.3	29.1
Data Analysis, Probability and Discrete Math	5	3.7	1.2	74.8	23.1
Problem Solving	7	4.4	1.9	62.2	26.6

\* 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****2006 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>7.7</b>	<b>2.5</b>	<b>70.3</b>	<b>23.0</b>
Writing <sup>a</sup>	--	--	--	--	--
Writing/Picture	--	--	--	--	--
Writing/Poem	--	--	--	--	--
Reading	11	7.7	2.5	70.3	23.0
Working with Text	5	3.6	1.4	71.1	27.7
Analyzing Text	6	4.2	1.5	69.6	24.6
<b>Mathematics*</b>	<b>28</b>	<b>19.0</b>	<b>5.8</b>	<b>67.7</b>	<b>20.8</b>
Number Sense and Numerical Operations*	7	5.4	1.4	76.6	20.6
Geometry and Measurement	7	4.6	1.8	65.6	25.5
Patterns and Algebra	7	4.5	1.9	63.8	26.8
Data Analysis, Probability and Discrete Math	7	4.5	1.9	64.8	26.6
Problem Solving	13	8.3	3.1	64.2	24.1
<b>Science</b>	<b>30</b>	<b>20.7</b>	<b>4.9</b>	<b>68.9</b>	<b>16.4</b>
Life Science	12	7.5	2.2	62.4	18.0
Physical Science	9	6.9	1.7	76.3	19.4
Earth Science	9	6.3	1.9	70.3	21.3
Application	28	19.4	4.7	69.4	16.8

\* 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****2006 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>12.2</b>	<b>3.4</b>	<b>43.6</b>	<b>12.1</b>
Writing	2	20	8.9	2.4	44.6	12.0
Writing/Picture	1	10	4.6	1.4	45.9	13.6
Writing/Poem	1	10	4.3	1.3	43.2	13.5
Reading	2	8	3.3	1.4	41.1	17.4
Working with Text	1	4	1.7	1.0	41.3	24.4
Analyzing Text	1	4	1.6	0.7	40.8	16.4
<b>Mathematics</b>	<b>3</b>	<b>9</b>	<b>4.7</b>	<b>2.8</b>	<b>52.6</b>	<b>31.5</b>
Number Sense, and Numerical Operations	1	3	1.7	1.2	57.0	39.8
Geometry and Measurement	0	0	--	--	--	--
Patterns and Algebra	1	3	1.6	1.2	54.6	39.2
Data Analysis Probability and Discrete Math	1	3	1.4	1.2	46.1	39.7
Problem Solving	3	9	4.7	2.8	52.6	31.5

**TABLE 6.5.8****2006 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>14.4</b>	<b>3.7</b>	<b>45.1</b>	<b>11.6</b>
Writing	2	20	9.8	2.5	49.2	12.3
Writing/Picture	1	10	5.2	1.5	52.4	14.7
Writing/Poem	1	10	4.6	1.3	46.0	13.4
Reading	3	12	4.6	1.7	38.1	13.9
Working with Text	0	0	--	--	--	--
Analyzing Text	3	12	4.6	1.7	38.1	13.9
<b>Mathematics</b>	<b>5</b>	<b>15</b>	<b>8.1</b>	<b>4.1</b>	<b>53.9</b>	<b>27.6</b>
Number Sense, and Numerical Operations	2	6	3.1	1.8	52.1	29.9
Geometry and Measurement	1	3	1.9	1.1	64.3	37.7
Patterns and Algebra	1	3	1.6	1.3	53.6	42.0
Data Analysis Probability and Discrete Math	1	3	1.4	1.1	47.6	37.7
Problem Solving	5	15	8.1	4.1	53.9	27.6
<b>Science</b>	<b>3</b>	<b>9</b>	<b>4.1</b>	<b>2.2</b>	<b>45.9</b>	<b>24.4</b>
Life Science	1	3	1.5	1.3	48.9	42.1
Physical Science	1	3	1.2	0.9	40.3	29.1
Earth Science	1	3	1.5	0.9	48.6	31.6
Application	1	3	1.2	0.9	40.3	29.1

**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 needed to obtain a score of 200 on the 2006 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 2006 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**

**2006 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 2006 NJ ASK grade 3 Language Arts Literacy form were

equated back to scores on the 2004 NJ ASK grade 3 Language Arts Literacy base form via 2005 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.

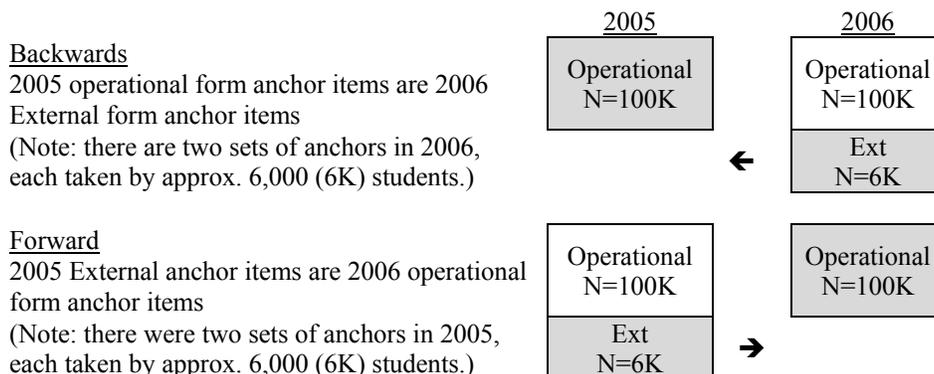
Scores on the 2006 NJ ASK grade 4 Language Arts Literacy form were equated back to scores on the 2001 Language Arts Literacy base form via 2005 anchored Rasch difficulty parameters and using IRT true score equating procedures. The grade 4 base year Language Arts Literacy raw score scale ranged from 0-43.0. 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., 2006) 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 Forwards. 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., 2006). The Forwards equating items were “pre-tested” as external sets on the old form (2004) and appear in the operational form on the new form (2006). In 2006, 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**

**2006 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 Forwards calibrations. The Backwards and Forwards 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 indicates students in 2006 were about the same in ability as students in 2005, and the 2006 form was the same in difficulty as the 2005 form. The recommended raw-score cut points 2006 for the grade 3 Language Arts Literacy test were 16.5 and 29.5 for proficient and advanced proficient categories, respectively. Details about the methods and results are described in the 2006 NJ ASK Grade 3 Language Arts Literacy Equating Report.

For grade 4, performance on the equating anchor items indicates students in 2006 were less able than students in 2005, and the 2006 form was less difficult than the 2005 form at the low end of the scale and similar in difficulty at the high end of the scale. The recommended raw-score cut points this year for Language Arts Literacy were 18.0 and 31.0 for proficient and advanced proficient categories respectively. Details about the methods and results are described in the 2006 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 2006 may be found in Appendix C.

To create Braille forms, a committee reviewed the 2006 Language Arts Literacy test items. Items that could not be translated into Braille were dropped from the Braille versions of the operational forms. In both grades 3 and 4 Language Arts Literacy the writing about pictures items (worth a maximum of 10 points) were dropped from the Braille forms. No other items were dropped. As a result, the Braille version of the grade 3 test was worth a maximum of 30 points (instead of 40) and the Braille version of the grade 4 test was worth a maximum of 33 points (instead of 43). Using the item parameters of the remaining items (in Tables 7.2.1 and 7.2.3), separate raw-to-scale score conversion tables were created for the Braille forms.

**TABLE 7.2.1**

**2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Language Arts Literacy Item Parameters – Grade 3**

Item No.	Measure	Anchor	Error	INFIT		OUTFIT		Score	
				MNSQ	ZSTD	MNSQ	ZSTD	Corr.	Displace
1	0.6904	Free	0.0019	0.88	-9.9	0.89	-9.9	0.77	0.02
2	0.0151	Anchor	0.0043	0.86	-9.9	0.79	-9.9	0.53	-0.07
3	-0.3736	Anchor	0.0050	1.09	9.9	1.18	9.9	0.37	0.02
4	-0.3279	Anchor	0.0049	0.82	-9.9	0.73	-9.9	0.48	-0.11
5	-0.5695	Anchor	0.0054	0.88	-9.9	0.83	-9.9	0.42	-0.07
6	-0.1030	Anchor	0.0045	0.95	-9.9	0.90	-9.9	0.46	-0.04
7	0.1386	Anchor	0.0042	1.07	9.9	1.11	9.9	0.41	0.00
8	1.0317	Anchor	0.0030	0.68	-9.9	0.67	-9.9	0.68	0.02
9	0.8622	Free	0.0019	1.03	5.2	1.05	9.6	0.73	-0.01
10	-0.3020	Anchor	0.0048	0.84	-9.9	0.72	-9.9	0.51	-0.06
11	-0.6640	Anchor	0.0057	0.90	-9.9	0.83	-9.9	0.43	-0.02
12	-0.5986	Anchor	0.0055	0.99	-1.6	0.98	-1.7	0.39	0.00
13	-0.1189	Anchor	0.0045	0.88	-9.9	0.82	-9.9	0.51	-0.05
14	0.2034	Anchor	0.0041	0.98	-4.3	0.98	-2.9	0.46	-0.04
15	0.6753	Anchor	0.0040	1.28	9.9	1.58	9.9	0.21	0.02
16	0.8146	Anchor	0.0023	0.89	-9.9	0.90	-9.9	0.69	0.06

**TABLE 7.2.2**

**2006 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	-1.38	16	1	-0.30
8	2	-2.37	16	2	-1.62
8	3	-0.82	16	3	-0.33
8	4	-0.80	16	4	-0.81
8	5	0.80	16	5	0.46
8	6	0.76	16	6	0.22
8	7	1.72	16	7	1.16
8	8	2.08	16	8	1.22

**TABLE 7.2.3**

**2006 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	0.3680	Free	0.0016	0.89	-9.9	0.90	-9.9	0.78	0.01
2	-0.3579	Anchor	0.0042	0.91	-9.9	0.80	-9.9	0.49	0.01
3	-0.0930	Anchor	0.0039	0.99	-3.0	0.98	-2.7	0.42	-0.05
4	-0.1015	Anchor	0.0039	0.93	-9.9	0.88	-9.9	0.47	-0.05
5	0.1151	Anchor	0.0037	0.98	-5.2	0.99	-1.9	0.45	-0.03
6	0.0643	Anchor	0.0037	1.21	9.9	1.35	9.9	0.30	0.04
7	1.0607	Anchor	0.0025	0.66	-9.9	0.65	-9.9	0.69	0.05
8	1.0716	Anchor	0.0024	0.76	-9.9	0.75	-9.9	0.67	0.05
9	0.6569	Free	0.0017	1.02	4.3	1.08	9.9	0.71	0.00
10	-0.3562	Anchor	0.0042	0.91	-9.9	0.85	-9.9	0.46	-0.03
11	0.2357	Anchor	0.0036	0.99	-3.8	1.01	2.1	0.46	-0.02
12	0.0476	Anchor	0.0037	0.99	-4.1	0.98	-2.9	0.44	-0.06
13	-0.0170	Anchor	0.0038	1.00	0.6	1.03	5.0	0.42	-0.04
14	-0.3182	Anchor	0.0042	1.08	9.9	1.20	9.9	0.33	-0.02
15	-0.4308	Anchor	0.0044	0.92	-9.9	0.86	-9.9	0.42	-0.07
16	1.4183	Anchor	0.0030	0.84	-9.9	0.84	-9.9	0.60	-0.02

**TABLE 7.2.4**

**2006 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	-1.20	8	1	-0.94	16	1	-1.80
7	2	-1.87	8	2	-1.71	16	2	-3.16
7	3	-0.90	8	3	-1.04	16	3	-0.96
7	4	-1.04	8	4	-0.95	16	4	-0.79
7	5	0.34	8	5	0.51	16	5	0.87
7	6	0.56	8	6	0.53	16	6	0.79
7	7	2.22	8	7	1.82	16	7	2.51
7	8	1.88	8	8	1.79	16	8	2.55

### 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 2006 NJ ASK grade 3 Mathematics form were equated back to scores on the 2004 NJ ASK grade 3 Mathematics base form via 2005 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 2006 NJ ASK grade 4 Mathematics form were equated back to scores on the 1999 Mathematics base form via 2005 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 12 anchor items from the 2005 form. Two anchor items were ½-point multiple-choice (MC) items, nine were 1-point MC items, and one was a three-point open-ended item (for a total of 13 points). All of the anchors were embedded in the new form. Sample size was 100,703 or approximately 99% of the total NJ grade 3 population with valid test scores. The 2006 students appear to be *more able* than the 2005 students and the 2006 form was *more difficult* than the 2005 math form. The recommended raw-score (and scale-score) cut points for the 2006 Grade 3 Mathematics NJ ASK based on the equating results were 14.0 (200) and 26.5 (250) for Proficient and Advanced Proficient categories respectively.

For grade 4, equating was carried out using 13 anchor items from the 2005 form. The anchor set included two half-point and ten one-point multiple-choice items and one three-point open-ended items for a total of 14 points. All of the anchors were embedded in the new form. Sample size was 100,771 or approximately 99% of the total NJ grade 4 population with valid test scores. The 2006 students appear to be more able than the 2005 students and the 2006 form was more difficult than the 2005 math form. The recommended raw-score (and scale-score) cut points for the 2006 Mathematics NJ ASK based on the equating results were 17.5 (200) for Proficient and 31.0 (250) for Advanced Proficient categories. Details about the methods and results are described in the 2006 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 2006 are

presented in Appendix C. To create Braille forms a committee reviewed the 2006 Mathematics test items. There were no items that could not be translated into Braille. Therefore, separate raw-to-scale score conversion tables were not created for the Braille forms in 2006.

**TABLE 7.3.1**

**2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Mathematics Item Parameters – Grade 3**

Item No.	Measure	Anchor	Error	IN FIT		OUT FIT		Score Corr.	Displace
				MNSQ	ZSTD	MNSQ	ZSTD		
1	-1.2935	Free	0.0100	0.94	-8.6	0.83	-9.9	0.29	0.00
2	-0.0997	Anchor	0.0072	0.88	-9.9	0.83	-9.9	0.42	-0.04
3	-0.2486	Free	0.0074	0.91	-9.9	0.86	-9.9	0.39	0.00
4	-0.4479	Free	0.0077	0.91	-9.9	0.83	-9.9	0.39	0.00
5	0.4533	Free	0.0067	1.00	1.2	1.01	5.0	0.26	0.00
6	-0.3875	Anchor	0.0076	0.90	-9.9	0.85	-9.9	0.35	-0.07
7	0.4118	Anchor	0.0037	1.05	9.9	1.09	9.9	0.39	0.03
8	-0.4465	Free	0.0055	1.05	6.2	1.16	9.5	0.24	0.00
9	-0.4224	Anchor	0.0054	0.82	-9.9	0.83	-9.9	0.28	-0.14
10	0.6143	Anchor	0.0036	1.09	9.9	1.13	9.9	0.37	0.01
11	0.7738	Anchor	0.0036	0.92	-9.9	0.91	-9.9	0.50	0.00
12	0.5954	Free	0.0036	1.04	9.9	1.05	9.8	0.40	0.00
13	-0.5852	Anchor	0.0060	0.99	-1.7	0.93	-4.1	0.31	0.03
14	0.7382	Free	0.0019	1.03	6.1	1.01	1.8	0.65	0.00
15	0.3404	Anchor	0.0038	1.13	9.9	1.25	9.9	0.29	-0.03
16	0.8130	Anchor	0.0036	0.97	-9.9	0.97	-6.5	0.46	-0.02
17	-0.4411	Free	0.0055	1.08	9.9	1.36	9.9	0.21	0.00
18	0.1923	Free	0.0040	0.99	-2.2	0.92	-9.8	0.40	0.00
19	0.5642	Anchor	0.0036	1.10	9.9	1.15	9.9	0.38	0.06
20	0.6353	Free	0.0036	0.97	-9.9	0.96	-8.7	0.46	0.00
21	-0.4368	Free	0.0055	0.89	-9.9	0.70	-9.9	0.37	0.00
22	0.6656	Anchor	0.0019	0.98	-3.5	0.98	-3.2	0.66	0.04
23	0.1803	Free	0.0040	1.18	9.9	1.38	9.9	0.24	0.00
24	-0.2295	Free	0.0048	0.99	-2.1	0.99	-0.7	0.33	0.00
25	0.3677	Free	0.0038	1.01	1.6	0.96	-5.9	0.41	0.00
26	0.4141	Free	0.0037	1.00	1.0	0.98	-2.9	0.41	0.00
27	0.3430	Anchor	0.0038	1.02	6.3	1.00	0.1	0.42	0.05
28	0.5540	Free	0.0036	1.03	9.1	1.03	5.2	0.41	0.00
29	0.1397	Free	0.0041	1.04	9.0	1.12	9.9	0.35	0.00
30	0.9621	Free	0.0019	0.97	-6.3	0.94	-9.7	0.67	0.00

**TABLE 7.3.2**

**2006 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	1.65
14	2	-2.24
14	3	2.03
14	4	-1.05
14	5	0.89
14	6	-1.28

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	1.79
30	2	-1.74
30	3	1.42
30	4	-1.67
30	5	1.08
30	6	-0.87

**TABLE 7.3.3**

**2006 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	-0.9561	Free	0.0094	0.91	-9.9	0.80	-9.9	0.35	-0.01
2	-0.5864	Free	0.0084	0.88	-9.9	0.78	-9.9	0.42	0.00
3	0.1820	Anchor	0.0070	0.85	-9.9	0.80	-9.9	0.46	-0.07
4	-0.5547	Free	0.0083	0.89	-9.9	0.79	-9.9	0.41	-0.01
5	0.1153	Free	0.0071	0.94	-9.9	0.92	-9.9	0.36	-0.01
6	-1.0054	Anchor	0.0095	0.92	-9.9	0.78	-9.9	0.38	0.03
7	-1.0982	Free	0.0098	0.94	-8.8	0.85	-9.9	0.30	-0.01
8	-0.3856	Free	0.0079	0.91	-9.9	0.84	-9.9	0.38	-0.01
9	0.5584	Free	0.0038	1.02	6.1	1.04	5.7	0.43	-0.01
10	0.5797	Anchor	0.0038	1.02	7.2	1.02	2.6	0.44	0.03
11	0.6255	Free	0.0037	1.00	-0.8	0.99	-1.9	0.45	-0.01
12	0.9477	Free	0.0036	1.02	6.0	1.04	8.7	0.45	-0.01
13	0.1064	Anchor	0.0044	1.10	9.9	1.09	8.2	0.38	0.06
14	0.4913	Anchor	0.0039	1.02	5.0	1.01	0.9	0.44	0.02
15	0.1235	Anchor	0.0044	0.88	-9.9	0.74	-9.9	0.50	0.03
16	0.2763	Anchor	0.0041	0.99	-3.4	0.95	-5.8	0.41	-0.03
17	0.9168	Free	0.0036	0.95	-9.9	0.95	-9.7	0.50	-0.01
18	0.7151	Free	0.0037	0.98	-5.4	0.97	-5.6	0.47	-0.01
19	0.4156	Free	0.0039	0.89	-9.9	0.80	-9.9	0.51	-0.01
20	0.2945	Anchor	0.0041	1.07	9.9	1.09	9.9	0.40	0.05
21	1.1446	Free	0.0021	0.95	-9.9	0.94	-9.9	0.68	-0.01
22	0.3787	Anchor	0.0040	0.98	-5.0	0.93	-9.5	0.44	-0.02
23	0.6075	Free	0.0038	0.93	-9.9	0.90	-9.9	0.49	-0.01
24	0.8801	Anchor	0.0036	1.05	9.9	1.10	9.9	0.43	0.09
25	0.1245	Free	0.0044	1.11	9.9	1.39	9.9	0.30	-0.01
26	0.7719	Free	0.0036	1.19	9.9	1.35	9.9	0.31	-0.01
27	0.1740	Anchor	0.0043	1.19	9.9	1.22	9.9	0.37	0.11
28	0.9626	Free	0.0018	0.93	-9.9	0.90	-9.9	0.70	-0.01
29	1.0794	Free	0.0020	1.02	4.0	0.99	-1.1	0.67	-0.01
30	0.6188	Free	0.0037	1.05	9.9	1.08	9.9	0.41	-0.01
31	1.0011	Free	0.0036	1.00	1.6	1.02	3.1	0.46	-0.01
32	1.0818	Anchor	0.0036	1.04	9.9	1.08	9.9	0.43	0.07
33	0.8435	Free	0.0036	0.98	-8.1	0.97	-5.6	0.48	-0.01
34	0.8679	Free	0.0036	1.13	9.9	1.21	9.9	0.36	-0.01
35	0.2399	Free	0.0042	0.96	-9.5	0.92	-8.7	0.44	-0.01
36	0.8211	Anchor	0.0020	1.09	9.9	1.15	9.9	0.64	0.00
37	0.6569	Free	0.0020	1.36	9.9	1.51	9.9	0.57	-0.01

**TABLE 7.3.4****2006 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	1.09	28	1	1.69	29	1	1.64
21	2	-2.09	28	2	-0.91	29	2	-2.36
21	3	1.13	28	3	0.58	29	3	1.68
21	4	-0.90	28	4	-1.28	29	4	-1.06
21	5	1.19	28	5	1.91	29	5	0.76
21	6	-0.42	28	6	-1.99	29	6	-0.66

Item	Category	Step	Item	Category	Step
36	0	0.00	37	0	0.00
36	1	0.79	37	1	1.65
36	2	-0.71	37	2	-2.44
36	3	0.46	37	3	2.84
36	4	-0.97	37	4	-1.97
36	5	2.07	37	5	3.12
36	6	-1.63	37	6	-3.20

**7.4 Equating Science**

The NJ ASK grade 4 Science test became operational in 2005. Standard setting workshops were held after the administration. See Part 5, Standard-Setting, for more information about the scaling of the 2005 NJ ASK grade 4 Science section.

The base year for grade 4 Science is 2005. Scores on the 2006 NJ ASK grade 4 Science form were equated back to scores on the 2005 base form via the 2005 anchored Rasch difficulty parameters and using IRT true score equating procedures. The grade 4 Science base year raw score scale ranged from 0-39.0. The base year raw cut score for Proficient was 19.0 (200) and the raw cut score for Advanced Proficient was 30.0 (250). These raw cut scores were determined at the standard-setting workshop in 2005.

The data collection design for the NJ ASK Science test is also a Common-Item Nonequivalent Groups design. The Science 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).

Equating was carried out using 11 anchor items from the 2005 form. Ten anchor items were multiple-choice and one was open-ended (for a total of 13 points). All of the anchors were embedded in the new form. Sample size was 101,587 or approximately 99% of the total New

Jersey grade 4 population. The 2006 students appear to be more able than the 2005 students and the 2006 form was about the same in difficulty as the 2005 science form (although, the 2006 form was less difficult than the 2005 form at the low end of the scale and more difficult than the 2005 form at the high end of the scale). The recommended raw-score (and scale-score) cut points for the 2006 NJ ASK Science test based on the equating results were 19.0 (200) and 29.5 (250) for Proficient and Advanced Proficient categories, respectively. Details about the methods and results are described in the 2006 NJ ASK Grade 4 Science Equating Report.

Table 7.4.1 shows the Rasch difficulty parameters (“Measure”), and item fit statistics from WINSTEPS for the equating for grade 4 Science. Table 7.4.2 shows the fixed step parameters for the open-ended items for grade 4 Science. The raw-to-scale score conversion tables for Science 2006 are presented in Appendix C.

To create a Braille form, a committee reviewed the Science test items. Items that could not be translated into Braille were dropped from the Braille version of the operational form. In 2006, four items could not be translated into Braille (i.e., items 2, 6, 12, and 22). Three items were multiple-choice and one was open-ended (worth a maximum of 6 points). As a result, the Science Braille version of the grade 4 test was worth a maximum of 33 points (instead of 39). Using the item parameters of the remaining items (in Table 7.4.1), a separate raw-to-scale score conversion table was created for the Braille form.

**TABLE 7.4.1****2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Science Item Parameters – Grade 4**

Item No.	Measure	Anchor	Error	IN FIT		OUT FIT		Score	
				MNSQ	ZSTD	MNSQ	ZSTD	Corr.	Displace
1	-1.0497	Free	0.0064	0.94	-6.3	0.88	-7.4	0.28	0.00
2	-0.8923	Free	0.0057	0.94	-7.2	0.83	-9.9	0.31	0.00
3	-0.2348	Free	0.0039	0.90	-9.9	0.81	-9.9	0.45	0.00
4	0.6026	Free	0.0035	0.97	-9.9	1.00	1.1	0.41	-0.01
5	-0.6440	Free	0.0048	0.90	-9.9	0.76	-9.9	0.40	0.00
6	-0.3852	Free	0.0042	0.91	-9.9	0.84	-9.9	0.42	0.00
7	-0.0263	Free	0.0036	1.10	9.9	1.12	9.9	0.27	0.00
8	0.4014	Anchor	0.0034	1.02	6.6	1.03	8.0	0.38	0.03
9	-0.5601	Free	0.0046	1.01	1.8	1.02	2.5	0.29	0.00
10	0.2567	Free	0.0035	1.06	9.9	1.07	9.9	0.33	-0.01
11	0.5097	Free	0.0017	1.24	9.9	1.35	9.9	0.56	0.00
12	-0.6733	Free	0.0049	1.05	6.9	1.11	9.3	0.24	0.00
13	-0.3111	Free	0.0040	0.94	-9.9	0.87	-9.9	0.41	0.00
14	-0.2551	Free	0.0039	0.91	-9.9	0.85	-9.9	0.44	0.00
15	0.4104	Free	0.0034	0.92	-9.9	0.91	-9.9	0.47	0.00
16	0.9516	Free	0.0037	1.05	9.9	1.11	9.9	0.32	-0.01
17	-0.2457	Anchor	0.0039	0.96	-9.9	0.99	-1.7	0.35	-0.04
18	0.3622	Free	0.0034	1.04	9.9	1.07	9.9	0.35	-0.01
19	-0.6780	Free	0.0049	0.92	-9.9	0.81	-9.9	0.37	0.00
20	0.7606	Anchor	0.0035	0.98	-6.8	1.04	8.4	0.37	0.05
21	0.4029	Free	0.0034	1.04	9.9	1.07	9.9	0.35	0.00
22	0.5552	Free	0.0020	1.01	1.6	1.00	0.1	0.58	0.00
23	-0.4472	Free	0.0043	0.96	-7.4	0.90	-9.9	0.36	-0.01
24	0.1272	Anchor	0.0035	0.90	-9.9	0.86	-9.9	0.47	-0.02
25	-0.2518	Free	0.0039	0.92	-9.9	0.83	-9.9	0.44	0.00
26	-0.0087	Anchor	0.0036	0.98	-7.2	0.94	-9.9	0.37	-0.05
27	-0.0289	Anchor	0.0036	1.00	-0.3	1.00	0.4	0.37	-0.01
28	0.6972	Anchor	0.0035	1.11	9.9	1.20	9.9	0.27	0.01
29	-0.2140	Anchor	0.0039	0.94	-9.9	0.90	-9.9	0.37	-0.05
30	-0.5610	Anchor	0.0046	0.75	-9.9	0.58	-9.9	0.45	-0.11
31	0.0029	Free	0.0036	1.03	8.8	1.04	7.8	0.35	0.00
32	-0.8655	Anchor	0.0056	0.97	-3.2	0.87	-9.7	0.30	0.01
33	0.6660	Anchor	0.0021	1.06	9.9	1.07	9.9	0.52	0.12

**TABLE 7.4.2****2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Science Fixed OE Item Step Parameters – Grade 4**

Item	Category	Step	Item	Category	Step	Item	Category	Step
11	0	0	22	0	0	33	0	0
11	1	2.11	22	1	1.54	33	1	0.80
11	2	-0.30	22	2	-2.24	33	2	-1.90
11	3	-0.36	22	3	2.13	33	3	0.92
11	4	-1.24	22	4	-3.22	33	4	-1.82
11	5	0.12	22	5	3.66	33	5	2.30
11	6	-0.32	22	6	-1.87	33	6	-0.31

**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****2006 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>0.84</b>	<b>2.16</b>	<b>8.79</b>
Reading	20	0.80	1.61	.
Writing	20	0.71	1.28	.
Working with Text	11	0.67	1.27	.
Analyzing Text	9	0.58	1.12	.
<b>Mathematics</b>	<b>33</b>	<b>0.86</b>	<b>2.44</b>	<b>10.48</b>
Number Sense and Numerical Operations	9	0.67	1.30	.
Geometry and Measurement	8	0.45	1.04	.
Patterns and Algebra	8	0.58	1.44	.
Data analysis, Probability and Discrete Math	8	0.50	1.40	.
Problem Solving	16	0.79	1.91	.

**TABLE 9.1.2****2006 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>0.83</b>	<b>2.27</b>	<b>9.55</b>
Reading	23	0.81	1.63	.
Writing	20	0.69	1.38	.
Working with Text	5	0.60	0.88	.
Analyzing Text	18	0.74	1.37	.
<b>Mathematics</b>	<b>43</b>	<b>0.91</b>	<b>2.85</b>	<b>10.49</b>
Number Sense and Numerical Operations	13	0.74	1.46	.
Geometry and Measurement	10	0.61	1.54	.
Patterns and Algebra	10	0.64	1.67	.
Data analysis, Probability and Discrete Math	10	0.69	1.48	.
Problem Solving	28	0.87	2.47	.
<b>Science</b>	<b>39</b>	<b>0.83</b>	<b>2.70</b>	<b>12.89</b>
Life Science	15	0.56	1.88	.
Physical Science	12	0.60	1.39	.
Earth Science	12	0.61	1.53	.
Application	31	0.80	2.28	.

**TABLE 9.1.3****2006 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>0.74</b>	<b>1.32</b>
Reading	12	0.74	1.32
Writing*	--	--	--
Writing/Picture	--	--	--
Writing/Poem	--	--	--
Working with Text	7	0.67	0.90
Analyzing Text	5	0.50	0.96
<b>Mathematics</b>	<b>24</b>	<b>0.80</b>	<b>1.90</b>
Number Sense and Numerical Operations	6	0.61	0.90
Geometry and Measurement	8	0.45	1.04
Patterns and Algebra	5	0.56	0.97
Data analysis, Probability and Discrete Math	5	0.45	0.85
Problem Solving	7	0.62	1.15

**TABLE 9.1.4****2006 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>0.72</b>	<b>1.35</b>
Reading	11	0.72	1.35
Writing*	--	--	--
Writing/Picture	--	--	--
Writing/Poem	--	--	--
Working with Text	5	0.60	0.88
Analyzing Text	6	0.52	1.02

**TABLE 9.1.4 (Continued)**  
**2006 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>0.87</b>	<b>2.08</b>
Number Sense and Numerical Operations	7	0.64	0.86
Geometry and Measurement	7	0.60	1.12
Patterns and Algebra	7	0.61	1.18
Data analysis, Probability and Discrete Math	7	0.66	1.08
Problem Solving	13	0.77	1.51
<b>Science</b>	<b>30</b>	<b>0.80</b>	<b>2.20</b>
Life Science	12	0.56	1.44
Physical Science	9	0.58	1.13
Earth Science	9	0.58	1.24
Application	28	0.79	2.13

\* 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 classify 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 0.94. 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 0.94.

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 0.92. For Mathematics, the estimated proportion correctly classified overall was 0.84. When the decisions were collapsed to below proficient versus proficient and above, the estimated proportion correctly classified was 0.94. 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**

**2006 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 (29.5-40.0)</b>	<b>Proficient (16.5-29.0)</b>	<b>Partially Proficient (0-16.0)</b>	<b>Observed Total</b>
<i>True Score</i>	<b>Placement Score</b>				
	<b>Advanced Proficient (29.5-40.0)</b>	0.00	0.08	0.00	0.08
	<b>Proficient (16.5-29.0)</b>	0.00	0.71	0.03	0.75
	<b>Partially Proficient (0-16.0)</b>	0.00	0.03	0.14	0.18
<b>Expected Total</b>		0.01	0.82	0.17	

**Estimated Proportion Correctly Classified: Total = 0.85, Proficient & Above = 0.94**

**Decision Accuracy: Mathematics**

		<i>Observed Score</i>			
		<b>Advanced Proficient (26.5-33.0)</b>	<b>Proficient (14.0-26.0)</b>	<b>Partially Proficient (0-13.5)</b>	<b>Observed Total</b>
<i>True Score</i>	<b>Placement Score</b>				
	<b>Advanced Proficient (26.5-33.0)</b>	0.25	0.06	0.00	0.31
	<b>Proficient (14.0-26.0)</b>	0.05	0.49	0.02	0.56
	<b>Partially Proficient (0-13.5)</b>	0.00	0.04	0.09	0.13
<b>Expected Total</b>		0.30	0.59	0.11	

**Estimated Proportion Correctly Classified: Total = 0.83, Proficient & Above = 0.94**

**TABLE 9.2.2**

**2006 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>Advanced Proficient (31.0-43.0)</b>	<b>Proficient (18.0-30.5)</b>	<b>Partially Proficient (0-17.5)</b>	<b>Observed Total</b>
<b>Placement Score</b>					
<i>True Score</i>	<b>Advanced Proficient (31.0-43.0)</b>	0.00	0.06	0.00	0.06
	<b>Proficient (18.0-30.5)</b>	0.00	0.70	0.04	0.74
	<b>Partially Proficient (0-17.5)</b>	0.00	0.04	0.16	0.20
	<b>Expected Total</b>	0.01	0.80	0.20	

**Estimated Proportion Correctly Classified: Total = 0.86, Proficient & Above = 0.92**

**Decision Accuracy Mathematics**

		<i>Observed Score</i>			
		<b>Advanced Proficient (31.0-43.0)</b>	<b>Proficient (17.5-30.5)</b>	<b>Partially Proficient (0-17.0)</b>	<b>Observed Total</b>
<b>Placement Score</b>					
<i>True Score</i>	<b>Advanced Proficient (31.0-43.0)</b>	0.36	0.05	0.00	0.41
	<b>Proficient (17.5-30.5)</b>	0.04	0.34	0.03	0.41
	<b>Partially Proficient (0-17.0)</b>	0.00	0.03	0.14	0.18
	<b>Expected Total</b>	0.41	0.42	0.17	

**Estimated Proportion Correctly Classified: Total = 0.84, Proficient & Above = 0.94**

**TABLE 9.2.2 (Continued)**

**2006 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 (29.5-39.0)</b>	<b>Proficient (19.0-29.0)</b>	<b>Partially Proficient (0-18.5)</b>	<b>Observed Total</b>
<i>True Score</i>	<b>Advanced Proficient (29.5-39.0)</b>	0.21	0.07	0.00	0.28
	<b>Proficient (19.0-29.0)</b>	0.06	0.45	0.04	0.54
	<b>Partially Proficient (0-18.5)</b>	0.00	0.05	0.13	0.18
	<b>Expected Total</b>	0.26	0.57	0.17	

**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 200 and the standard error of measurement for the score is about 10 scale score points. We can be 95% confident that the student’s ability puts him in the range of scoring a 200 plus or minus two standard errors of measurement: that is between 180–220.

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****2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Conditional Estimate of Error at Each Cut-Score**

<b>Grade</b>	<b>Subject</b>	<b>Proficiency Level</b>	<b>Raw Score Cut</b>	<b>Theta Cut</b>	<b>Theta SE</b>	<b>Scale Score Cut</b>	<b>Estimated SE in Scale Score Points</b>
3	LAL	Proficient	16.5	-0.0373	0.222	200	9
		Advanced Proficient	29.5	1.5445	0.269	250	6
	Math	Proficient	14.0	0.2266	0.197	200	13
		Advanced Proficient	26.5	1.1358	0.214	250	9
<b>Grade</b>	<b>Subject</b>	<b>Proficiency Level</b>	<b>Raw Score Cut</b>	<b>Theta Cut</b>	<b>Theta SE</b>	<b>Scale Score Cut</b>	<b>Estimated SE in Scale Score Points</b>
4	LAL	Proficient	18.0	-0.0302	0.216	200	10
		Advanced Proficient	31.0	1.4480	0.259	250	7
	Math	Proficient	17.5	0.4778	0.165	200	12
		Advanced Proficient	31.0	1.1615	0.168	250	10
	Science	Proficient	19.0	0.02223	0.175	200	14
		Advanced Proficient	29.5	0.7014	0.201	250	11

**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 writing task responses in grade 3 in March 2006, 60.1% received exactly the same scores by the raters and 37.8% received scores that were adjacent. Thus, a total of 97.9% of the task responses required only two raters. The remaining 2.1% 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 writing tasks in March 2006, 57.3% received exactly the same scores by the raters and 39.3% 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 61.2% of the time. Resolution by a third rater was needed for 2.9% of the responses. For grade 3 Mathematics, exact agreement was obtained 87.1% of the time and resolution was needed for 1.6% of the task responses. Table 9.4.2 shows that for grade 4 Reading open-ended items, exact agreement was obtained 60.0% of the time. Resolution by a third rater was needed for 2.6% of the responses. For grade 4 Mathematics, exact agreement was obtained 85.1% of the time and resolution was needed for 1.4% of the responses. Finally, for grade 4 Science, exact agreement was obtained 84.1% of the time and resolution was needed for 1.8% of the open-ended responses.

**TABLE 9.4.1**

**2006 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	60.6	36.9	2.5
<b>Writing Total</b>	<b>60.1</b>	<b>37.8</b>	<b>2.1</b>
Writing/Picture	59.7	37.8	2.5
Writing/Poem	60.4	37.8	1.8
<b>Reading Total</b>	<b>61.2</b>	<b>35.9</b>	<b>2.9</b>
Open-Ended Item 1	57.7	38.8	3.5
Open-Ended Item 2	64.6	33.1	2.3
<b>Mathematics</b>	<b>87.1</b>	<b>11.3</b>	<b>1.6</b>
Open-Ended Item 1	86.7	11.7	1.6
Open-Ended Item 2	89.2	9.1	1.7
Open-Ended Item 3	85.3	13.1	1.6

**TABLE 9.4.2**

**2006 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>	58.9	38.2	2.9
<b>Writing Total</b>	<b>57.3</b>	<b>39.3</b>	<b>3.4</b>
Writing/Picture	52.6	42.8	4.6
Writing/Poem	62.0	35.8	2.1
<b>Reading Total</b>	<b>60.0</b>	<b>37.4</b>	<b>2.6</b>
Open-Ended Item 1	60.4	36.9	2.7
Open-Ended Item 2	58.5	37.8	3.6
Open-Ended Item 3	61.0	37.6	1.4
<b>Mathematics</b>	<b>85.1</b>	<b>13.5</b>	<b>1.4</b>
Open-Ended Item 1	81.1	18.3	0.6
Open-Ended Item 2	88.1	11.0	0.9
Open-Ended Item 3	83.7	15.2	1.2
Open-Ended Item 4	78.5	18.6	2.9
Open-Ended Item 5	94.2	4.5	1.3
<b>Science</b>	<b>84.1</b>	<b>14.1</b>	<b>1.8</b>
Open-Ended Item 1	75.7	20.8	3.5
Open-Ended Item 2	93.9	5.8	0.3
Open-Ended Item 3	82.8	15.6	1.6

## **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.

## **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." Braille students, students taking a breach form and 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

2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
Individual Student Report (ISR) – Front

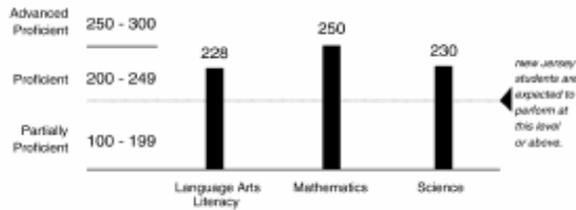
INDIVIDUAL STUDENT REPORT													
 <p>New Jersey Statewide Testing System <b>New Jersey Assessment of Skills and Knowledge</b></p> <p>Tyler M. Waters Grade 4</p>	<p>Gender: Male Date of Birth: 10/07/94</p> <p>CDS: 87-8777-877 County: METRO District: COMMENCE CITY School: BUSY STREET SCHOOL Test Date: Spring 2006</p>												
<p>This report contains information from the Spring 2006 administration of the New Jersey Assessment of Skills and Knowledge.</p> <p>In this report you will find:</p> <ul style="list-style-type: none"><li>Your child's overall score and overall proficiency level in Language Arts Literacy, Mathematics, and Science</li><li>Your child's performance in each of the content clusters on the tests</li></ul>	<p><b>About scale scores and proficiency levels</b></p> <p>Your child's scale scores on the New Jersey Assessment of Skills and Knowledge are presented to the left.</p> <p>The scale scores are based on the number of correct answers to multiple-choice questions and the number of points earned for responses to open-ended questions and writing tasks.</p> <p>The possible scale scores for each subject are from 100 to 300. If the scale score is below 200, your child scored "Partially Proficient" in that subject. If the scale score is at or above 200, but below 250, your child scored "Proficient" in that subject. If the scale score is at or above 250, your child scored "Advanced Proficient" in that subject.</p> <p>Under the standards set by New Jersey, students are expected to perform at the Proficient level or above. For a definition of Performance Level Descriptors for Proficient and Advanced Proficient students, please refer to the 2006 <i>Score Interpretation Manual</i>. This manual is located at: <a href="http://www.nj.gov/njded/assessment/es/">www.nj.gov/njded/assessment/es/</a></p> <p>If needed, please contact the Office of Evaluation and Assessment for assistance.</p>												
<p><b>Your child's scores and proficiency levels</b></p>  <table border="1"><thead><tr><th>Subject</th><th>Score</th><th>Proficiency Level</th></tr></thead><tbody><tr><td>Language Arts Literacy</td><td>228</td><td>Proficient</td></tr><tr><td>Mathematics</td><td>250</td><td>Advanced Proficient</td></tr><tr><td>Science</td><td>230</td><td>Proficient</td></tr></tbody></table> <p><b>Language Arts Literacy</b></p> <p>Your child scored in the Proficient level and has met the New Jersey standard of 200 or above in Language Arts Literacy. Reading with your child daily will help your child continue to develop and improve in language arts.</p> <p><b>Mathematics</b></p> <p>Your child scored in the Advanced Proficient level and has scored well above the New Jersey standard of 200 in Mathematics. To help your child continue to excel in mathematics, encourage your child to apply math concepts to daily activities.</p> <p><b>Science</b></p> <p>Your child scored in the Proficient level and has met the New Jersey standard of 200 or above in Science. Encourage your child to observe, question, and make predictions about the natural world to continue to develop in science.</p>	Subject	Score	Proficiency Level	Language Arts Literacy	228	Proficient	Mathematics	250	Advanced Proficient	Science	230	Proficient	
Subject	Score	Proficiency Level											
Language Arts Literacy	228	Proficient											
Mathematics	250	Advanced Proficient											
Science	230	Proficient											
<p><i>Please remember that a single test can provide only limited information. To learn more, review your child's report card and talk with your child's teacher.</i></p>													

Figure 10.1.2

2006 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>	25.0	43.0	17.5
<b>Writing</b>	9.0	20.0	8.6
Writing about Pictures	4.0	10.0	N/A
Writing about Poems	5.0	10.0	N/A
<b>Reading</b>	16.0	23.0	8.9
Working with Text	7.0	5.0	3.1
Analyzing Text	9.0	18.0	5.7

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 subcluster, Working with Text, refers to questions that measure students' understanding of ideas and information in the text. The Reading subcluster, Analyzing Text, focuses on the student's analysis of what he/she has 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>	33.0	43.0	20.0
Number and Numerical Operations	7.5	13.0	6.0
Geometry and Measurement	8.0	10.0	4.8
Patterns and Algebra	7.5	10.0	4.0
Data Analysis, Probability, and Discrete Mathematics	10.0	10.0	5.1
Problem Solving	24.5	32.0	13.3

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>	25.5	39.0	19.0
Life Science	10.5	15.0	7.6
Physical Science	8.0	12.0	5.9
Earth Science	7.0	12.0	5.5
Application	20.5	31.0	16.3

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 Means' 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. 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. These reports provide aggregated data for the district. In addition, these reports include 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 ASK3 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

2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
School Report - Performance by Demographic Groups

		Students				Partially Proficient		Proficient		Advanced Proficient		Scale Score Mean
		Enrolled <sup>1</sup>	APA Students <sup>2</sup>	Not Present	Valid Scale Scores	Number	Percent	Number	Percent	Number	Percent	
<b>PERFORMANCE BY DEMOGRAPHIC GROUP</b>												
<b>Total Students</b>	72	2	1	0	69	18	26.1	50	72.5	1	1.4	209.6
<b>General Education<sup>3</sup></b>	59	0	0	0	59	15	25.4	43	72.9	1	1.7	211.5
<b>Special Education</b>	7	2	0	0	5	2	40.0	3	60.0	0	0.0	195.0
<b>Limited English Proficient:</b>	7	1	1	0	5	1	20.0	4	80.0	0	0.0	202.4
<b>Gender<sup>4</sup></b>												
<b>Female</b>	38	2	1	0	35	8	22.9	26	74.3	1	2.9	213.2
<b>Male</b>	34	0	0	0	34	10	29.4	24	70.6	0	0.0	205.9
<b>Ethnicity</b>												
<b>American Indian</b>	0	0	0	0	0	-	-	-	-	-	-	-
<b>Asian</b>	1	0	1	0	0	-	-	-	-	-	-	-
<b>Black</b>	47	1	0	0	46	12	26.1	33	71.7	1	2.2	210.5
<b>Hispanic</b>	23	1	0	0	22	5	22.7	17	77.3	0	0.0	209.0
<b>Pacific Islander</b>	0	0	0	0	0	-	-	-	-	-	-	-
<b>White</b>	1	0	0	0	1	1	100.0	0	0.0	0	0.0	182.0
<b>Other<sup>5</sup></b>	0	0	0	0	0	-	-	-	-	-	-	-
<b>Economic Status</b>												
<b>Economically Disadvantaged</b>	41	1	0	0	40	10	25.0	30	75.0	0	0.0	208.6
<b>Non-Economically Disadvantaged</b>	31	1	1	0	29	8	27.6	20	69.0	1	3.4	211.0
<b>Migrant Status</b>												
<b>Migrant</b>	0	0	0	0	0	-	-	-	-	-	-	-
<b>Non-Migrant</b>	72	2	1	0	69	18	26.1	50	72.5	1	1.4	209.6

NOTE: Percentages may not total 100 due to rounding.  
- No students in this category.

<sup>1</sup> Enrollment is based on the number of scannable test booklets.  
<sup>2</sup> Includes Special Education students who did not take the NJ ASK and are required to take the Alternate Proficiency Assessment (APA).  
<sup>3</sup> General Education category excludes Special Education and Limited English Proficient students.  
<sup>4</sup> Excludes students who did not have gender coded.  
<sup>5</sup> Includes students who did not have ethnicity coded and students who had more than one ethnicity coded.

See page 2 for Cluster information 

Figure 10.2.2

2006 New Jersey Assessment of Skills and Knowledge (NJ ASK)  
School Report - Cluster Score Means

New Jersey Statewide Testing System New Jersey Assessment of Skills and Knowledge		Summary of School Cluster Performance: Science Cycle I Report (Preliminary Data) Grade 4			CDS: 87-8777-877 County: METRO District: COMMERCE CITY School: BUSY STREET SCHOOL Test Date: Spring 2006 Page: 2 of 2	
<b>CLUSTER MEANS<sup>1</sup></b>						
	Life Science	Physical Science	Earth Science	Application	Total	
<b>Total Points Possible</b>	15.0	12.0	12.0	31.0	39.0	
<b>Just Proficient Means<sup>2</sup></b>	7.6	5.9	5.5	16.3	19.0	
<b>Total Students</b>	8.7	7.5	6.8	19.8	23.0	
<b>General Education Students<sup>3</sup></b>	9.0	7.9	7.2	20.7	24.1	
<b>Special Education Students</b>	7.3	5.7	4.9	15.8	17.9	
<b>Limited English Proficient Students</b>	7.0	7.0	5.0	16.0	19.0	
<b>Title I Students</b>	0.0	0.0	0.0	0.0	0.0	
<b>School Mean</b>	8.7	7.5	6.8	19.8	23.0	
<b>District Mean</b>	8.8	7.2	7.3	19.7	23.3	
<b>Students coded both SE and LEP</b>	0					
<small>           - No Students in this category.  <sup>1</sup> Cluster means exclude students who took large-print, 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 scores are 200.  <sup>3</sup> General Education category excludes Special Education and Limited English Proficient students.         </small>						

Special Reports

Special 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 summarize 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 summarize 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 summarize 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**

The Title I Reports summarize 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 2006 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 2006 are also provided in the State Summary.

### **10.4 Interpreting Reports**

The 2006 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.

## **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 are 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 2006**

The spring 2006 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 2006. From a total third grade student population of 102,583, valid scores were obtained in Language Arts Literacy from 100,680 students, with 259 students not present and 1034 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 101,602 students, with 243 not present and 140 voids.

This executive summary includes two tables summarizing statewide test results for the 2006 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: all, special education, and limited English proficient (LEP) students. LEP is further broken out by the following groups: LEP current and former, LEP current, and LEP former. 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 score 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 students with scannable test booklets. Also, students coded as multiple ethnicity and those whose ethnicity was unspecified are counted as Other. The percentage of students in the combined category, 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 2006 third grade assessment results.

#### Grade 3 Language Arts Literacy Results:

- Of the 100,680 grade 3 students with valid scale scores in Language Arts Literacy in spring 2006, 17.5% scored in Partially Proficient, 79.0% scored in Proficient and 3.4% scored in Advanced Proficient (Table A.3.1).
- **Special Education** 52.8% of special education grade 3 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- **Limited English Proficient, Current and Former** 58.0% of total limited English proficient grade 3 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- **Current Limited English Proficient** 48.2% of current limited English proficient grade 3 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- **Former Limited English Proficient** 75.3% of former limited English proficient grade 3 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- **Gender** 86.5% of female compared to 78.6% of male grade 3 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.3.1).
- **Ethnicity** For performance by grade 3 ethnic groups in 2006, students scoring in Proficient or Advanced Proficient in Language Arts Literacy ranged from 92.0% of Asian students to 66.4% 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** 66.7% of economically disadvantaged grade 3 students in 2006 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 2006 was 218.3 (Table A.3.1).

#### Grade 3 Mathematics Results:

- Of the 101,602 grade 3 students with valid scale scores in Mathematics in spring 2006, 13.1% scored in Partially Proficient, 55.7% scored in Proficient and 31.1% scored in Advanced Proficient (Table A.3.2).
- **Special Education** 70.9% of special education grade 3 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).

- **Limited English Proficient, Current and Former** 71.9% of total limited English proficient grade 3 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).
- **Current Limited English Proficient** 66.0% of current limited English proficient grade 3 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).
- **Former Limited English Proficient** 84.5% of former limited English proficient grade 3 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).
- **Gender** 86.9% of both female and male grade 3 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.3.2).
- **Ethnicity** For performance by grade 3 ethnic groups in 2006, students scoring in Proficient or Advanced Proficient in Mathematics ranged from 95.6% of Asian students to 72.4% 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** 75.4% of economically disadvantaged grade 3 students in 2006 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 2006 was 231.6 (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 2006 -- 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>Percent Partially Proficient</b>	<b>Percent Proficient</b>	<b>Percent Advanced Proficient</b>
Total	All Students	102583	259	1034	100680	218.3	17.5%	79.0%	3.4%
Education Status	Special Education Students	14920	62	176	14072	199.1	47.2%	52.1%	0.7%
Limited English Proficient	Limited English Proficient Students (Current and Former)	6715	74	698	5930	201.9	42.0%	57.2%	0.8%
	Current Limited English Proficient Students	4565	72	697	3786	196.3	51.8%	47.5%	0.7%
	Former Limited English Proficient Students	2150	2	1	2144	211.9	24.7%	74.3%	1.1%
Gender	Female	49883	99	424	49151	222.1	13.5%	81.3%	5.2%
	Male	52670	146	610	51516	214.7	21.4%	76.9%	1.7%
Ethnicity	American Indian	113	5	0	107	217.5	18.7%	79.4%	1.9%
	Asian	7818	26	131	7623	227.6	8.0%	83.6%	8.4%
	Black	17797	60	193	17407	206.8	33.6%	65.6%	0.9%
	Hispanic	19261	83	516	18542	208.9	29.6%	69.4%	1.0%
	Pacific Islander	325	0	3	320	224.6	9.1%	85.0%	5.9%
	White	56468	64	172	55935	223.8	9.9%	85.7%	4.4%
	Other	801	21	19	746	217.3	17.8%	79.8%	2.4%
Economic Status	Economically Disadvantaged	31112	111	586	30243	206.7	33.3%	66.0%	0.7%
	Non-Economically Disadvantaged	71471	148	448	70437	223.3	10.8%	84.6%	4.6%

**TABLE A.3.2**

**STATEWIDE PERFORMANCE BY DEMOGRAPHIC GROUPS SPRING 2006 -- 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>Percent Partially Proficient</b>	<b>Percent Proficient</b>	<b>Percent Advanced Proficient</b>
Total	All Students	102583	243	140	101602	231.6	13.1%	55.7%	31.1%
Education Status	Special Education Students	14920	86	67	14169	216.3	29.1%	53.7%	17.2%
Limited English Proficient	Limited English Proficient Students (Current and Former)	6715	17	9	6676	216.8	28.1%	55.0%	17.0%
	Current Limited English Proficient Students	4565	17	9	4529	211.7	34.0%	53.0%	13.0%
	Former Limited English Proficient Students	2150	0	0	2147	227.6	15.5%	59.2%	25.3%
Gender	Female	49883	102	38	49535	231.2	13.1%	56.8%	30.1%
	Male	52670	137	101	52045	232.0	13.1%	54.8%	32.1%
Ethnicity	American Indian	113	1	0	111	227.0	18.9%	53.2%	27.9%
	Asian	7818	11	5	7764	245.7	4.4%	42.3%	53.3%
	Black	17797	93	56	17513	215.9	27.6%	58.2%	14.3%
	Hispanic	19261	49	20	19073	222.3	21.0%	59.3%	19.6%
	Pacific Islander	325	0	1	322	240.0	6.8%	49.4%	43.8%
	White	56468	76	56	56047	237.7	7.2%	55.7%	37.1%
	Other	801	13	2	772	231.7	15.2%	49.6%	35.2%
Economic Status	Economically Disadvantaged	31112	123	68	30753	218.9	24.6%	58.6%	16.8%
	Non-Economically Disadvantaged	71471	120	72	70849	237.1	8.2%	54.5%	37.3%

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

### **Grade 4 New Jersey Assessment of Knowledge and Skills Spring 2006**

The spring 2006 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 2006. From a total fourth grade student population of 102,725, valid scores were obtained in Language Arts Literacy from 100,880 students, with 275 students not present and 959 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 101,659 students, with 236 not present and 242 voids. Valid scores were obtained in Science from 101,636 students, with 437 not present and 99 voids.

This executive summary includes three tables summarizing statewide test results for the 2006 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: all, special education, and limited English proficient (LEP) students. LEP is further broken out by the following groups: LEP current and former, LEP current, and LEP former. 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 score 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 students with scannable test booklets. Also, students coded as multiple ethnicity and those whose ethnicity was unspecified are counted as Other. The percentage of students in the combined category, 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 2006 fourth grade assessment results.

#### Grade 4 Language Arts Literacy Results:

- Of the 100,880 grade 4 students with valid scale scores in Language Arts Literacy in spring 2006, 20.0% scored in Partially Proficient, 76.2% scored in Proficient and 3.8% scored in Advanced Proficient (Table A.4.1).
- **Special Education** 48.8% of special education grade 4 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- **Limited English Proficient, Current and Former** 53.5% of total limited English proficient grade 4 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- **Current Limited English Proficient** 44.4% of current limited English proficient grade 4 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- **Former Limited English Proficient** 67.7% of former limited English proficient grade 4 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- **Gender** 84.4% of female compared to 75.8% of male grade 4 students in 2006 scored in Proficient or Advanced Proficient in Language Arts Literacy (Table A.4.1).
- **Ethnicity** For performance by grade 4 ethnic groups in 2006, students scoring in Proficient or Advanced Proficient in Language Arts Literacy ranged from 91.2% of Asian students to 62.9% of 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** 62.7% of economically disadvantaged grade 4 students in 2006 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 2006, was 215.6 (Table A.4.1).

#### Grade 4 Mathematics Results:

- Of the 101,659 grade 4 students with valid scale scores in Mathematics in spring 2006, 17.6% scored in Partially Proficient, 41.2% scored in Proficient and 41.1% scored in Advanced Proficient (Table A.4.2).

- **Special Education** 59.5% of special education grade 4 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).
- **Limited English Proficient, Current and Former** 62.3% of total limited English proficient grade 4 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).
- **Current Limited English Proficient** 55.4% of current limited English proficient grade 4 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).
- **Former Limited English Proficient** 75.5% of former limited English proficient grade 4 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).
- **Gender** 82.2% of female compared to 82.5% of male grade 4 students in 2006 scored in Proficient or Advanced Proficient in Mathematics (Table A.4.2).
- **Ethnicity** For performance by grade 4 ethnic groups in 2006, students scoring in Proficient or Advanced Proficient in Mathematics ranged from 93.7% of Asian students to 63.4% of 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** 67.5% of economically disadvantaged grade 4 students in 2006 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 2006 was 232.8 (Table A.4.2).

#### Grade 4 Science Results:

- Of the 101,636 grade 4 students with valid scale scores in Science in spring 2006, 17.7% scored in Partially Proficient, 54.5% scored in Proficient and 27.8% scored in Advanced Proficient (Table A.4.3).
- **Special Education** 69.0% of special education grade 4 students in 2006 scored in Proficient or Advanced Proficient in Science (Table A.4.3).
- **Limited English Proficient, Current and Former** 51.0% of total limited English proficient grade 4 students in 2006 scored in Proficient or Advanced Proficient in Science (Table A.4.3).
- **Current Limited English Proficient** 42.7% of current limited English proficient grade 4 students in 2006 scored in Proficient or Advanced Proficient in Science (Table A.4.3).

- **Former Limited English Proficient** 66.8% of former limited English proficient grade 4 students in 2006 scored in Proficient or Advanced Proficient in Science (Table A.4.3).
- **Gender** 80.7% of female compared to 83.8% of male grade 4 students in 2006 scored in Proficient or Advanced Proficient in Science (Table A.4.3).
- **Ethnicity** For performance by grade 4 ethnic groups in 2006, students scoring in Proficient or Advanced Proficient in Science ranged from 91.7% of Asian students to 63.0% of African American students. The percentage of Advanced Proficient and Proficient for all other race/ethnic groups fell between Asians and African Americans (Table A.4.3).
- **Economic Status** 64.6% of economically disadvantaged grade 4 students in 2006 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 2006 was 227.9 (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 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 2006 -- 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>Percent Partially Proficient</b>	<b>Percent Proficient</b>	<b>Percent Advanced Proficient</b>
Total	All Students	102725	275	959	100880	215.6	20.0%	76.2%	3.8%
Education Status	Special Education Students	16437	70	203	15553	194.3	51.2%	48.3%	0.5%
Limited English Proficient	Limited English Proficient Students (Current and Former)	5712	79	662	4960	197.2	46.5%	52.5%	1.0%
	Current Limited English Proficient Students	3762	76	658	3017	191.1	55.6%	43.6%	0.8%
	Former Limited English Proficient Students	1950	3	4	1943	206.7	32.3%	66.3%	1.3%
Gender	Female	50163	102	393	49457	219.8	15.6%	78.5%	5.8%
	Male	52532	163	562	51411	211.6	24.2%	73.9%	1.9%
Ethnicity	American Indian	117	0	0	117	212.1	27.4%	69.2%	3.4%
	Asian	7831	14	102	7684	226.0	8.8%	81.9%	9.2%
	Black	17610	69	153	17262	203.5	37.1%	62.0%	0.9%
	Hispanic	18537	96	484	17834	205.4	33.3%	65.7%	1.0%
	Pacific Islander	235	0	1	233	221.8	9.4%	82.8%	7.7%
	White	57665	79	195	57077	221.1	12.2%	83.0%	4.9%
	Other	730	17	24	673	216.0	22.0%	73.6%	4.5%
Economic Status	Economically Disadvantaged	30336	133	557	29437	203.1	37.3%	61.8%	0.9%
	Non-Economically Disadvantaged	72389	142	402	71443	220.8	12.9%	82.1%	5.1%

**TABLE A.4.2**

**STATEWIDE PERFORMANCE BY DEMOGRAPHIC GROUPS SPRING 2006 -- 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>Percent Partially Proficient</b>	<b>Percent Proficient</b>	<b>Percent Advanced Proficient</b>
Total	All Students	102725	236	242	101659	232.8	17.6%	41.2%	41.1%
Education Status	Special Education Students	16437	84	126	15639	208.9	40.5%	39.5%	20.0%
Limited English Proficient	Limited English Proficient Students (Current and Former)	5712	21	13	5668	212.4	37.7%	39.7%	22.5%
	Current Limited English Proficient Students	3762	17	10	3725	205.8	44.6%	37.4%	17.9%
	Former Limited English Proficient Students	1950	4	3	1943	224.9	24.5%	44.2%	31.3%
Gender	Female	50163	90	94	49768	232.2	17.8%	42.4%	39.7%
	Male	52532	133	148	51878	233.5	17.5%	40.1%	42.4%
Ethnicity	American Indian	117	0	0	117	228.9	22.2%	37.6%	40.2%
	Asian	7831	6	8	7786	251.6	6.3%	27.5%	66.2%
	Black	17610	79	94	17315	211.2	36.6%	45.0%	18.4%
	Hispanic	18537	60	47	18312	220.4	27.7%	45.7%	26.6%
	Pacific Islander	235	0	0	234	243.0	7.7%	38.0%	54.3%
	White	57665	76	91	57198	240.8	10.2%	40.6%	49.2%
	Other	730	15	2	697	232.9	19.9%	37.2%	42.9%
Economic Status	Economically Disadvantaged	30336	121	137	29884	215.7	32.5%	44.8%	22.7%
	Non-Economically Disadvantaged	72389	115	105	71775	239.9	11.5%	39.8%	48.8%

**TABLE A.4.3**

**STATEWIDE PERFORMANCE BY DEMOGRAPHIC GROUPS SPRING 2006 -- 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>Percent Partially Proficient</b>	<b>Percent Proficient</b>	<b>Percent Advanced Proficient</b>
Total	All Students	102725	437	99	101636	227.9	17.7%	54.5%	27.8%
Education Status	Special Education Students	16437	146	60	15678	214.3	31.0%	53.2%	15.8%
Limited English Proficient	Limited English Proficient Students (Current and Former)	5712	43	8	5652	200.0	49.0%	42.5%	8.5%
	Current Limited English Proficient Students	3762	35	8	3710	193.7	57.3%	35.7%	7.0%
	Former Limited English Proficient Students	1950	8	0	1942	212.0	33.2%	55.4%	11.4%
Gender	Female	50163	179	30	49767	225.7	19.3%	55.8%	24.9%
	Male	52532	250	69	51851	230.0	16.2%	53.2%	30.6%
Ethnicity	American Indian	117	0	0	117	225.0	20.5%	57.3%	22.2%
	Asian	7831	13	6	7781	241.0	8.3%	46.3%	45.3%
	Black	17610	141	35	17315	208.9	37.0%	53.2%	9.8%
	Hispanic	18537	110	17	18296	212.4	32.5%	54.6%	12.9%
	Pacific Islander	235	0	0	234	234.7	11.1%	53.4%	35.5%
	White	57665	161	37	57195	236.8	8.5%	56.0%	35.6%
	Other	730	12	4	698	227.0	20.3%	49.4%	30.2%
Economic Status	Economically Disadvantaged	30336	216	53	29875	210.1	35.4%	53.5%	11.1%
	Non-Economically Disadvantaged	72389	221	46	71761	235.3	10.4%	54.8%	34.8%

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

**TABLE B.3.1**

**NEW JERSEY STATEWIDE TESTING SYSTEM SPRING 2006  
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 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	13,416	72.1	27.9	71.1	1.0	210.2
B	8,341	81.9	18.1	80.4	1.5	215.9
CD	7,734	87.3	12.7	84.9	2.5	219.8
DE	10,568	91.7	8.3	88.3	3.5	223.2
FG	10,362	94.1	5.9	90.3	3.8	225.6
GH	11,431	94.8	5.2	89.5	5.3	227.4
I	16,196	96.5	3.5	89.3	7.2	229.8
J	3,738	97.5	2.5	88.7	8.8	232.0

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,344	25.4	74.6	25.3	0.0	181.6
B	1,449	41.7	58.3	41.6	0.1	193.0
CD	1,356	41.0	59.0	40.6	0.4	193.4
DE	1,869	59.0	41.0	58.5	0.5	202.4
FG	1,817	59.9	40.1	59.1	0.8	203.2
GH	1,876	61.1	38.9	60.2	1.0	204.4
I	2,738	69.9	30.1	68.5	1.5	209.6
J	476	79.4	20.6	77.3	2.1	214.4

- 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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
 BY DISTRICT FACTOR GROUP**

**LANGUAGE ARTS LITERACY SECTION – Grade 3**

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,087	44.1	55.9	43.7	0.4	193.2
B	490	41.2	58.8	41.0	0.2	193.0
CD	254	43.3	56.7	42.9	0.4	194.9
DE	220	55.5	44.5	55.5	0.0	200.4
FG	165	57.0	43.0	56.4	0.6	201.1
GH	243	60.9	39.1	59.7	1.2	204.0
I	186	64.5	35.5	62.4	2.2	205.6
J	107	93.5	6.5	87.9	5.6	229.0

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	17,635	63.2	36.8	62.4	0.8	204.8
B	10,252	74.4	25.6	73.2	1.2	211.7
CD	9,317	79.5	20.5	77.4	2.1	215.4
DE	12,633	86.4	13.6	83.4	3.0	219.8
FG	12,322	88.6	11.4	85.3	3.3	222.0
GH	13,527	89.6	10.4	85.0	4.6	223.9
I	19,101	92.4	7.6	86.1	6.3	226.7
J	4,310	95.5	4.5	87.5	8.0	230.0

- 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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**LANGUAGE ARTS LITERACY SECTION – Grade 3**

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

	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL EDUCATION STUDENTS <sup>b</sup>	1,080	72.3	27.7	70.1	2.2	212.1
SPECIAL EDUCATION STUDENTS <sup>c</sup>	86	36.0	64.0	36.0	0.0	189.0
CURRENT LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3	0.0	100.0	0.0	0.0	194.0
FORMER LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	0	--	--	--	--	--
TOTAL LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3	0.0	100.0	0.0	0.0	194.0
TOTAL <sup>e</sup> STUDENTS	1,168	69.5	30.5	67.5	2.1	210.3

**STATEWIDE RESULTS**

	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	83,189	88.8	11.2	84.8	4.0	222.4
SPECIAL <sup>c</sup> EDUCATION STUDENTS	14,072	52.8	47.2	52.1	0.7	199.1
CURRENT LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3,786	48.2	51.8	47.5	0.7	196.3
FORMER LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	2,144	75.3	24.7	74.3	1.1	211.9
TOTAL LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	5,930	58.0	42.0	57.2	0.8	201.9
TOTAL <sup>e</sup> STUDENTS	100,680	82.5	17.5	79.0	3.4	218.3

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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) 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 2006  
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 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	13,460	78.1	21.9	58.6	19.4	221.8
B	8,365	85.0	15.0	61.0	24.1	227.7
CD	7,741	89.2	10.8	61.0	28.2	231.6
DE	10,567	93.1	6.9	59.6	33.5	236.2
FG	10,373	94.5	5.5	57.1	37.4	238.6
GH	11,434	95.0	5.0	52.6	42.4	241.0
I	16,206	96.4	3.6	51.8	44.7	243.0
J	3,739	97.8	2.2	44.4	53.4	247.4

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,378	49.5	50.5	40.8	8.7	200.0
B	1,469	64.1	35.9	50.9	13.2	211.5
CD	1,362	63.9	36.1	52.3	11.5	209.7
DE	1,874	74.8	25.2	54.6	20.2	219.8
FG	1,826	76.9	23.1	59.6	17.3	219.6
GH	1,885	77.5	22.5	58.4	19.1	220.6
I	2,748	83.2	16.8	59.3	23.8	226.5
J	479	87.3	12.7	55.3	31.9	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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
 BY DISTRICT FACTOR GROUP**

**MATHEMATICS SECTION – Grade 3**

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,413	64.2	35.8	51.5	12.6	210.4
B	609	60.8	39.2	53.5	7.2	206.5
CD	292	70.2	29.8	63.0	7.2	210.6
DE	268	70.9	29.1	55.2	15.7	216.0
FG	219	66.7	33.3	52.1	14.6	211.2
GH	310	67.4	32.6	53.9	13.5	212.7
I	250	74.0	26.0	51.2	22.8	221.4
J	125	90.4	9.6	54.4	36.0	236.5

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	18,031	72.8	27.2	55.5	17.3	217.7
B	10,411	80.7	19.3	59.1	21.6	224.2
CD	9,368	85.0	15.0	59.7	25.2	227.9
DE	12,684	90.0	10.0	58.8	31.2	233.4
FG	12,396	91.5	8.5	57.4	34.1	235.4
GH	13,604	92.0	8.0	53.4	38.6	237.6
I	19,185	94.3	5.7	52.8	41.4	240.4
J	4,332	96.5	3.5	45.8	50.6	245.4

- 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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**MATHEMATICS SECTION – Grade 3**

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

	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL EDUCATION STUDENTS <sup>b</sup>	1,080	77.9	22.1	57.8	20.1	221.7
SPECIAL EDUCATION STUDENTS <sup>c</sup>	87	62.1	37.9	49.4	12.6	210.2
CURRENT LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3	33.3	66.7	33.3	0.0	194.0
FORMER LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	0	--	--	--	--	--
TOTAL LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3	33.3	66.7	33.3	0.0	194.0
TOTAL <sup>e</sup> STUDENTS	1,169	76.6	23.4	57.1	19.5	220.8

**STATEWIDE RESULTS**

	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL EDUCATION STUDENTS <sup>b</sup>	83,288	90.6	9.4	56.2	34.4	235.2
SPECIAL EDUCATION STUDENTS <sup>c</sup>	14,169	70.9	29.1	53.7	17.2	216.3
CURRENT LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	4,529	66.0	34.0	53.0	13.0	211.7
FORMER LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	2,147	84.5	15.5	59.2	25.3	227.6
TOTAL LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	6,676	71.9	28.1	55.0	17.0	216.8
TOTAL <sup>e</sup> STUDENTS	101,602	86.9	13.1	55.7	31.1	231.6

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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) 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 2006  
 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 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	15,847	72.8	27.2	71.9	0.9	210.5
	ALL OTHERS	67,342	92.6	7.4	87.8	4.7	225.2
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	2,719	27.4	72.6	27.3	0.1	183.0
	ALL OTHERS	11,353	58.9	41.1	58.0	0.9	203.0
CURRENT <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	2,268	43.7	56.3	43.3	0.4	193.2
	ALL OTHERS	1,518	54.9	45.1	53.8	1.1	200.9
FORMER <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	1,123	71.2	28.8	70.5	0.7	208.7
	ALL OTHERS	1,021	79.8	20.2	78.4	1.5	215.4
TOTAL <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	3,391	52.8	47.2	52.3	0.5	198.4
	ALL OTHERS	2,539	64.9	35.1	63.7	1.3	206.7
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	20,614	64.2	35.8	63.4	0.8	205.4
	ALL OTHERS	80,065	87.2	12.8	83.0	4.1	221.7

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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) LIMITED ENGLISH PROFICIENT STUDENTS ONLY.

e. INCLUDES ALL STUDENTS TESTED.

NOTE: PERCENTAGES MAY NOT TOTAL 100 DUE TO ROUNDING

**TABLE B.3.3 (continued)**

**NEW JERSEY STATEWIDE TESTING SYSTEM SPRING 2006  
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**

MATHEMATICS SECTION		NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	15,905	78.3	21.7	58.5	19.8	222.1
	ALL OTHERS	67,383	93.5	6.5	55.6	37.8	238.2
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	2,756	51.3	48.7	42.5	8.9	201.2
	ALL OTHERS	11,413	75.6	24.4	56.4	19.2	219.9
CURRENT <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	2,628	64.3	35.7	52.5	11.7	210.0
	ALL OTHERS	1,901	68.3	31.7	53.6	14.8	214.0
FORMER <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	1,126	80.5	19.5	57.9	22.6	224.3
	ALL OTHERS	1,021	89.0	11.0	60.7	28.3	231.3
TOTAL <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	3,754	69.1	30.9	54.2	15.0	214.3
	ALL OTHERS	2,922	75.6	24.4	56.1	19.5	220.0
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	21,059	73.3	26.7	55.8	17.5	218.1
	ALL OTHERS	80,543	90.4	9.6	55.7	34.7	235.1

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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) 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 SYSTEMSPRING 2006  
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 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	12,586	70.0	30.0	69.0	1.0	208.2
B	7,948	78.8	21.2	77.2	1.6	213.5
CD	7,778	83.9	16.1	81.3	2.6	216.7
DE	10,676	88.7	11.3	85.2	3.4	220.1
FG	10,399	91.8	8.2	87.7	4.1	222.6
GH	11,686	93.3	6.7	87.1	6.2	225.1
I	16,511	95.9	4.1	87.6	8.4	228.7
J	3,651	97.4	2.6	86.6	10.8	231.2

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,679	23.9	76.1	23.9	0.0	176.5
B	1,694	34.9	65.1	34.7	0.2	187.2
CD	1,550	37.7	62.3	37.5	0.2	187.2
DE	2,036	52.3	47.7	51.9	0.4	197.2
FG	1,965	57.0	43.0	56.4	0.6	199.8
GH	2,014	59.5	40.5	58.7	0.8	202.0
I	2,887	67.2	32.8	66.1	1.1	205.4
J	531	75.5	24.5	73.6	1.9	210.5

- 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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
 BY DISTRICT FACTOR GROUP**

**LANGUAGE ARTS LITERACY SECTION – Grade 4**

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	1,622	40.8	59.2	40.7	0.1	187.2
B	396	32.3	67.7	32.1	0.3	186.3
CD	182	35.2	64.8	35.2	0.0	186.6
DE	139	46.0	54.0	46.0	0.0	192.8
FG	136	41.9	58.1	41.9	0.0	192.3
GH	221	64.7	35.3	62.4	2.3	204.5
I	166	65.7	34.3	62.7	3.0	205.4
J	121	88.4	11.6	79.3	9.1	224.0

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	16,730	60.3	39.7	59.5	0.8	201.4
B	10,009	69.7	30.3	68.4	1.3	208.1
CD	9,503	75.5	24.5	73.4	2.1	211.3
DE	12,833	82.5	17.5	79.6	2.9	216.2
FG	12,489	85.9	14.1	82.4	3.5	218.8
GH	13,903	88.1	11.9	82.7	5.4	221.5
I	19,552	91.4	8.6	84.2	7.2	225.1
J	4,286	94.5	5.5	84.8	9.6	228.5

- 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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**LANGUAGE ARTS LITERACY SECTION – Grade 4**

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

	NUMBER TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL EDUCATION STUDENTS <sup>b</sup>	1,029	67.2	32.8	65.1	2.0	208.1
SPECIAL EDUCATION STUDENTS <sup>c</sup>	128	23.4	76.6	23.4	0.0	182.7
CURRENT LIMITED ENGLISH PROFICIENT <sup>d</sup> STUDENTS	6	33.3	66.7	33.3	0.0	190.5
FORMER LIMITED ENGLISH PROFICIENT <sup>d</sup> STUDENTS	0	--	--	--	--	--
TOTAL LIMITED ENGLISH PROFICIENT <sup>d</sup> STUDENTS	6	33.3	66.7	33.3	0.0	190.5
TOTAL STUDENTS <sup>e</sup>	1,163	62.2	37.8	60.4	1.8	205.2

**STATEWIDE RESULTS**

	NUMBER TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL EDUCATION STUDENTS <sup>b</sup>	82,580	87.0	13.0	82.4	4.6	220.4
SPECIAL EDUCATION STUDENTS <sup>c</sup>	15,553	48.8	51.2	48.3	0.5	194.3
CURRENT LIMITED ENGLISH PROFICIENT <sup>d</sup> STUDENTS	3,017	44.4	55.6	43.6	0.8	191.1
FORMER LIMITED ENGLISH PROFICIENT <sup>d</sup> STUDENTS	1,943	67.7	32.3	66.3	1.3	206.7
TOTAL LIMITED ENGLISH PROFICIENT <sup>d</sup> STUDENTS	4,960	53.5	46.5	52.5	1.0	197.2
TOTAL STUDENTS <sup>e</sup>	100,880	80.0	20.0	76.2	3.8	215.6

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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) 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 2006  
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 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	12,589	72.5	27.5	44.9	27.7	221.2
B	7,950	81.8	18.2	49.0	32.7	228.8
CD	7,776	85.8	14.2	47.2	38.6	234.0
DE	10,674	89.5	10.5	44.3	45.2	239.0
FG	10,401	91.2	8.8	42.8	48.4	241.5
GH	11,681	92.8	7.2	39.9	52.9	244.5
I	16,514	95.8	4.2	34.7	61.2	249.9
J	3,650	97.5	2.5	29.9	67.6	253.9

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,705	37.3	62.7	29.1	8.2	188.3
B	1,712	51.2	48.8	35.8	15.4	201.3
CD	1,567	52.8	47.2	38.3	14.5	201.9
DE	2,033	63.8	36.2	39.2	24.6	213.8
FG	1,964	65.5	34.5	43.8	21.6	213.4
GH	2,025	67.3	32.7	44.6	22.7	215.9
I	2,900	73.6	26.4	45.4	28.1	222.0
J	534	79.4	20.6	43.8	35.6	229.2

- 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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
 BY DISTRICT FACTOR GROUP**

**MATHEMATICS SECTION – Grade 4**

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	1,931	53.1	46.9	37.2	15.8	203.7
B	506	47.4	52.6	35.6	11.9	197.5
CD	229	52.4	47.6	38.4	14.0	203.5
DE	191	56.5	43.5	36.6	19.9	209.2
FG	175	54.9	45.1	38.9	16.0	202.5
GH	294	63.9	36.1	38.8	25.2	214.1
I	222	71.2	28.8	41.0	30.2	220.4
J	135	85.2	14.8	40.7	44.4	235.6

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	17,054	65.1	34.9	41.6	23.5	214.3
B	10,139	75.0	25.0	46.2	28.8	222.7
CD	9,565	79.6	20.4	45.6	34.1	228.1
DE	12,878	85.0	15.0	43.4	41.6	234.7
FG	12,528	86.7	13.3	42.9	43.8	236.6
GH	13,983	88.6	11.4	40.6	48.0	239.8
I	19,624	92.3	7.7	36.4	56.0	245.5
J	4,301	95.0	5.0	32.0	63.0	250.5

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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**MATHEMATICS SECTION – Grade 4**

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

	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL EDUCATION STUDENTS <sup>b</sup>	1,031	62.9	37.1	42.6	20.4	213.0
SPECIAL EDUCATION STUDENTS <sup>c</sup>	128	38.3	61.7	32.0	6.3	190.0
CURRENT LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	6	33.3	66.7	16.7	16.7	183.7
FORMER LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	0	--	--	--	--	--
TOTAL LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	6	33.3	66.7	16.7	16.7	183.7
TOTAL STUDENTS <sup>e</sup>	1,165	60.1	39.9	41.3	18.8	210.3

**STATEWIDE RESULTS**

	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL EDUCATION STUDENTS <sup>b</sup>	82,582	87.8	12.2	41.7	46.0	238.4
SPECIAL EDUCATION STUDENTS <sup>c</sup>	15,639	59.5	40.5	39.5	20.0	208.9
CURRENT LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3,725	55.4	44.6	37.4	17.9	205.8
FORMER LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	1,943	75.5	24.5	44.2	31.3	224.9
TOTAL LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	5,668	62.3	37.7	39.7	22.5	212.4
TOTAL STUDENTS <sup>e</sup>	101,659	82.4	17.6	41.2	41.1	232.8

- 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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) 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 2006  
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 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	12,581	65.9	34.1	53.5	12.4	211.7
B	7,951	79.4	20.6	60.6	18.8	222.5
CD	7,778	84.2	15.8	60.3	23.9	227.7
DE	10,666	89.3	10.7	59.4	29.9	233.1
FG	10,398	92.1	7.9	57.3	34.8	237.1
GH	11,675	92.7	7.3	54.2	38.4	238.6
I	16,493	95.6	4.4	51.3	44.3	243.1
J	3,649	97.3	2.7	47.1	50.2	246.3

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

DFG	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	2,703	43.4	56.6	38.5	4.8	193.2
B	1,717	60.5	39.5	49.0	11.5	207.1
CD	1,565	65.1	34.9	53.8	11.3	210.0
DE	2,051	77.2	22.8	58.2	19.0	220.7
FG	1,975	76.2	23.8	58.0	18.2	220.2
GH	2,025	77.9	22.1	58.7	19.2	221.3
I	2,906	81.0	19.0	58.4	22.6	225.0
J	535	86.0	14.0	56.3	29.7	231.2

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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE  
 BY DISTRICT FACTOR GROUP**

**SCIENCE SECTION – Grade 4**

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

DFG	NUMBER TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	1,925	36.9	63.1	32.4	4.6	189.1
B	502	35.7	64.3	32.1	3.6	188.4
CD	229	40.6	59.4	35.8	4.8	190.0
DE	191	47.6	52.4	36.1	11.5	198.1
FG	172	48.8	51.2	43.6	5.2	197.4
GH	295	57.3	42.7	44.1	13.2	205.1
I	220	58.6	41.4	47.3	11.4	205.8
J	134	89.6	10.4	56.0	33.6	235.0

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

DFG	NUMBER TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
A	17,039	59.4	40.6	49.0	10.4	206.4
B	10,140	74.2	25.8	57.3	16.8	218.3
CD	9,565	80.1	19.9	58.7	21.4	223.9
DE	12,888	86.8	13.2	58.8	27.9	230.6
FG	12,533	89.0	11.0	57.2	31.8	233.9
GH	13,977	89.8	10.2	54.7	35.2	235.5
I	19,607	93.1	6.9	52.3	40.8	240.1
J	4,300	95.7	4.3	48.5	47.2	244.2

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 CURRENT 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 2006 NEW JERSEY ASSESSMENT OF SKILLS AND KNOWLEDGE**

**SCIENCE SECTION – Grade 4**

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

	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL EDUCATION STUDENTS <sup>b</sup>	1,029	68.3	31.7	51.7	16.6	214.5
SPECIAL EDUCATION STUDENTS <sup>c</sup>	129	46.5	53.5	41.1	5.4	196.9
CURRENT LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	6	16.7	83.3	0.0	16.7	194.5
FORMER LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	0	--	--	--	--	--
TOTAL LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	6	16.7	83.3	0.0	16.7	194.5
TOTAL STUDENTS <sup>e</sup>	1,164	65.6	34.4	50.3	15.4	212.4

**STATEWIDE RESULTS**

	NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
			PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL EDUCATION STUDENTS <sup>b</sup>	82,536	86.4	13.6	55.5	31.0	231.9
SPECIAL EDUCATION STUDENTS <sup>c</sup>	15,678	69.0	31.0	53.2	15.8	214.3
CURRENT LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	3,710	42.7	57.3	35.7	7.0	193.7
FORMER LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	1,942	66.8	33.2	55.4	11.4	212.0
TOTAL LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	5,652	51.0	49.0	42.5	8.5	200.0
TOTAL STUDENTS <sup>e</sup>	101,636	82.3	17.7	54.5	27.8	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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) 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 2006  
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 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	14,725	70.4	29.6	69.3	1.1	208.5
	ALL OTHERS	67,855	90.6	9.4	85.3	5.3	223.0
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	3,111	24.8	75.2	24.7	0.1	177.2
	ALL OTHERS	12,442	54.8	45.2	54.2	0.7	198.6
CURRENT <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	1,757	40.5	59.5	40.3	0.2	187.3
	ALL OTHERS	1,260	49.9	50.1	48.3	1.7	196.5
FORMER <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	1,151	62.5	37.5	61.3	1.1	204.1
	ALL OTHERS	792	75.3	24.7	73.6	1.6	210.6
TOTAL <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	2,908	49.2	50.8	48.6	0.6	193.9
	ALL OTHERS	2,052	59.7	40.3	58.0	1.7	201.9
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	19,427	60.8	39.2	60.0	0.8	201.9
	ALL OTHERS	81,453	84.6	15.4	80.0	4.6	218.9

- 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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) 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 2006  
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**

MATHEMATICS SECTION		NUMBER <sup>a</sup> TESTED 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	14,734	73.5	26.5	45.5	27.9	221.9
	ALL OTHERS	67,848	90.9	9.1	40.9	50.0	242.0
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	3,150	37.3	62.7	28.3	9.0	189.0
	ALL OTHERS	12,489	65.0	35.0	42.3	22.7	213.9
CURRENT <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	2,111	53.1	46.9	37.5	15.6	203.4
	ALL OTHERS	1,614	58.3	41.7	37.3	21.0	209.1
FORMER <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	1,152	70.8	29.2	41.6	29.3	221.4
	ALL OTHERS	791	82.3	17.7	47.9	34.4	230.0
TOTAL <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	3,263	59.4	40.6	39.0	20.4	209.7
	ALL OTHERS	2,405	66.2	33.8	40.8	25.4	215.9
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	19,816	65.9	34.1	42.0	23.8	215.0
	ALL OTHERS	81,843	86.4	13.6	41.1	45.3	237.1

- 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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) 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 2006  
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 2006	PERCENT WHO SCORED ADVANCED PROFICIENT OR PROFICIENT 2006	PERCENT AT EACH PROFICIENCY LEVELS			MEAN SCALE SCORE 2006
				PARTIALLY PROFICIENT (100-199)	PROFICIENT (200-249)	ADVANCED PROFICIENT (250-300)	
GENERAL <sup>b</sup> EDUCATION STUDENTS	SPECIAL NEEDS	14,724	66.9	33.1	54.4	12.5	212.3
	ALL OTHERS	67,812	90.7	9.3	55.7	35.0	236.1
SPECIAL <sup>c</sup> EDUCATION STUDENTS	SPECIAL NEEDS	3,155	44.1	55.9	38.8	5.4	193.8
	ALL OTHERS	12,523	75.2	24.8	56.9	18.4	219.4
CURRENT <sup>d</sup> LIMITED ENGLISH <sup>d</sup> PROFICIENT STUDENTS	SPECIAL NEEDS	2,101	36.9	63.1	32.3	4.6	189.2
	ALL OTHERS	1,609	50.2	49.8	40.1	10.1	199.6
FORMER <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	1,150	59.2	40.8	50.3	8.9	206.9
	ALL OTHERS	792	77.9	22.1	62.8	15.2	219.4
TOTAL <sup>d</sup> LIMITED ENGLISH PROFICIENT STUDENTS	SPECIAL NEEDS	3,251	44.8	55.2	38.7	6.1	195.4
	ALL OTHERS	2,401	59.4	40.6	47.6	11.7	206.1
TOTAL <sup>e</sup> STUDENTS	SPECIAL NEEDS	19,801	60.4	39.6	49.8	10.6	207.1
	ALL OTHERS	81,835	87.6	12.4	55.6	32.0	232.9

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 CURRENT, FORMER, OR TOTAL (CURRENT+FORMER) 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, Current and Former”** or **“Total Limited English Proficient”** includes students coded as LEP or Former LEP on their test booklet.

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

**“Former Limited English Proficient”** includes students coded as Former 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 2006 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	-2.8493	1.424	17	0.0
0.5	130	-2.1705	0.719	17	0.0
1.0	132	-1.8307	0.481	68	0.1
1.5	134	-1.6481	0.382	73	0.1
2.0	136	-1.5235	0.327	149	0.1
2.5	138	-1.4279	0.292	154	0.2
3.0	140	-1.3492	0.269	277	0.3
3.5	142	-1.2811	0.252	300	0.3
4.0	144	-1.2203	0.240	459	0.5
4.5	146	-1.1645	0.232	497	0.5
5.0	148	-1.1121	0.225	681	0.7
5.5	150	-1.0623	0.221	775	0.8
6.0	153	-1.0142	0.217	1,054	1.0
6.5	155	-0.9673	0.215	1,200	1.2
7.0	157	-0.9211	0.214	1,546	1.5
7.5	160	-0.8754	0.213	1,760	1.7
8.0	162	-0.8300	0.213	2,254	2.2
8.5	165	-0.7846	0.213	2,558	2.5
9.0	168	-0.7391	0.213	3,142	3.1
9.5	170	-0.6936	0.213	3,560	3.5
10.0	172	-0.6479	0.213	4,226	4.2
10.5	175	-0.6021	0.214	4,714	4.7
11.0	177	-0.5562	0.214	5,558	5.5
11.5	179	-0.5101	0.214	6,203	6.2
12.0	182	-0.4640	0.215	7,241	7.2
12.5	184	-0.4177	0.215	8,042	8.0
13.0	186	-0.3712	0.215	9,314	9.3
13.5	188	-0.3246	0.216	10,320	10.3
14.0	190	-0.2777	0.216	11,778	11.7
14.5	192	-0.2305	0.217	12,950	12.9
15.0	194	-0.1829	0.218	14,718	14.6
15.5	196	-0.1349	0.219	16,162	16.1
16.0	198	-0.0864	0.221	17,644	17.5
16.5	200	-0.0373	0.222	19,411	19.3
17.0	202	0.0125	0.224	22,087	21.9
17.5	204	0.0631	0.225	24,222	24.1
18.0	207	0.1144	0.227	27,057	26.9
18.5	209	0.1666	0.229	29,601	29.4
19.0	211	0.2197	0.231	32,854	32.6
19.5	213	0.2737	0.233	35,730	35.5
20.0	215	0.3287	0.235	39,313	39.1

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students *	Cumulative Percent of Students
20.5	217	0.3846	0.237	42,708	42.4
21.0	219	0.4415	0.239	46,725	46.4
21.5	221	0.4993	0.241	50,273	49.9
22.0	223	0.5580	0.243	54,632	54.3
22.5	225	0.6176	0.244	58,435	58.1
23.0	227	0.6780	0.246	62,940	62.5
23.5	229	0.7392	0.248	66,953	66.5
24.0	231	0.8012	0.249	71,413	70.9
24.5	233	0.8641	0.251	75,125	74.6
25.0	235	0.9278	0.253	79,151	78.6
25.5	237	0.9923	0.255	82,349	81.8
26.0	238	1.0578	0.256	85,675	85.1
26.5	240	1.1242	0.258	88,325	87.8
27.0	242	1.1918	0.260	90,825	90.2
27.5	243	1.2603	0.262	92,816	92.2
28.0	245	1.3299	0.264	94,678	94.1
28.5	247	1.4005	0.266	95,998	95.4
29.0	248	1.4721	0.268	97,196	96.6
29.5	250	1.5445	0.269	98,079	97.4
30.0	252	1.6176	0.270	98,768	98.1
30.5	254	1.6911	0.271	99,280	98.6
31.0	256	1.7650	0.272	99,644	99.0
31.5	257	1.8392	0.272	99,956	99.3
32.0	259	1.9137	0.273	100,171	99.5
32.5	261	1.9886	0.274	100,323	99.7
33.0	263	2.0641	0.275	100,437	99.8
33.5	265	2.1405	0.277	100,518	99.9
34.0	267	2.2183	0.280	100,568	99.9
34.5	269	2.2982	0.284	100,602	99.9
35.0	270	2.3810	0.290	100,620	100.0
35.5	272	2.4677	0.298	100,629	100.0
36.0	274	2.5600	0.309	100,639	100.0
36.5	276	2.6602	0.323	100,643	100.0
37.0	278	2.7713	0.343	100,646	100.0
37.5	279	2.8984	0.370	100,650	100.0
38.0	281	3.0500	0.410	100,653	100.0
38.5	283	3.2427	0.471	100,654	100.0
39.0	285	3.5143	0.580	100,655	100.0
39.5	286	3.9924	0.841	100,655	100.0
40.0	288	4.8997	1.636	100,655	100.0

\* Excludes Students Who Took Breach Form.

**TABLE C.3.2 Conversion 2006 NJ ASK Mathematics – Grade 3**

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students *	Cumulative Percent of Students
0.0	119	-3.5656	1.768	0	0.0
0.5	122	-2.4896	0.916	1	0.0
1.0	125	-1.9303	0.622	4	0.0
1.5	128	-1.6221	0.499	11	0.0
2.0	130	-1.4088	0.429	18	0.0
2.5	133	-1.2446	0.383	32	0.0
3.0	136	-1.1100	0.351	57	0.1
3.5	139	-0.9950	0.327	87	0.1
4.0	141	-0.8941	0.308	147	0.1
4.5	144	-0.8035	0.293	225	0.2
5.0	147	-0.7210	0.281	347	0.3
5.5	150	-0.6449	0.270	494	0.5
6.0	153	-0.5739	0.262	694	0.7
6.5	156	-0.5073	0.254	929	0.9
7.0	159	-0.4443	0.247	1,247	1.2
7.5	162	-0.3844	0.241	1,668	1.6
8.0	165	-0.3272	0.236	2,189	2.2
8.5	167	-0.2724	0.231	2,742	2.7
9.0	170	-0.2197	0.227	3,419	3.4
9.5	173	-0.1688	0.223	4,144	4.1
10.0	176	-0.1197	0.219	5,002	4.9
10.5	179	-0.0722	0.216	5,932	5.9
11.0	182	-0.0260	0.213	6,956	6.9
11.5	185	0.0188	0.210	8,076	8.0
12.0	187	0.0625	0.207	9,204	9.1
12.5	190	0.1050	0.204	10,463	10.3
13.0	193	0.1465	0.202	11,777	11.6
13.5	195	0.1870	0.200	13,166	13.0
14.0	200	0.2266	0.197	14,599	14.4
14.5	201	0.2654	0.195	16,168	16.0
15.0	203	0.3033	0.193	17,755	17.6
15.5	206	0.3406	0.192	19,367	19.1
16.0	208	0.3772	0.190	21,024	20.8
16.5	210	0.4131	0.189	22,783	22.5

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students *	Cumulative Percent of Students
17.0	213	0.4486	0.187	24,669	24.4
17.5	215	0.4835	0.186	26,673	26.4
18.0	217	0.5181	0.185	28,647	28.3
18.5	219	0.5524	0.184	30,766	30.4
19.0	221	0.5863	0.184	32,949	32.6
19.5	223	0.6201	0.183	35,143	34.7
20.0	225	0.6537	0.183	37,495	37.1
20.5	227	0.6873	0.183	39,824	39.4
21.0	229	0.7210	0.183	42,307	41.8
21.5	231	0.7549	0.184	44,687	44.2
22.0	233	0.7890	0.185	47,394	46.8
22.5	235	0.8236	0.186	49,812	49.2
23.0	237	0.8586	0.188	52,589	52.0
23.5	239	0.8944	0.190	55,115	54.5
24.0	241	0.9311	0.192	58,031	57.4
24.5	243	0.9688	0.195	60,810	60.1
25.0	245	1.0079	0.199	63,840	63.1
25.5	247	1.0485	0.203	66,520	65.8
26.0	249	1.0910	0.208	69,588	68.8
26.5	250	1.1358	0.214	72,345	71.5
27.0	252	1.1835	0.222	75,620	74.8
27.5	254	1.2346	0.230	78,225	77.3
28.0	256	1.2900	0.240	81,393	80.5
28.5	258	1.3509	0.252	83,891	82.9
29.0	260	1.4185	0.267	86,925	85.9
29.5	262	1.4950	0.286	89,279	88.3
30.0	264	1.5835	0.309	92,174	91.1
30.5	266	1.6887	0.340	93,998	92.9
31.0	268	1.8188	0.382	96,425	95.3
31.5	270	1.9889	0.446	97,770	96.6
32.0	272	2.2346	0.554	99,585	98.4
32.5	274	2.6746	0.810	100,236	99.1
33.0	276	3.5207	1.586	101,163	100.0

\* Excludes Students Who Took Breach Form.

**TABLE C.4.1 Conversion 2006 NJ ASK Language Arts Literacy – Grade 4**

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students *	Cumulative Percent of Students	Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students *	Cumulative Percent of Students
0.0	106	-3.0008	1.526	13	0.0	22.0	216	0.3567	0.225	46,873	46.5
0.5	109	-2.2292	0.761	13	0.0	22.5	218	0.4079	0.227	50,297	49.9
1.0	111	-1.8551	0.499	57	0.1	23.0	220	0.4601	0.229	54,093	53.6
1.5	114	-1.6618	0.389	66	0.1	23.5	222	0.5132	0.231	57,727	57.2
2.0	116	-1.5340	0.329	135	0.1	24.0	224	0.5674	0.234	61,616	61.1
2.5	119	-1.4385	0.291	141	0.1	24.5	226	0.6227	0.236	65,376	64.8
3.0	122	-1.3612	0.265	245	0.2	25.0	228	0.6793	0.239	69,229	68.6
3.5	125	-1.2956	0.247	266	0.3	25.5	230	0.7372	0.242	72,859	72.2
4.0	127	-1.2378	0.234	391	0.4	26.0	232	0.7965	0.244	76,561	75.9
4.5	130	-1.1855	0.223	431	0.4	26.5	234	0.8571	0.247	79,799	79.1
5.0	133	-1.1372	0.216	575	0.6	27.0	236	0.9191	0.250	82,991	82.3
5.5	136	-1.0918	0.210	659	0.7	27.5	237	0.9824	0.252	85,861	85.1
6.0	139	-1.0488	0.205	853	0.8	28.0	239	1.0468	0.255	88,556	87.8
6.5	143	-1.0073	0.202	976	1.0	28.5	241	1.1124	0.257	90,779	90.0
7.0	146	-0.9670	0.199	1,215	1.2	29.0	243	1.1788	0.258	92,896	92.1
7.5	149	-0.9276	0.197	1,392	1.4	29.5	245	1.2458	0.259	94,520	93.7
8.0	151	-0.8887	0.196	1,674	1.7	30.0	247	1.3132	0.259	95,889	95.1
8.5	154	-0.8500	0.196	1,917	1.9	30.5	248	1.3807	0.259	96,992	96.2
9.0	157	-0.8113	0.197	2,284	2.3	31.0	250	1.4480	0.259	97,944	97.1
9.5	160	-0.7723	0.197	2,613	2.6	31.5	252	1.5149	0.258	98,669	97.8
10.0	162	-0.7330	0.199	3,083	3.1	32.0	253	1.5814	0.257	99,227	98.4
10.5	165	-0.6931	0.200	3,525	3.5	32.5	255	1.6473	0.256	99,662	98.8
11.0	167	-0.6526	0.202	4,100	4.1	33.0	257	1.7129	0.255	100,021	99.2
11.5	169	-0.6114	0.203	4,654	4.6	33.5	258	1.7781	0.255	100,258	99.4
12.0	172	-0.5695	0.205	5,371	5.3	34.0	260	1.8433	0.255	100,444	99.6
12.5	174	-0.5269	0.207	6,082	6.0	34.5	261	1.9090	0.256	100,572	99.7
13.0	176	-0.4836	0.208	7,003	6.9	35.0	263	1.9755	0.259	100,684	99.8
13.5	179	-0.4398	0.209	8,024	8.0	35.5	265	2.0434	0.262	100,747	99.9
14.0	181	-0.3955	0.211	9,177	9.1	36.0	266	2.1137	0.267	100,787	99.9
14.5	183	-0.3508	0.211	10,370	10.3	36.5	268	2.1871	0.274	100,816	99.9
15.0	186	-0.3058	0.212	11,778	11.7	37.0	270	2.2650	0.283	100,838	100.0
15.5	188	-0.2604	0.213	13,238	13.1	37.5	272	2.3487	0.295	100,849	100.0
16.0	190	-0.2148	0.213	14,894	14.8	38.0	274	2.4403	0.310	100,860	100.0
16.5	193	-0.1690	0.214	16,659	16.5	38.5	276	2.5422	0.328	100,867	100.0
17.0	195	-0.1230	0.214	18,674	18.5	39.0	278	2.6576	0.351	100,870	100.0
17.5	197	-0.0767	0.215	20,155	20.0	39.5	280	2.7907	0.379	100,872	100.0
18.0	200	-0.0302	0.216	22,776	22.6	40.0	282	2.9471	0.412	100,874	100.0
18.5	202	0.0166	0.216	25,354	25.1	40.5	285	3.1346	0.454	100,874	100.0
19.0	204	0.0637	0.217	28,010	27.8	41.0	287	3.3649	0.507	100,874	100.0
19.5	206	0.1113	0.218	30,666	30.4	41.5	289	3.6583	0.579	100,874	100.0
20.0	208	0.1592	0.219	33,603	33.3	42.0	291	4.0586	0.694	100,874	100.0
20.5	210	0.2076	0.220	36,604	36.3	42.5	293	4.7074	0.956	100,874	100.0
21.0	212	0.2566	0.222	39,946	39.6	43.0	295	5.8041	1.753	100,874	100.0
21.5	214	0.3063	0.223	43,285	42.9						

\* Excludes Students Who Took Breach Form.

**TABLE C.4.2 Conversion 2006 NJ ASK Mathematics – Grade 4**

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students *	Cumulative Percent of Students	Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students *	Cumulative Percent of Students
0.0	104	-3.9385	1.836	0	0.0	22.0	216	0.7093	0.156	30,626	30.3
0.5	107	-2.7148	1.008	1	0.0	22.5	218	0.7338	0.156	32,086	31.7
1.0	111	-2.0169	0.703	11	0.0	23.0	220	0.7580	0.155	33,577	33.2
1.5	115	-1.6239	0.561	27	0.0	23.5	222	0.7823	0.155	35,104	34.7
2.0	119	-1.3571	0.476	57	0.1	24.0	224	0.8064	0.155	36,669	36.2
2.5	123	-1.1583	0.418	106	0.1	24.5	225	0.8305	0.155	38,230	37.8
3.0	127	-1.0010	0.376	174	0.2	25.0	227	0.8547	0.155	39,897	39.4
3.5	131	-0.8712	0.345	273	0.3	25.5	229	0.8789	0.155	41,440	40.9
4.0	135	-0.7608	0.320	410	0.4	26.0	231	0.9032	0.156	43,184	42.7
4.5	138	-0.6647	0.300	608	0.6	26.5	233	0.9276	0.156	44,829	44.3
5.0	141	-0.5795	0.283	852	0.8	27.0	235	0.9522	0.157	46,591	46.0
5.5	145	-0.5028	0.270	1,191	1.2	27.5	237	0.9770	0.158	48,361	47.8
6.0	148	-0.4330	0.258	1,573	1.6	28.0	238	1.0021	0.158	50,127	49.5
6.5	150	-0.3688	0.248	1,980	2.0	28.5	240	1.0275	0.160	51,869	51.2
7.0	153	-0.3092	0.239	2,475	2.4	29.0	242	1.0533	0.161	53,740	53.1
7.5	156	-0.2537	0.232	2,971	2.9	29.5	244	1.0795	0.162	55,574	54.9
8.0	158	-0.2014	0.225	3,489	3.4	30.0	246	1.1063	0.164	57,571	56.9
8.5	161	-0.1521	0.219	4,040	4.0	30.5	247	1.1336	0.166	59,450	58.7
9.0	163	-0.1053	0.213	4,616	4.6	31.0	250	1.1615	0.168	61,460	60.7
9.5	166	-0.0608	0.208	5,215	5.2	31.5	251	1.1902	0.170	63,364	62.6
10.0	168	-0.0182	0.204	5,856	5.8	32.0	253	1.2197	0.173	65,503	64.7
10.5	170	0.0226	0.200	6,580	6.5	32.5	254	1.2501	0.175	67,396	66.6
11.0	173	0.0619	0.196	7,315	7.2	33.0	256	1.2817	0.179	69,500	68.7
11.5	175	0.0997	0.192	8,016	7.9	33.5	258	1.3144	0.182	71,414	70.6
12.0	177	0.1362	0.189	8,784	8.7	34.0	259	1.3484	0.186	73,661	72.8
12.5	179	0.1716	0.186	9,519	9.4	34.5	261	1.3840	0.190	75,628	74.7
13.0	181	0.2059	0.183	10,264	10.1	35.0	262	1.4213	0.195	77,906	77.0
13.5	183	0.2392	0.181	11,124	11.0	35.5	264	1.4606	0.201	79,791	78.8
14.0	185	0.2715	0.178	11,976	11.8	36.0	265	1.5023	0.207	81,918	80.9
14.5	187	0.3030	0.176	12,893	12.7	36.5	267	1.5467	0.214	83,804	82.8
15.0	189	0.3338	0.174	13,782	13.6	37.0	268	1.5942	0.222	86,028	85.0
15.5	191	0.3638	0.172	14,786	14.6	37.5	270	1.6455	0.231	87,788	86.7
16.0	193	0.3932	0.170	15,768	15.6	38.0	271	1.7013	0.241	89,781	88.7
16.5	195	0.4220	0.168	16,828	16.6	38.5	272	1.7628	0.254	91,381	90.3
17.0	197	0.4501	0.167	17,703	17.5	39.0	274	1.8311	0.269	93,342	92.2
17.5	200	0.4778	0.165	19,072	18.8	39.5	275	1.9085	0.287	94,695	93.6
18.0	201	0.5049	0.164	20,215	20.0	40.0	276	1.9977	0.310	96,468	95.3
18.5	203	0.5317	0.162	21,426	21.2	40.5	277	2.1034	0.340	97,535	96.4
19.0	205	0.5580	0.161	22,688	22.4	41.0	278	2.2333	0.382	98,904	97.7
19.5	207	0.5840	0.160	23,919	23.6	41.5	280	2.4026	0.444	99,586	98.4
20.0	209	0.6096	0.159	25,185	24.9	42.0	281	2.6458	0.551	100,519	99.3
20.5	210	0.6348	0.158	26,482	26.2	42.5	283	3.0792	0.803	100,794	99.6
21.0	212	0.6599	0.157	27,854	27.5	43.0	285	3.9091	1.570	101,216	100.0
21.5	214	0.6847	0.157	29,180	28.8						

\* Excludes Students Who Took Breach Form.

**TABLE C.4.3 Conversion 2006 NJ ASK Science – Grade 4**

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students *	Cumulative Percent of Students
0.0	114	-3.0393	1.318	0	0.0
0.5	116	-2.4113	0.724	0	0.0
1.0	118	-2.0443	0.517	1	0.0
1.5	120	-1.8242	0.428	1	0.0
2.0	122	-1.6639	0.375	5	0.0
2.5	123	-1.5362	0.340	5	0.0
3.0	125	-1.4291	0.314	20	0.0
3.5	127	-1.3363	0.295	20	0.0
4.0	129	-1.2537	0.279	60	0.1
4.5	132	-1.1791	0.267	61	0.1
5.0	134	-1.1106	0.256	135	0.1
5.5	136	-1.0471	0.247	142	0.1
6.0	138	-0.9877	0.239	275	0.3
6.5	140	-0.9318	0.233	293	0.3
7.0	142	-0.8787	0.227	516	0.5
7.5	144	-0.8282	0.222	546	0.5
8.0	147	-0.7799	0.217	906	0.9
8.5	149	-0.7334	0.213	963	0.9
9.0	151	-0.6886	0.209	1,484	1.5
9.5	153	-0.6453	0.206	1,583	1.6
10.0	156	-0.6034	0.203	2,210	2.2
10.5	158	-0.5626	0.200	2,342	2.3
11.0	160	-0.5229	0.198	3,112	3.1
11.5	163	-0.4841	0.195	3,318	3.3
12.0	165	-0.4463	0.193	4,260	4.2
12.5	168	-0.4092	0.191	4,490	4.4
13.0	170	-0.3729	0.189	5,652	5.6
13.5	172	-0.3373	0.187	6,048	6.0
14.0	175	-0.3023	0.186	7,412	7.3
14.5	177	-0.2679	0.184	7,848	7.7
15.0	180	-0.2340	0.183	9,304	9.2
15.5	182	-0.2006	0.182	9,886	9.7
16.0	185	-0.1676	0.180	11,664	11.5
16.5	187	-0.1351	0.179	12,355	12.2
17.0	190	-0.1030	0.178	14,384	14.2
17.5	193	-0.0712	0.177	15,253	15.0
18.0	195	-0.0398	0.176	17,566	17.3
18.5	198	-0.0086	0.176	18,021	17.7
19.0	200	0.0223	0.175	20,933	20.6
19.5	203	0.0529	0.174	22,099	21.7

Raw Score	Scale Score	Theta	S.E.	Cumulative Number of Students *	Cumulative Percent of Students
20.0	205	0.0833	0.174	24,818	24.4
20.5	208	0.1136	0.173	26,082	25.7
21.0	210	0.1438	0.173	29,059	28.6
21.5	213	0.1738	0.173	30,564	30.1
22.0	215	0.2039	0.173	33,757	33.2
22.5	218	0.2339	0.173	35,337	34.8
23.0	220	0.2641	0.173	38,681	38.1
23.5	223	0.2943	0.174	40,458	39.8
24.0	225	0.3248	0.174	44,040	43.3
24.5	227	0.3556	0.175	45,912	45.2
25.0	230	0.3866	0.177	49,639	48.8
25.5	232	0.4182	0.178	51,637	50.8
26.0	234	0.4504	0.180	55,465	54.6
26.5	237	0.4831	0.182	57,505	56.6
27.0	239	0.5167	0.184	61,361	60.4
27.5	241	0.5512	0.187	63,445	62.4
28.0	243	0.5867	0.190	67,304	66.2
28.5	246	0.6234	0.193	69,391	68.3
29.0	248	0.6616	0.197	73,355	72.2
29.5	250	0.7014	0.201	75,469	74.3
30.0	253	0.7429	0.206	79,166	77.9
30.5	255	0.7865	0.211	81,179	79.9
31.0	257	0.8325	0.217	84,629	83.3
31.5	259	0.8811	0.223	86,499	85.1
32.0	262	0.9327	0.230	89,570	88.1
32.5	264	0.9877	0.238	91,190	89.7
33.0	266	1.0467	0.247	93,792	92.3
33.5	268	1.1103	0.257	95,038	93.5
34.0	271	1.1793	0.268	97,138	95.6
34.5	273	1.2546	0.281	98,036	96.5
35.0	275	1.3378	0.296	99,410	97.8
35.5	277	1.4306	0.313	99,940	98.3
36.0	279	1.5357	0.335	100,748	99.1
36.5	281	1.6576	0.363	101,026	99.4
37.0	283	1.8032	0.401	101,392	99.8
37.5	285	1.9856	0.456	101,484	99.9
38.0	287	2.2349	0.550	101,590	100.0
38.5	289	2.6489	0.769	101,604	100.0
39.0	291	3.3681	1.427	101,617	100.0

\* Excludes Students Who Took Breach Form.

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