PERFORMANCE Series

Computer Adaptive Internet Assessment for Schools

Technical Manual

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1 Introduction

PERFORMANCE Series Purpose

The PERFORMANCE Series Internet delivered assessment is a Standards-based Adaptive Measurement–a computer adaptive assessment modified to measure the different academic objectives of individual state standards. Its goal is to give immediate diagnostic information to each teacher, including learning objectives a student has not completed, and the academic gains made by individual and groups of students. Additionally, the administration can access the scores for the entire district as well as each school, with full desegregation abilities.

Since assessment plays an important role in driving instruction, it is important that the assessment actually measure a student's knowledge each year. The average classroom has a seven-grade breadth of knowledge, but historically assessments have only measured knowledge within one grade. Only the students operating at grade level were accurately measured by previous assessments. Additionally, there was no way for teachers to ascertain the true level of knowledge for students performing outside a given grade level; students could be anywhere between half a grade to seven grades behind or ahead of their peers. Teachers were unable to properly remediate or challenge students, as they had no way to determine the true level of academic competence.

The main advantages of Standards-based Adaptive Measurement are that a large breadth of knowledge can be assessed (across many grade levels), testing time is reduced for the student, and there is the ability to track academic gains on a consistent scale. Reporting of scores is automatically translated to the standards set by the district in order to reflect true achievement.

Company Background

Scantron Corporation (www.scantron.com) is headquartered in Tustin, Calif., and is a wholly owned subsidiary of Atlanta-based John H. Harland Company (NYSE:JH). Scantron is the acknowledged leader in data collection systems,

testing and assessment and hardware service and repair. The company has approximately 600 employees worldwide and annual revenues exceeding $96 million.

For three decades, Scantron has led the industry in data collection and assessment systems designed primarily for education. Today, although the company is recognized globally for testing and assessment technology, it also provides business, healthcare and government agencies with specialized data collection tools, advanced imaging solutions and systems maintenance services. Most importantly, Scantron is renowned for second-to-none customer care. In mapping its business growth, Scantron has adopted a solutions-oriented approach to addressing government's and industry's most challenging problems, providing the private and public sectors with technology that solves issues of national importance.

Scantron acquired EdVISION Corporation, originally founded in 1990 as Tudor Publishing Company, in July 2002. The acquisition expanded Scantron's ability to offer teacher-centric, content-neutral tools. These tools give educators fair and accurate assessment solutions that are in line with the No Child Left Behind Act of 2001. Signed into law by President George W. Bush in January 2002, the Act requires teachers to measure students' grade-level progress and manage curriculum accordingly.

EdVISION got their start on fair and accurate assessment solutions in the early 1990s with the development of a computer-adaptive assessment product, Grade Level Evaluation and the Assessment Management System (GLE/AMS). GLE/AMS utilized an extensive database of reliable and valid questions that guided a student through various learning objectives based on his or her specific ability level. The computer instantly scored the test and provided immediate feedback to teachers. Teachers found the information invaluable, however the delivery of the test (5.25" and 3.5" diskettes) proved overwhelming for system administrators. Since the technology in schools at that time was not able to handle the needs of computer adaptive assessment, the company revised GLE/AMS into a paper-pencil assessment for the classroom teacher (*Skills Connection*). It was always the company's intention to return to computer adaptive assessment once technology provided an optimal solution to the problem of delivering and supporting the software.

Through the development process of GLE/AMS, EdVISION realized that educators desperately needed tools to assist with the creation of curriculum documents. In 1995, EdVISION released its *Curriculum Designer* product. Today, *Curriculum Designer* is the leader in computer-aided design of curricula, with the largest existing database of learning standards and objectives – now nearly 100,000 - aligned to each state's content standards, test objectives, national standards, and standardized test objectives. *Curriculum Designer* is currently utilized in more than 2,000 school districts in 45 states.

With the rapid evolution of the Internet, EdVISION identified the requisite means for delivering and scoring assessments. Development of the *Placement Series* began in the late 1990s, with an initial product launch in the spring of 2000. EdVISION built upon extensive experience in assessment and curriculum development to create a truly unique assessment that benefits students, parents, teachers, and administrators. The product was renamed the *PERFORMANCE Series* in Spring 2001, when additional reporting capabilities were added to the product.

Scantron Corporation takes great pride in its products, services, employees, and customers. By utilizing in-house teams of experts, the company has ensured a level of quality control that mandates that only the finest products be released to market. Throughout its history, Scantron has combined breakthrough technology and superior product development with the highest level of customer service to help set the standards for the entire industry.

Data Security

Because of the sensitive nature of information stored in computer testing systems, Scantron has invested hundreds of hours developing a system to ensure that all information is secure. While no site can be completely secured, Scantron has established a detailed privacy policy and various internal procedures to ensure that student information never leaves the secured environment. Scantron never sells individual data or makes it available to anyone without prior authorization from the school.

All Scantron networks employ multiple security measures including secure passwords, address restrictions, firewalls, and physical security. All

administrative tasks, including viewing scores and managing student information, use 128-bit SSL encryption techniques. This helps prevent information from being cannot be intercepted and viewed by anyone on the Internet.

Another level of Internet security comes from within school sites. To access the student scores from the school, an educator must use a secret user name and password. Scantron monitors each logon request and denies access if proper codes are not entered. Scantron works with schools to assist them in establishing security protocols that prevent accidental or malicious release of access codes and passwords. The school may change these protocols at a later date if necessary.

Schools can configure on-site security settings to limit access to only certain computers, regardless of access codes. This allows schools to carefully monitor access to student records by requiring authorized persons to come to specific machines to do so. Additionally, schools can restrict the times of the day that data records are available for access. This is much like a bank time-locked vault. It is very common to setup access for only school days during school hours.

In all, Scantron is very committed to ensuring that all collected data are stored in a very secure manner.

System Requirements

Internet Connection Requirements

Since PERFORMANCE Series is Internet based, schools must have a solid Internet connection. Typically this means a T1, DSL line, or the equivalent. The stronger the schools' Internet connection, the more students can use the system at the same time. Each student requires about 1KB/Sec (10Kb/Sec) of bandwidth to test. So a full T1 line can support about 6 full computer labs (20-30 computers) testing simultaneously. Schools that share a single phone modem for all Internet activity are not suitable for testing more than a few students at a time. Schools with proxy servers will have slightly faster service.

Internet Browser Requirements

Every Macintosh or Windows computer to be used for testing must be connected to the Internet and must have one of the following Internet browsers installed: Microsoft Internet Explorer version 4.01 or higher* or Netscape Navigator version 4 or higher*. Here are the guidelines:

- A solid Internet connection, such as a T1 line, DSL, etc.
- Either Internet Explorer (version 4.01 or newer) or Netscape Navigator (version 4 or newer)
- A Windows PC (Pentium 16MB RAM)
- Or a Power Macintosh (24MB RAM)

To certify a computer and browser on the Internet, use the computer in question to log on to http://test.edperformance.com/check.

Other technical requirements:

- JavaScript and cookies must be enabled (default browser option).
- Computer must display at least 256 colors
- Computer must have a minimum 640 by 480 resolution screen.

Accommodations

Research supports the comprehensive benefits of computer-adaptive technology to accommodate the needs of all students. Possible accommodations include:

- Stories and questions can be read orally to students
- Students can indicate responses by pointing to the screen manually or through the use of assistive input devices
- A separate individual (i.e., tutor) could record a student's responses
- Extended time for testing is built in to the design of the test
- Student frustration is diminished by the assessment's ability to limit the number of questions that are too difficult or too easy
- Font size, font color, and screen background used in the PERFORMANCE Series are designed to be appropriate for students
- Students can start an assessment, stop, and continue the assessment at a later date without penalty.

2 Content and Item Development

This section details the careful steps taken in the development of the PERFORMANCE Series item bank. Particular emphasis is given to the details of item authoring, including the content resource base from which questions were drawn.

In creating the PERFORMANCE Series item bank, Scantron Corporation has targeted the need for accurate measurement of state and national standards. To achieve that end, Scantron developed an extensive list of skills that correspond to those critical learning objectives most commonly taught throughout the country. This list was created through Scantron's extensive research of state and national standards and assessments that was performed during the creation and regular update of *Curriculum Designer*.

Curriculum Designer contains a massive relational database of alignments for 200+ specific Language Arts standards documents and 200+ specific Mathematics documents, including state and national standards documents, as well as the alignments to state and national high-stakes assessments. By analyzing the commonality and correlation of learning objectives present in these documents, essential learning objectives and content at each grade level were identified and collated. Consequently, the assessment of learning objectives tested by the PERFORMANCE Series has a high degree of correlation to state and national standards. The majority of the reading learning objectives and mathematics learning objectives assessed by the PERFORMANCE Series are commonly found in state and national standards. Similar processes were used in constructing the Language Arts and Science collection of learning objectives. A compendium of learning objectives measured by PERFORMANCE in for Reading, Mathematics, Language Arts and Science are found in Appendix A through D.

Strong correlation alone, however, was not a sufficient condition for a skill area to be included in the final content of the item bank. Utilizing a large team of teachers and educational consultants, Scantron carefully investigated each skill area using the following criteria:

- Is the skill a critical skill?
- Is the skill grade-level appropriate?
- Would the skill be more appropriate in another grade level?
- How would the skill rank in difficulty compared to other grade-level appropriate learning objectives?

After extensive investigation and review, the final content array was assembled and distributed to the Item Development Team.

Developing the item bank for the PERFORMANCE Series was an intensive and comprehensive effort by a large team of item developers. To ensure the highest level of quality and security possible, all items were developed by Scantron Content Specialists. No *off-the-shelf* or third party item banks were used in the development of the PERFORMANCE Series. All development took place under the direction of Meredith Manning, Vice President and Chief Content Officer, and Amanda Jewell, Director of Content Development.

Reading

Content Development

The reading portion of the PERFORMANCE Series assesses students' ability to read passages similar to those they read in school or in outside books, providing an authentic context for comprehension. The reading portion of the PERFORMANCE Series covers items grouped into four units: Vocabulary, Fiction, Nonfiction, and Long Passages.

A short description of each of the units follows:

Vocabulary

Vocabulary knowledge is a significant aspect of overall verbal ability. Both fluency and comprehension are limited when a student must spend time and effort decoding new words encountered in reading material. Therefore, as students' vocabulary knowledge increases, so does their overall reading ability. The inverse is also true - the more students read, the greater their vocabulary knowledge. From both of these perspectives, it is clear that vocabulary knowledge is closely related to reading ability.

Because of this relationship, the vocabulary portion of the test was designed to serve as a predictor of a student's reading ability. The vocabulary portion reliably determines a starting point for the reading portion of the test.

In choosing general reading vocabulary words, the Item Development Team follows a guideline of using the most common or familiar form of a word for the specified grade level. Vocabulary words may include affixes, compound words, or modifiers when it is grade-level appropriate, but the student's knowledge of such word forms is not specifically tested.

When words are chosen, the Item Development Team considers the indexed grade level, and reviews each word's appropriateness, including content and readability. Readability considerations vary according to grade level, and include the difficulty of a word's spelling, the number of syllables, whether it includes digraphs, affixes, diphthongs, silent letters, or other irregularities. All of these aspects of a word are considered when determining its grade-level placement.

While the lists of words indexed by grade level are considered important resources, review by the Item Development Team is key because the grade-level appropriateness of a particular word may change over time. A word that was considered a fifth-grade word five years ago may now be seen quite frequently at the second- or third-grade level. For instance, consider the word *Internet*. A book published ten years ago may have listed it as a ninth-grade word, however, as Internet access in schools and in families' homes increased, the frequency of this word increased. Today, even elementary students are quite familiar with the word *Internet*. The Item Development Team carefully reviews such considerations.

In addition to vocabulary lists developed by classroom teachers, the Item Development Team refers to several indexed word lists. These lists provide an assigned grade level for vocabulary words based on frequency, content, and readability. Refer to the References, Question Bank Resources, and Referenced Periodicals for a list of all vocabulary resources.

Fiction

This unit presents a short narrative, and the accompanying questions test the student's comprehension of story elements. These questions are divided among literal, inferential, and critical thinking skills.

Nonfiction

This unit covers informational topics such as history, wildlife, technology, biographies, or other general topics. The questions for these passages are also divided among literal, inferential, and critical thinking skills.

Long Passage

Comprehension of long passage details requires the student to be able to understand the overall idea of the passage, while also paying attention to individual details. Literal, inferential, and critical thinking skills are assessed in this unit as well.

Item Development

All reading passages included in the test are exclusively written for PERFORMANCE Series. Once passages are created, they are submitted to the Item Development Team at large, for reviews of grade-level and contextual appropriateness. In addition, the following computer-based reading algorithms are used to analyze the reading level of each passage:

- Vocabulary Assessor
- Dale-Chall
- Flesch-Kincaid
- Flesch Reading Ease
- Powers-Sumner-Kearl

Passages that do not pass this level of review are returned to the writing team for editing and resubmission. The following word length guidelines are used when writing passages:

Grade Level	Long Passage	Fiction	Nonfiction
2-3	550-650	150-250	150-250
4-6	600-700	250-350	250-350
7-9	700-800	350-450	350-450
9-11	700-800	450-550	450-550
12	700-800	600-650	650-700

Table 2-1: Descriptors by grade level for the Long Passage, Fiction, and Nonfiction passage units.

Vocabulary items

Emergent-reader items (first grade level or below) require the student to match a word with a picture.

Beginning with second grade items, students are required to identify the meaning of a vocabulary word presented in isolation by choosing from a list of synonyms. This skill is used in questions through the tenth grade level.

Eleventh and twelfth grade items require the student to identify a vocabulary word's meaning "in context."

Skill Areas

Literal, Inferential, and Critical Thinking Skills are the three skill areas that are tested in the reading portion of the PERFORMANCE Series. Below is a definition of each skill type:

Literal Skills: The ability to recognize and recall key information in a text (details, main idea, setting).

Inferential Skills: The ability to take the basic knowledge facts and then use them beyond the text (predicting outcomes, cause and effect, summarize).

Critical Thinking: The ability to take an idea and combine elements from all other levels to analyze and form conclusions about a text (inferences, draw conclusions, evaluate characters).

Depth of Knowledge Ratings

An additional piece of information on the PERFORMANCE Series skills lists is the Depth of Knowledge Ratings using the Taxonomy developed by Robert Marzano and Bloom's Taxonomy. See *Designing a new taxonomy of educational objectives* by Robert Marzano (2001) and *Taxonomy of educational objectives: The classification of educational goals: Handbook I, cognitive domain* by Benjamin Bloom (1956) for more information on the Taxonomies. Table 2-2 and Table 2-3 display the percentage of items per unit by each taxonomy level using the Marzano and Bloom's Taxonomy.

Unit	Level 1	Level 2	Level 3	Level 4	Level 5
Vocabulary	51%	49%	0%	0%	0%
Fiction	17%	54%	29%	0%	0%
Nonfiction	16%	53%	30%	0%	0%
Long Passage	19%	40%	40%	0%	0%
Total	24%	49%	27%	0%	0%

Table 2-2: Marzano rating proportions for Reading skill list (N = 582). Level 1 - Retrieval, Level 2 - Comprehension, Level 3 - Analysis, Level 4 - Utilization, Level 5 - Goal Setting and Monitoring.

Unit	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Vocabulary	41%	50%	9%	0%	0%	0%
Fiction	7%	20%	24%	41%	3%	5%
Nonfiction	6%	22%	33%	30%	7%	2%
Long Passage	6%	26%	15%	43%	5%	5%
Total	13%	28%	20%	31%	4%	3%

Table 2-3: Bloom rating proportions for Reading skill list (N = 582). Level 1 - Knowledge, Level 2 - Comprehension, Level 3 - Application, Level 4 - Analysis, Level 5 - Synthesis, Level 6 - Evaluation.

Mathematics

Content Development

The mathematics portion of the PERFORMANCE Series assesses students' ability to correctly complete computation and problem solving skills similar to those that might be encountered within a real world setting. The mathematics portion of the PERFORMANCE Series covers items originally grouped into eight units: Algebra Patterns & Functions, Decimals, Fractions, Geometry & the Coordinate Plane, Measurement, Data Analysis & Probability, Real Numbers, and Whole Numbers. In the spring of 2004, the mathematics units were modified to better reflect those adopted by the National Council of Teachers of Mathematics (NCTM). The NCTM units are Number & Operations, Algebra, Geometry, Measurement, and Data Analysis & Probability

A short description of each of the unit follows:

Number & Operations

The Number and Operations unit assesses fluency with number computations. Questions include whole numbers, decimals, fractions, integers, and other rational numbers. The unit also contains questions that require understanding of numbers, ways of representing numbers and relationships among numbers. The questions in this unit are divided between problem solving and computational skills.

Algebra

The algebra unit focuses on solving a variety of equations with special emphasis on algebraic language and notation. The questions in this unit are divided between problem solving and computational skills.

Geometry

This unit includes coordinate geometry concepts, angles and shapes and their properties, and, classification of 1, 2, and 3-dimensional shapes, and proofs. The questions in this unit are divided between problem solving and computational skills.

Measurement

The measurement unit covers conversion problems as well as area, perimeter, and volume learning objectives. The questions in this unit are divided between problem solving and computational skills.

Data Analysis & Probability

This unit includes learning objectives that assess simple probability to compound events. Combinations and permutations are assessed as well as measures of central tendency. Organization and interpretation of data are other skill areas that are included. The questions in this unit are divided between problem solving and computational skills.

Item Development

All mathematics items included in the test are exclusively written for the PERFORMANCE Series. Once mathematics items are created, they are submitted to the Item Development Team at large, for reviews of grade-level and contextual appropriateness. In addition, attention was given to ensure that there were not excessive language demands in any of the mathematics in context (word/story) problems that appear in various units. Items that do not pass this level of review are returned to the writing team for editing and resubmission.

Depth of Knowledge Ratings

Table 2-4 and Table 2-5 display the percentage of items per unit by each taxonomy level using the Marzano and Bloom's Taxonomy.

Unit	Level 1	Level 2	Level 3	Level 4	Level 5
Number & Operations	64%	13%	0%	22%	0%
Geometry	72%	6%	17%	6%	0%
Data Analysis & Probability	56%	4%	4%	36%	0%
Algebra	56%	33%	3%	8%	0%
Measurement	83%	3%	2%	12%	0%
Total	65%	14%	4%	18%	0%

Table 2-4: Marzano rating proportions for Mathematics skill list (N = 426). Level 1 - Retrieval, Level 2 - Comprehension, Level 3 - Analysis, Level 4 - Utilization, Level 5 - Goal Setting and Monitoring.

Units	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Number & Operations	7%	2%	62%	29%	0%	0%
Geometry	41%	9%	30%	20%	0%	0%
Data Analysis & Probability	0%	14%	40%	46%	0%	0%
Algebra	1%	5%	57%	37%	0%	0%
Measurement	2%	15%	68%	15%	0%	0%
Total	8%	7%	55%	30%	0%	0%

Table 2-5: Bloom rating proportions for Mathematics skill list (N = 426). Level 1 - Knowledge, Level 2 - Comprehension, Level 3 - Application, Level 4 - Analysis, Level 5 - Synthesis, Level 6 - Evaluation.

Language Arts

Content Development

The language arts portion of the PERFORMANCE Series covers items in grades 2-8. The test covers four units common to all language arts curricula: Capitalization, Parts of Speech, Punctuation, and Sentence Structure.

A short description of each of the unit follows:

Capitalization

The Capitalization unit contains skills that range from identifying capital letters to editing sentences with capitalization errors.

Parts of Speech

The Parts of Speech unit contains skills that address the eight parts of speech: noun, verb, pronoun, adverb, adjective, conjunction, preposition, and interjection. Skills range from identifying parts of speech to filling in sentences with the appropriate verb tense.

Punctuation

The Punctuation unit contains skills that cover a variety of punctuation: end marks, commas, quotation marks, apostrophes, colons, and semicolons. Skills range from identifying different types of punctuation to using quotation marks correctly in dialogue.

Sentence Structure

The Sentence Structure unit contains skills that cover a variety of sentence types, as well as paragraph structure and purpose. Skills range from using correct subject-verb agreement in a sentence to determining the best supporting sentence for a given paragraph.

Item Development

All language arts items included in the test are exclusively written for the PERFORMANCE Series. Once language arts items are created, they are submitted to the Item Development Team at large, for reviews of grade-level and contextual appropriateness. Items that do not pass this level of review are returned to the writing team for editing and resubmission.

Depth of Knowledge Ratings

Table 2-6 and Table 2-7 display the percentage of items per unit by each taxonomy level using the Marzano and Bloom's Taxonomy.

Unit	Level 1	Level 2	Level 3	Level 4	Level 5
Capitalization	75%	0%	25%	0%	0%
Parts of Speech	67%	33%	0%	0%	0%
Punctuation	77%	6%	17%	0%	0%
Sentence Structure	32%	43%	24%	0%	0%
Total	57%	26%	17%	0%	0%

Table 2-6: Marzano rating proportions for Language Arts skill list (N = 406). Level 1 - Retrieval, Level 2 - Comprehension, Level 3 - Analysis, Level 4 - Utilization, Level 5 - Goal Setting and Monitoring.

Unit	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Capitalization	21%	45%	9%	25%	0%	0%
Parts of Speech	4%	15%	81%	0%	0%	0%
Punctuation	3%	45%	35%	17%	0%	0%
Sentence Structure	4%	23%	49%	23%	1%	0%
Total	6%	29%	48%	16%	0%	0%

Table 2-7: Bloom rating proportions for Language Arts skill list (N = 406). Level 1 - Knowledge, Level 2 - Comprehension, Level 3 - Application, Level 4 - Analysis, Level 5 - Synthesis, Level 6 - Evaluation.

Science

Content Development

The science portion of the PERFORMANCE Series covers grades 2-8. The test assesses three units: Living Things, Ecology, and Science Processes.

A short description of each of the unit follows:

Living Things

The Living Things unit contains questions about the characteristics, structures, and functions of living things. Also included are genetics, evolution, and basic taxonomy. Evolution is included in the Science assessment, but is strictly limited to science with no discussion of religious theory. The topic is part of the National Science Education Standards (published by the National Research Council) and is accepted by the National Center for Science Education, the American Scientific Affiliation (ASA), the National Science Teachers Association, and the American Association for the Advancement of Science (publishers of Benchmarks for Science Literacy). Also, evolution is a key scientific concept that is necessary for the understanding of many other topics in life science and ecology.

Ecology

In the Ecology unit, students apply their knowledge of the interactions between living things and their environments. Students are also assessed on environmental issues, such as pollution and conservation, as well as ecological principles, such as food webs and biomes.

Science Process Skills

In the Science Process Skills unit, students encounter items concerning scientific experimentation, data collection and analysis.

Item Development

All science items included in the test are exclusively written for the PERFORMANCE Series. Once science items are created, they are submitted to the Item Development Team at large, for reviews of grade-level and contextual appropriateness. In addition, attention was given to ensure that there were not excessive language demands in any of the science word/story problems that appear in various units. Items that do not pass this level of review are returned to the writing team for editing and resubmission.

Depth of Knowledge Ratings

Table 2-8 and Table 2-9 display the percentage of items per unit by each taxonomy level using the Marzano and Bloom's Taxonomy.

Unit	Level 1	Level 2	Level 3	Level 4	Level 5
Living Things	50%	31%	18%	1%	0%
Ecology	35%	35%	30%	0%	0%
Science Process	28%	12%	52%	8%	0%
Total	40%	26%	31%	3%	0%

Table 2-8: Marzano rating proportions for Science skill list (N = 159). Level 1 - Retrieval, Level 2 - Comprehension, Level 3 - Analysis, Level 4 - Utilization, Level 5 - Goal Setting and Monitoring.

Unit	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Living Things	22%	57%	8%	13%	0%	0%
Ecology	27%	41%	19%	14%	0%	0%
Science Process	8%	10%	28%	36%	6%	12%
Total	19%	38%	17%	20%	2%	4%

Table 2-9: Bloom rating proportions for Science skill list (N = 159). Level 1 - Knowledge, Level 2 - Comprehension, Level 3 - Application, Level 4 - Analysis, Level 5 - Synthesis, Level 6 - Evaluation.

Item Development Team

The primary Item Development Team consists of full-time employees dedicated exclusively to researching and writing the item bank for the PERFORMANCE Series. In addition to their extensive education background and experience, each member of the team is required to complete in-house training courses on Item Writing and Item Banking. Training materials were developed from the following resources:

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. *Standards for Educational and Psychological Testing*. Washington, DC: American Psychological Association, 1999.

Haladyna, Thomas M. *Developing and Validating Multiple-Choice Test Items*. Mahwah, New Jersey: Lawrence Erlbaum Associates, 1999.

Roid, Gale H. and Thomas Haladyna. *A Technology for Test-Item Writing*. Orlando, Florida: Academic Press, 1982.

Target item-difficulty levels and curricular domains were assigned to the members of the Item Development Team, along with a library of specifically targeted resources (nationally adopted textbooks, grade appropriate literature, etc.) from which to draw. Items were submitted on a daily basis and initially reviewed for completeness, grammatical correctness, and grade appropriateness.

Item Editing

Upon completion of the initial item-writing phase of development, Item Development Team members and independent editors reviewed each item.

Items in the PERFORMANCE Series that did not successfully pass this level of review were returned to the writing team for editing and resubmission.

Independent Editor Team

As the Item Development Team develops initial items, those items are submitted to a team of independent editors for review. The Editor Team consists of professional educators (credentialed teachers and university professors) from around the United States and Canada. This team is tasked with carefully analyzing the content of each item, along with examining response choice construction and general proofreading. This review includes areas such as age appropriateness, interest level, bias, sentence structure, vocabulary, clarity, and grammar/spelling.

Bias Editors

A special team of educational experts from a sample of national educational communities representing diverse cultural backgrounds reviews and analyzes all item content.

Bias editors analyze how many stories/questions have male or female main characters, and whether each character has active or passive voice. In addition, the bias editors analyze which stories/questions contain ethnic or cultural diversity. If there happens to be a low percentage of one gender or a racial or gender-related misrepresentation, the Item Development Team makes adjustments to the particular passage/item ranging from minor revision to complete removal from the item bank.

Curriculum Alignment Guide

The Curriculum Alignment Guide enables the reports in the PERFORMANCE Series to reflect a state's standards for mathematics, language arts, and science. There are two types of standards: grade level standards and benchmark standards. The Curriculum Alignment Guide for each is very different. For a state that has grade level standards, the Curriculum Alignment Guide will span the grade levels that the document covers. Scantron also assigns a grade level to their mathematics courses and then assigns the Mathematics Level values based on that grade level.

For a state that has benchmark standards, the Curriculum Alignment Guide is very broad. For example, a state that has benchmarks at grade 4, grade 7, and grade 11 will only report scores at those grade levels.

We do not provide a Curriculum Alignment Guide for reading because the learning objectives for comprehension remain consistent throughout all grade levels. The readability of the passages is what changes. For example, in order to comprehend, students need to know how to draw conclusions at grade 2 as well as at grade 10. The context and details of the stories are what make that skill more difficult. The readability levels of our passages were designed using readability scales; therefore, a third grade passage in California should be the same as a third grade passage in New York.

3 Item Calibration

This chapter briefly summarizes all the item and test analysis related to the PERFORMANCE Series Item Pools.

Initial Pilot and Calibration

Mathematics and Reading

The items for mathematics and reading were exposed to examinees using a three-stage process for the purpose of item analysis, review, and Calibration. These stages were denoted as *Pilot Test* (to determine initial p-values and distractor functioning), *Field Test* (to obtain refined p-value and point biserial for each item), and *Calibration* with fixed, computer-administered forms (to determine item difficulties and to link items to a single common scale).

The initial Pilot Test of both mathematics and reading items was carried out in the fall and winter of 2000. These tests were administered in a non-adaptive paper-and-pencil format to a non-random sample of students. Initial Field Testing was carried out during spring 2001 in grades 2 through 8 only (due to resource and time constraints) for both mathematics and reading items.

Schools and districts from all across the United States were solicited for participation in the initial and final Field Test, as well as the Calibration stage of the PERFORMANCE Series item bank for both reading and mathematics (a list of participating schools is presented in Appendix G). The final Field Test stage and the Calibration stage were accomplished using a fixed-form collection of items grouped by grade level and administered via the Internet. A minimum of 200 students per grade level in each content area (reading and mathematics) was set as the target number of examinees for the Calibration stage.

After reviews of the results of the Initial Field Test, revisions were made and new fixed-form computer administered versions of the items were created for use in additional Field Testing (carried out in fall 2001, grades 2 - 12) and for the Calibration phase.

The fixed-form computer administered versions were created so that items were grouped by grade level appropriateness, as determined by the content development team. Grade level assignments for each item reflected an estimation of grade level placement of each item's associated underlying skill as described above. These items were then administered to students who were also grouped by grade level. The purpose was to gather data on item functioning when that item was administered to an appropriate collection of students.

The Field Test stage conducted during fall 2001 ultimately proved unsatisfactory due to a mismatch of item difficulty and student ability. Grade level forms were too difficult for administration at the beginning of the school year, as students had limited opportunities for acquiring the new grade level knowledge.

The final Field Test and Calibration stages were carried out during November 2001 through February 2002. During the Calibration stage, 8 to 10 anchor items were placed within each grade level item group for each of the fixed-form tests to allow for all items within a content area to be placed on a common difficulty scale. The anchor items were selected to provide adequate coverage of each testlet within each content area. To accommodate the number of items to be calibrated at each grade level, the groups of items were split into two forms, each containing the anchor items, to preserve the common difficulty scale within each content area. As a general rule during the Calibration stage, the desired p-value range for each item was between 0.30 and 0.75 to match what had been in effect from prior stages. Similarly, a general rule for point biserial values for each item was a minimum of 0.30. Grade 5 was selected as a starting point for creating the difficulty scale during the Calibration stage. During the Calibration stage, Scantron Corporation used the one-parameter Rasch model to determine all item calibrations. A summary of the existing item pool up to the spring 2003 administration is presented in Appendix E.

Language Arts and Science

Development for the Science and Language Arts PERFORMANCE Series tests began in summer of 2001 and followed a similar process as the previous two established subject areas. The first pilot stage began in the fall of 2002. During this first stage, responses were collected for traditional fixed form calibration sites with common items linking across forms for both subject areas. Schools and

districts from all across the United States were solicited for participation in the initial stage of analysis (a list of participating schools in presented in Appendix G). In the winter of 2002 - 2003, all responses were gathered and analyzed. The items were calibrated and returned to the content department for review. This first stage produced preliminary calibration results to be used in a Pilot CAT testing phase.

The Pilot CAT testing phase was ran in the spring of 2003 from April 1, 2003 to June 30, 2003. Existing customers from across the United States, along with other participating schools and districts contributed to this stage. A total of 419 Language Arts and 383 Science items, spanning grades 2 through 9 were used in this Pilot CAT phase. At the same time, new pilot items were introduced using our Item Embedding Process during administration of the Pilot test. New items were also calibrated on traditional fixed form sites with common items linking them to the common scale. After this Pilot CAT phase, all test responses were collected and recalibrated to strengthen the location of the items on the two scales. The Language Arts and Science PERFORMANCE Series tests were officially launched in the fall of 2003. A summary of the existing item pool up to the spring 2003 administration is presented in Appendix E.

Recalibration

In the summer of 2002, Scantron was faced with the task of recalibrating the mathematics and reading item pools in PERFORMANCE Series. Since the initial calibration was done on a small but sufficient sample size, we felt it necessary to recalibrate on a much larger sample of student responses in order to properly place the items on the difficulty scale. This would in turn increase our confidence in adding additional items to the pool by calibrating them on the same well established scale. An approach we attempted originally was to gather a collection of tests with a shared group of common items. This collection of tests with common items would then be calibrated using some calibration software. Due to the nature of the CAT test, we were not able to find an optimal number of tests with a common group of shared items that exceeded the original calibration sample sizes. The method we used to calibrate the entire item pools separately was an Iterative approach that is similar to the EM Algorithm used in calibrating response data. Verification of our Iterative approach was accomplished by

running the same data set through the WINSTEPS Rasch Software program. The results were very similar, preserving the ranking of the items with a Pearson correlation coefficient of greater than 0.9996 for both mathematics and reading. These new item difficulty parameters helped establish the difficulty scales for the mathematics and reading item pools.

In order to recalibrate the Science and Language Arts item pools after the pilot phase in the spring of 2003, we used the WINSTEPS Rasch Software program in place of the iterative algorithm. Using WINSTEPS to run the calibration was much faster than the first method and provided some additional results and diagnostics to examine.

Dimensionality

Frequently, one of the assumptions in a computer adaptive test is that the pool from which items are selected is unidimensional, i.e. the items in the pool all measure the same construct. This assumption is necessary because it "supports the idea that adaptively administered items produce tests with equivalent measures, that is, that they produce parallel forms" (Steinberg et al., 2000), regardless of the items presented during the test. Hence performance on an adaptive test between students can be compared, as well as subsequent test administrations for the same student. The property of unidimensionality also makes it possible to rank order the items by difficulty, allowing inferences on these items to be made based on the student's measured ability level. One of the features in the PERFORMANCE Series test that applies this fundamental idea is the concept of Suggested Learning Objectives (See Appendix H for details). This section summarizes the dimensionality of the items pools used in the PERFORMANCE Series online adaptive test. This analysis provides strong empirical evidence that the item pools are indeed unidimensional.

In this analysis, roughly 20,000 student test response vectors were sampled from the spring 2004 administration for each of the four PERFORMANCE Series subject tests, reflecting the item pools in spring 2004. The analysis was performed using WINSTEPS, a Rasch model-based computer program that performs a variety of analysis. The procedure used was a principal component analysis on the standardized residuals, which provided the empirical and modeled standardized residual variances for up to 5 factors.

In the following tables, the residual variances by subject area for the first factor identified in the response data are summarized. This first factor is the largest factor in the model *after* the Rasch dimension is extracted. All subsequent factors are of equal or smaller magnitude and of less importance. As a result, they are not included in this summary.

Source of Variance	Empirical		% Modeled
	Total	% of Total	
Total variance in observations	2570.3	100.0%	100.0%
Variance explained by measures	643.3	25.0%	26.1%
Unexplained variance (total)	1927.0	78.0%	73.9%
Unexplained variance by 1st factor	5.9	0.2%	

Table 3-1: Mathematics variance summary for first factor.

In the area of mathematics, a total of 19,918 students were used in the item pool analysis. Out of the 1,927 items in the pool, the first factor extracted 5.9 item residual variance noise, which constitutes less than one percent (0.2%) of unexplained variance. This suggests an absence of a meaningful factor in the item pool beyond the factor measured by the Rasch model, lending empirical support to the conclusion of unidimensionality for this item pool.

Source of Variance	Empirical		% Modeled
	Total	% of Total	
Total variance in observations	2874.3	100.0%	100.0%
Variance explained by measures	730.3	25.4%	27.0%
Unexplained variance (total)	2144.0	74.6%	73.0%
Unexplained variance by 1st factor	2.7	0.1%	

Table 3-2: Reading variance summary for first factor.

Likewise, in reading a total of 19,957 students were used in the item pool analysis. Out of the 2,144 items in the pool, the first factor extracted 2.7 item residual variance, constituting a mere 0.1% of unexplained variance. As in mathematics, this is strong evidence of unidimensionality of the item pool.

Source of Variance	Empirical		% Modeled
	Total	% of Total	
Total variance in observations	1279.5	100.0%	100.0%
Variance explained by measures	243.5	19.0%	19.5%
Unexplained variance (total)	1036.0	81.0%	80.5%
Unexplained variance by 1st factor	2.5	0.2%	

Table 3-3: Language Arts variance summary for first factor.

Consistent findings were found for Language Arts and Science. A total of 20,105 students were used in the Language Arts item pool analysis. Out of the 1,036 items in the pool, the first factor extracted 2.5 item residual variance, accounting for just 0.2% of unexplained variance (see Table 3). In Science, a total of 19,981 students were used in the item pool analysis. Out of the 926 items in the pool, the first factor extracted just 2.4 item residual variance noise, or 0.2% of unexplained variance (see Table 4). Again, this provides evidence of item pool unidimensionality.

Source of Variance	Empirical		% Modeled
	Total	% of Total	
Total variance in observations	1138.6	100.0%	100.0%
Variance explained by measures	212.6	18.7%	19.6%
Unexplained variance (total)	926.0	81.3%	80.4%
Unexplained variance by 1st factor	2.4	0.2%	

Table 3-4: Science variance summary for first factor.

The results for each subject area show strong evidence for the unidimensionality of the item pools used in the PERFORMANCE Series assessment. As a result, these findings provide strong support for the assumptions underlying the IRT-based scoring model and the validity of the PERFORMANCE Series computer adaptive test. A dimensionality analysis will need to be revisited as the item pool is replenished with new items. This analysis is scheduled into the PERFORMANCE Item Development Process to ensure appropriate function of the test.

Differential Functioning

Differential Item Functioning

A common definition for differential item functioning (DIF) is differential item performance by subpopulations of examinees that are equal in the underlying trait measured by the test (Cole & Moss, 1989). In the spring of 2003, Scantron set out to identify items in the PERFORMANCE Series Item Pools for all four subject areas that displayed extreme unexpected differences in performance across subpopulations with the same measured mathematics ability. We targeted the extreme unexpected differences since some sources of DIF by subpopulations may be appropriate and contribute to valid test score interpretations (Plake, 1995).

The DIF analysis was performed on PERFORMANCE Series test results for all four subjects. Data was collected for the Mathematics and Reading analysis from the spring 2003 administration, while fall 2003 scores were used for the Science and Language Arts analysis. Mathematics and Reading data was gathered from well over 120,000 tests in over 1,000 locations in 28 states across the United States. The Science and Language Arts data consisted of well over 35,000 tests sessions in roughly 250 sites across 20 states. The subpopulations used in this analysis were gender and ethnicity (Caucasian, African-American, and Hispanic).

The analysis was performed using the Rasch software package WINSTEPS. Items with a difference of more that 0.60 logits (two standard errors of measurement in the test) for any subgroup comparison were identified and removed from the item pool. This value as a meaningful determination point is consistent with the research literature. Wright & Douglas (1975) suggest an upper limit on item calibration misestimation of 1.0 logits because “we found a

large area of the test design domain to be exceptionally robust with respect to independent item discrepancies." Wright & Douglas (1976) also state that when test length is greater than 20 items, item calibration misestimation as high as 0.50 logits has a negligible effect on measurement. We selected the 0.60 logit misestimation limit since it falls well below the 1.0 logit upper limit and the test length of the majority of mathematics tests is generally more than 45 items. The summary of the analysis is presented in Table 3-5. All items removed for DIF were permanently removed from the item pool.

Subject Area	Total Items in Analysis	Total Removed for DIF	% Removed
Reading	642	64 *	10 %
Mathematics	895	107	12 %
Language Arts	445	11	3 %
Science	703	62	9 %

Table 3-5: Summary of DIF analysis for all four subject areas. * - These items also included 4 passages that were removed.

Differential Test Functioning

In addition to differential item analyses, we also performed differential test functioning (DTF) analyses to examine the overall test effect of potentially biased items within the four subject area item pools. A random sample of tests administered during these same spring 2003 and fall 2003 periods was collected. Using these item response vectors, each test was rescored using the six different sets of item calibration estimates (Male, Female, African-American, Caucasian, and Hispanic), calculating student ability estimates using each scale. These student ability estimates were then compared to see if any measurable differences would result from differences in item calibrations. It is important to note that this procedure included *all* the items from the item pool, regardless of whether they were later removed due to the prior DIF analyses bias (i.e., those items exhibiting difficulty estimate differences beyond 0.6 logits). Thus, the DTF analyses indicated whether bias exists at the test level, even when a few biased items are potentially included in the test for a given student.

Scatter plots of individual test scores for Gender and Ethnicity comparisons were examined for all subject areas. The plots illustrate that the difference in test

scores using the different subpopulation item difficulty estimates is negligible and that the differing student ability estimates yield an almost perfect correlation. The squared correlation between student ability estimates using the differing group item difficulty estimates exceeds .997 in all comparisons for all four subject areas. This provides strong support that the PERFORMANCE Series tests are fair, equitable, and exhibit no differential functioning at the aggregate test level for either gender or ethnic comparisons.

Replenishing Item Pools

Item Embedding

As more and more students test on the PERFORMANCE Series, the items within the pools reach dangerous overexposure levels. Overexposure can lead to a variety of problem and compromise the validity of the test. Scantron has developed an online calibration process known as the Item Embedding Process to help replenish the pools with new high quality performing items. Using this Item Embedding Process, Scantron introduces an average of 5,000 new items for all four subject areas every year. The process is briefly summarized below.

Trial items are presented at the end of each unit or passage based on a set of Item Selection criteria. As the students flow through tests, responses to the trial items are collected in four separate stages. After each stage, a check is performed on the trial item's performance statistics (proportion correct, point biserial correlations, standard error of measurement for item difficulty, and item difficulty parameter). These statistics are computed using the trial item responses and student preliminary proficiencies. The preliminary proficiencies are the overall test proficiency of the student at the time the trial item is presented. In the first stage, responses are collected from students in the same grade level as the item. Responses continue to be collected in stages two, three, and four, from students that now match only a targeted proficiency range determined prior to those stages. If a trial item successfully passes all four-stage checks, it proceeds through the Final Calibration Stage. In this final stage, similar checks are performed using item statistics based on the students' final test proficiency estimates. Only items with statistics meeting a minimum required value are marked as passed and evaluated by the content department for inclusion into the live item pool.

4 Reliability and Validity

All item-bank statistics, analyses, and procedures used to illustrate the concepts of reliability and validity as they relate to the PERFORMANCE Series were reviewed for completeness and accuracy by a statistical team.

Reliability and Standard Error of Measurement

According to the Standards for Educational and Psychological Testing, reliability refers to "the degree that true scores are free from errors of measurement." That is, measurements are consistent when repeated on a population of examinees. In classical test theory, reliability is defined as the ratio of true score variance to the observed score variance. Reliability is usually expressed as a single number (e.g., Cronbach's alpha). Depending on the audience, the standard error of measurement is sometimes used.

A more meaningful index for both classical and Item Response Theory (IRT) based assessment tools is the standard error of measurement. This measure of precision specifies a confidence interval within which an examinee's measure will fall with repeated assessments. In Computer Adaptive Testing (CAT), where examinees are exposed to different sub-sets of items, the only meaningful way to express an instrument's reliability/precision is through the error associated with an examinees' ability estimate, that is, the standard error of measurement.

Scantron's goal (in fact, one of the test stopping criteria) is a standard error of measurement of less than 0.30 logits for each examinee. This is roughly equivalent to a conventional reliability coefficient of 0.91. Although this is one of the stopping criteria for the test, the standard error of measurement will vary for each examinee. The majority of the tests finish with a standard error of measurement less than 0.30. Table 4-1 displays *mean* standard error of measurement (SEM) and *number of items* administered across grade level groups in Mathematics during the spring 2004 administration.

Grade Level	SEM (Mean)	SEM (SD)	# Items (Mean)	# Items (SD)	N
2	0.29	0.02	52.5	6.0	16,522
3	0.28	0.01	53.8	6.4	16,349
4	0.27	0.02	60.3	7.6	21,811
5	0.27	0.01	61.0	7.1	16,702
6	0.27	0.01	60.6	6.7	21,236
7	0.27	0.02	59.8	6.2	20,802
8	0.27	0.02	59.6	6.2	13,343
9	0.27	0.03	60.0	6.7	5,091
10	0.27	0.02	59.5	6.4	2,213
11	0.28	0.04	59.5	6.3	1,685
12	0.28	0.04	59.9	6.6	1,160
Totals	**0.27**	**0.02**	**58.5**	**7.3**	**136,914**

Table 4-1: SEM and Item per test count statistics. Spring 2004 - Mathematics

The number of reading passages seen by examinees influences the number of items administered within the PERFORMANCE Series Reading content area. Administering more items to achieve a lower standard error of measurement (comparable to that seen in the Mathematics content area) necessitates the reading of additional passages by most examinees. Examinees requiring additional items to meet the standard error of measurement threshold set by Scantron will, in some cases, need to read an entire new passage and respond to its associated group of items. This contributes to the increased variability in the number of items administered and larger *mean* standard error of measurement compared to the Mathematics content area. Table 4-2 indicates *mean* standard error of measurement and *number of items* administered across grade level groups in Reading for tests administered in spring 2004.

Similar summary statistics are presented in Table 4-3 for Language Arts and Table 4-4 for Science for tests completed in the spring of 2004. The nature of test for these two subject areas are the same as mathematics (i.e. no passages) hence we see comparable results in *mean* standards error of measurement for these subject areas.

Grade Level	SEM (Mean)	SEM (SD)	# Items (Mean)	# Items (SD)	N
2	0.37	0.17	41.2	11.9	16,940
3	0.34	0.12	45.0	8.9	17,828
4	0.32	0.08	46.3	6.8	21,632
5	0.32	0.07	46.6	6.1	16,617
6	0.31	0.05	47.9	5.5	20,423
7	0.32	0.05	48.0	5.2	20,558
8	0.31	0.05	48.4	5.0	11,485
9	0.32	0.08	47.9	6.4	6,369
10	0.32	0.06	48.3	5.1	2,477
11	0.32	0.05	48.7	4.9	1,619
12	0.33	0.08	48.2	5.2	1,216
Totals	**0.33**	**0.09**	**46.4**	**7.6**	**137,164**

Table 4-2: SEM and Item per test count statistics. Spring 2004 - Reading

Grade Level	SEM (Mean)	SEM (SD)	# Items (Mean)	# Items (SD)	N
2	0.30	0.03	49.0	4.1	10,348
3	0.30	0.02	49.8	3.6	4,669
4	0.29	0.02	50.0	3.3	9,728
5	0.29	0.01	50.1	3.1	4,873
6	0.30	0.01	49.6	3.3	10,296
7	0.30	0.02	49.3	3.5	9,903
8	0.30	0.01	49.2	3.1	3,325
9	0.30	0.03	49.8	3.4	646
10	0.30	0.02	49.5	3.1	546
11	0.30	0.02	49.1	3.1	418
12	0.30	0.02	48.8	3.4	193
Totals	**0.30**	**0.02**	**49.5**	**3.5**	**54,945**

Table 4-3: SEM and Item per test count statistics. Spring 2004 - Language Arts

Grade Level	SEM (Mean)	SEM (SD)	# Items (Mean)	# Items (SD)	N
2	0.29	0.02	52.2	6.9	7,634
3	0.28	0.02	53.4	4.9	1,528
4	0.28	0.01	54.2	3.5	9,117
5	0.28	0.01	54.1	3.3	1,829
6	0.28	0.02	54.0	3.8	883
7	0.28	0.01	54.1	3.5	8,880
8	0.28	0.01	54.1	3.4	513
9	0.29	0.03	54.6	3.8	227
10	0.28	0.02	54.4	3.8	208
11	0.29	0.02	53.2	4.0	114
12	0.29	0.03	53.4	4.4	61
Totals	**0.28**	**0.02**	**53.6**	**4.7**	**30,994**

Table 4-4: SEM and Item per test count statistics. Spring 2004 - Science

Validity

The Standards for Educational and Psychological Testing define validity as "the degree to which accumulated evidence and theory support specific interpretations of test scores entailed by proposed uses of a test." To put it another way, a test should not be considered valid in an absolute sense. Rather, the validity of a test should be considered within the context of the groups to be tested, and the desired interpretation of test results.

Much of Scantron's validity research has been an effort to "accumulate evidence" as the Standards for Educational and Psychological Testing indicate. The results of these efforts are categorized below.

Content Validity

Content validity refers to the degree to which a test measures an indicated content area. Presently, the content areas within the PERFORMANCE Series are Mathematics, Reading, Language Arts, and Science. In an attempt to illustrate the content validity of the PERFORMANCE Series with regard to these content areas, Scantron examined the concepts of item validity and sampling validity,

both of which are necessary components of content validity. Item validity focuses on the degree to which test items are relevant in measuring the desired content area. Sampling validity focuses on how well items selected for the test sample or span the content area. Due to the newness of the Language Arts and Science components of the PERFORMANCE Series, no concurrent validity research on them has been completed at this time. The tasks described below regarding Item Validity and Sampling Validity are, however, in place for both Language Arts and Science.

Item Validity

Scantron began the item development process by creating a list of skills through research of individual state standards, state assessment programs, and the National Assessment of Educational Progress (NAEP). In addition, those standards proposed by national organizations such as the National Council of Teachers of Mathematics (NCTM) and the National Council of Teachers of English (NCTE) were also reviewed.

Much of this research was performed during the creation and regular update of Scantron's *Curriculum Designer* product, which has taken place over the last ten years. The *Curriculum Designer* database of skills and objectives is aligned to standards and assessment documents from around the country that have been created within the last fifteen years. As a result, trends in education and assessment (from a skills and objectives perspective) were analyzed during the development of the PERFORMANCE Series skill list.

Using *Curriculum Designer*, similar elements (standards, skills, objectives, competencies) spanning any combination of documents contained within its database are readily identified. Therefore, a core of these most common elements, taken within and across grade levels, can be determined. The PERFORMANCE Series skill list represents this core group of skills.

Scantron content team members developed all items that appear within the PERFORMANCE Series. Each item that exists within the item bank was written to measure a skill from the PERFORMANCE Series skill list at the appropriate grade level. In order to ensure the uniformity of the construction of items within the PERFORMANCE Series item bank, Scantron developed a process for training content team members on item development. This training consisted of a hands-

on program designed to enable content team members to transfer their content area knowledge and classroom teaching experience into successful item development. In addition to their training, all content team members received the *Scantron Item Development Training Manual* as a reference tool.

As prospective items are developed, they are subjected to an external evaluation by a panel of content area experts. New items are reviewed for:

- Item alignment with the indicated skill at the appropriate grade level
- Item content and quality (accuracy of content, overall clarity, one unambiguous answer)
- Item bias (to ensure that the item did not demonstrate gender, racial/ethnic, and/or socioeconomic bias)
- Gender count for passive/active voice. Reading passages are reviewed to ensure that male/female main characters are written in an equal number of instances with regard to passive/active voice.

The items are then returned to the Scantron content team to make changes based on the recommendation of the external evaluation panel. This process is repeated to ensure that corrections were made as the evaluation panel intended, and that no new errors or problems with the items were introduced during the rewrite/editing process. Items failing this external review are eliminated from further consideration for entry into the PERFORMANCE Series item bank. Items passing this external review process are deemed to be relevant to the task of measuring their respective content areas.

Sampling Validity

In order to possess a high degree of sampling validity, an assessment must include items that span the given content area. To address this need, the PERFORMANCE Series content areas are divided into sub-areas or units that function as independent testlets during test administration. Examinees in any content area are required to be exposed to items from the many component testlets that make up that content area. This is accomplished through Scantron's item selection algorithm. As a result, no examinee's PERFORMANCE Series experience is restricted to a minute subset of a given content area.

Inter-Testlet Correlation

To illustrate the concepts of item and sampling validity of the PERFORMANCE Series in a more quantitative manner, Scantron has examined the correlation of examinee scores between the component testlets within each content area. Most of the table entries indicate a fairly good (> 0.65) correlation coefficient. This indicates that test items within each of the component testlets in each content area are measuring their segment of the overall content area at about the same level. Also, examinees are not exposed to wide ranges of items (with regard to difficulty) from one testlet to the next within a given content area unless their ability within each testlet warrants such a variation.

In addition to making a statement about content validity, Table 4-5 through Table 4-8 below serve to illustrate, in an indirect manner, the degree of precision in item difficulty calibration, as well as the proper functioning of Scantron's item selection algorithm. These tables summarize the inter-testlet correlations within the four content areas tested in PERFORMANCE. All tables represent examinee results during the Spring 2004 administration period. Intercorrelations partitioned by grade level are available upon request.

Mathematics All Grades N = 134,748	Overall	Decimals	Whole Numbers	Fractions	Geometry & the Coordinate Plane	Data Analysis & Probability	Algebra, Patterns, & Functions	Real Numbers	Measurement
Overall	1.000	0.841	0.853	0.808	0.838	0.857	0.876	0.747	0.843
Decimals	0.841	1.000	0.721	0.610	0.645	0.677	0.699	0.512	0.671
Whole Numbers	0.853	0.721	1.000	0.637	0.690	0.693	0.740	0.524	0.693
Fractions	0.808	0.610	0.637	1.000	0.602	0.628	0.636	0.463	0.603
Geometry & the Coordinate Plane	0.838	0.645	0.690	0.602	1.000	0.686	0.729	0.564	0.683
Data Analysis & Probability	0.857	0.677	0.693	0.628	0.686	1.000	0.719	0.518	0.697
Algebra, Patterns, & Functions	0.876	0.699	0.740	0.636	0.729	0.719	1.000	0.586	0.718
Real Numbers	0.747	0.512	0.524	0.463	0.564	0.518	0.586	1.000	0.517
Measurement	0.843	0.671	0.693	0.603	0.683	0.697	0.718	0.517	1.000

Table 4-5: Inter-testlet correlation coefficients for Mathematics tests completed in spring 2004. This unit structure does not reflect that of the NCTM units. This analysis was done prior to the unit modifications.

Reading All Grades N = 134,247	Overall	Vocabulary	Fiction	Nonfiction	Long Passage
Overall	1.000	0.967	0.823	0.825	0.855
Vocabulary	0.967	1.000	0.748	0.754	0.780
Fiction	0.823	0.748	1.000	0.842	0.858
Nonfiction	0.825	0.754	0.842	1.000	0.855
Long Passage	0.855	0.780	0.858	0.855	1.000

Table 4-6: Inter-testlet correlation coefficients for Reading tests completed in spring 2004.

Language Arts All Grades N = 54,560	Overall	Capitalization	Parts of Speech	Punctuation	Sentence Structure
Overall	1.000	0.874	0.882	0.898	0.915
Capitalization	0.874	1.000	0.678	0.745	0.726
Parts of Speech	0.882	0.678	1.000	0.706	0.774
Punctuation	0.898	0.745	0.706	1.000	0.751
Sentence Structure	0.915	0.726	0.774	0.751	1.000

Table 4-7: Inter-testlet correlation coefficients for Language Arts tests completed in spring 2004.

Science Overall N = 30,807	Overall	Living Things	Ecology	Science Process
Overall	1.000	0.914	0.933	0.937
Living Things	0.914	1.000	0.778	0.793
Ecology	0.933	0.778	1.000	0.815
Science Process	0.937	0.793	0.815	1.000

Table 4-8: Inter-testlet correlation coefficients for Science tests completed in spring 2004.

Criterion - Related Validity

One type of criterion-related validity is concurrent validity. Concurrent validity indicates the degree to which performance on two separate assessments is correlated. Scantron has been engaged in concurrent validity research since the initial release of the PERFORMANCE Series. Some of the most recent results appear for the Mathematics and Reading portion of PERFORMANCE are summarized Table 4-9 and Table 4-10 below for the following standardizes assessments:

CAHSEE California High School Exit Exam
CAT6 California Achievement Test version 6
CST California Standards Test
FCAT Florida Comprehensive Assessment Test
ISAT Illinois Standards Achievement Test
ITBS Iowa Test of Basic Skills
SAT9 Stanford Achievement Test

PERFORMANCE Series Mathematics Correlations

Test	Grade	Date	N	Pearson	State
CAHSEE	10	Spring 2003	344	0.741	CA
	11	Spring 2003	44	0.553	CA
CAT6	2	Spring 2003	551	0.655	CA
	3	Spring 2003	578	0.738	CA
	4	Spring 2003	627	0.753	CA
	5	Spring 2003	571	0.780	CA
	6	Spring 2003	581	0.760	CA
	7	Spring 2003	563	0.712	CA
	8	Spring 2003	534	0.772	CA
	9	Spring 2003	439	0.741	CA
	10	Spring 2003	380	0.705	CA
	11	Spring 2003	303	0.710	CA
CST - General Math	2	Spring 2003	552	0.730	CA
	3	Spring 2003	557	0.790	CA
	4	Spring 2003	627	0.789	CA
	5	Spring 2003	573	0.812	CA
	6	Spring 2003	581	0.772	CA
	7	Spring 2003	565	0.775	CA
	8	Spring 2003	457	0.818	CA
	9	Spring 2003	283	0.772	CA
CST Algebra I	HS	Spring 2003	325	0.722	CA
CST Algebra II	HS	Spring 2003	100	0.658	CA
CST Geometry	HS	Spring 2003	199	0.752	CA
FCAT[1]	3	Spring 2003	162	0.724	FL
	4	Spring 2003	188	0.811	FL
	5	Spring 2003	69	0.871	FL
FCAT[2]	3	Spring 2003	162	0.721	FL
	4	Spring 2003	188	0.851	FL
	5	Spring 2003	69	0.818	FL

PERFORMANCE Series Mathematics Correlations					
Test	**Grade**	**Date**	**N**	**Pearson**	**State**
ISAT	3	Spring 2003	185	0.816	IL
	3	Spring 2003	261	0.793	IL
	3	Spring 2003	216	0.807	IL
	5	Spring 2003	215	0.766	IL
	5	Spring 2003	269	0.819	IL
	5	Spring 2003	217	0.857	IL
	8	Spring 2003	16	0.742	IL
	8	Spring 2003	393	0.856	IL
	8	Spring 2003	19	0.893	IL
	8	Spring 2003	481	0.821	IL
ITBS	2	Spring 2002	136	0.336	OK
	3	Spring 2002	1,013	0.649	OK
	4	Spring 2003	1,388	0.837	GA
	4	Spring 2002	984	0.760	OK
	5	Spring 2002	954	0.765	OK
	6	Spring 2003	3,372	0.858	GA
	6	Spring 2002	726	0.764	OK
	7	Spring 2002	791	0.796	OK
	8	Spring 2002	774	0.848	OK
	9	Spring 2002	621	0.724	OK
	10	Spring 2002	416	0.674	OK
	11	Spring 2002	268	0.728	OK
	12	Spring 2002	199	0.727	OK
SAT9	2	Spring 2002	476	0.733	SD
	3	Spring 2002	981	0.709	OK
	4	Spring 2002	910	0.801	SD
	8	Spring 2002	747	0.814	SD
	11	Spring 2002	546	0.761	SD

Table 4-9: Mathematics concurrent-validity.

PERFORMANCE Series Reading Correlations					
Test	**Grade**	**Date**	**N**	**Pearson**	**State**
CAHSEE	10	Spring 2003	373	0.830	CA
	11	Spring 2003	125	0.738	CA
CAT6 - English Language Arts	2	Spring 2003	547	0.676	CA
	3	Spring 2003	576	0.717	CA
	4	Spring 2003	625	0.700	CA
	5	Spring 2003	568	0.757	CA
	6	Spring 2003	580	0.676	CA
	7	Spring 2003	555	0.576	CA
	8	Spring 2003	521	0.635	CA
	9	Spring 2003	353	0.654	CA
	10	Spring 2003	330	0.578	CA
	11	Spring 2003	338	0.569	CA
CAT6 - Reading	2	Spring 2003	547	0.698	CA
	3	Spring 2003	576	0.734	CA
	4	Spring 2003	625	0.719	CA
	5	Spring 2003	568	0.771	CA
	6	Spring 2003	580	0.695	CA
	7	Spring 2003	555	0.699	CA
	8	Spring 2003	521	0.757	CA
	9	Spring 2003	353	0.698	CA
	10	Spring 2003	330	0.598	CA
	11	Spring 2003	338	0.584	CA
CST - English Language Arts	2	Spring 2003	545	0.790	CA
	3	Spring 2003	574	0.816	CA
	4	Spring 2003	625	0.797	CA
	5	Spring 2003	574	0.802	CA
	6	Spring 2003	581	0.784	CA
	7	Spring 2003	556	0.789	CA
	8	Spring 2003	519	0.740	CA
	9	Spring 2003	354	0.729	CA
	10	Spring 2003	332	0.731	CA
	11	Spring 2003	343	0.733	CA
FCAT[1]	3	Spring 2003	162	0.800	FL
	4	Spring 2003	191	0.836	FL
	5	Spring 2003	68	0.857	FL
FCAT[2]	3	Spring 2003	162	0.793	FL

PERFORMANCE Series Reading Correlations					
Test	**Grade**	**Date**	**N**	**Pearson**	**State**
	4	Spring 2003	191	0.859	FL
	5	Spring 2003	68	0.837	FL
ISAT	3	Spring 2003	188	0.823	IL
	3	Spring 2003	330	0.838	IL
	3	Spring 2003	212	0.808	IL
	5	Spring 2003	220	0.761	IL
	5	Spring 2003	327	0.817	IL
	5	Spring 2003	217	0.768	IL
	8	Spring 2003	21	0.607	IL
	8	Spring 2003	394	0.831	IL
	8	Spring 2003	19	0.755	IL
	8	Spring 2003	474	0.833	IL
ITBS	2	Spring 2002	236	0.465	OK
	3	Spring 2002	1,068	0.693	OK
	4	Spring 2003	1,399	0.845	GA
	4	Spring 2002	1,071	0.811	OK
	5	Spring 2002	1,098	0.790	OK
	6	Spring 2003	3,491	0.859	GA
	6	Spring 2002	867	0.826	OK
	7	Spring 2002	1,108	0.814	OK
	8	Spring 2002	968	0.798	OK
	9	Spring 2002	766	0.828	OK
	10	Spring 2002	513	0.776	OK
	11	Spring 2002	314	0.695	OK
	12	Spring 2002	255	0.708	OK
SAT9	2	Spring 2002	520	0.756	SD
	3	Spring 2002	1,033	0.818	OK
	4	Spring 2002	931	0.747	SD
	8	Spring 2002	841	0.708	SD
	11	Spring 2002	658	0.613	SD

Table 4-10: Reading concurrent-validity

[1] Norm Reference portion of the Florida Comprehensive Assessment Test.
[2] Criterion-referenced portion measuring the Sunshine State Standards.

5 Norming Procedure

Creation and Composition of Norm Groups

In response to customer requests for a means to compare their students' results on the PERFORMANCE Series with those results of other students across the country, Scantron developed norms for fall and spring administrations of the PERFORMANCE Series. The created norms are "user" norms, where the norm groups for fall and spring were samples from the database of all examinee results during fall 2002 and spring 2003.

Norm groups were created for students in grades 2 through 8, and for high school students. Fall and spring groups were created independently, however, the possibility exists that some examinees may be members of both groups.

Criteria used for creation of these initial norm groups were gender, ethnicity, and geographic region. In the case of ethnicity and gender, target proportions were set to match national population levels. Ethnicity, gender, and geographic region were selected to provide the largest possible group from which to sample in order to create each group. Many customers provided additional demographic information, and with the planned growth of the PERFORMANCE Series customer base, it is expected that relevant additional demographic components such as Socio-Economic Status and English fluency status will be incorporated in the creation of subsequent norm groups. At this time, norms exist only within the areas of Mathematics and Reading. It is expected that norms for Science and Language Arts will be available during the 2004-2005 school year.

Norm Sample Characteristics

Geographical Location and Ethnicities

The geography of the sample was broken down into the following four regions: Region 1 - composed of the central states, Region 2 - composed of the western states including Alaska and Hawaii, Region 3 - composed of the northeastern states, and Region 4 - composed of the southeastern states.

Region 1	**Region 2**	**Region 3**	**Region 4**
Arizona	Alaska	Connecticut	Alabama
Arkansas	California	Delaware	Florida
Colorado	Hawaii	District of Columbia	Georgia
Kansas	Idaho	Illinois	Kentucky
Louisiana	Iowa	Indiana	Mississippi
Missouri	Minnesota	Maine	North Carolina
New Mexico	Montana	Maryland	South Carolina
Oklahoma	Nebraska	Massachusetts	
Tennessee	Nevada	Michigan	
Texas	North Dakota	New Hampshire	
Utah	Oregon	New Jersey	
	South Dakota	New York	
	Washington	Ohio	
	Wisconsin	Pennsylvania	
	Wyoming	Rhode Island	
		Vermont	
		Virginia	
		West Virginia	

The five ethnic groups that were sampled were:

- African American
- American Indian or Alaskan Native
- Asian or Pacific Islander
- Caucasian
- Hispanic

Targeted Samples

In developing the norm sample, the following criteria and targeted sample proportions were determined. Table 5-1 summarizes the targeted proportions for each region, gender, and ethnicity groups in the sample. This criteria was applied at all grade levels. Additional information is detailed in Appendix F.

Criteria	Goal
Region 1	20.9%
Region 2	23.5%
Region 3	38.7%
Region 4	16.9%
Male	49.0%
Female	51.0%
African American	11.8%
American Indian or Alaskan Native	0.9%
Asian or Pacific Islander	3.6%
Caucasian	71.9%
Hispanic	11.8%

Table 5-1: Targeted sample proportions for norm data.

Norm Summary

These two sections provide a quick summary of results of the norm sample. Table 5-2 and Table 5-3 presented below were created to assist teachers in developing an understanding of the meaning of a Scaled Score. Although PERFORMANCE Series does not derive a grade equivalent for the norm sample, a range of Scaled Scores associated to grade levels is derived. The following tables list the interquartile range from the distribution of Scaled Score by grade level.

Norm	Grade	Percentile		
		25th	50th	75th
Fall 02	2	1937	2027	2128
Fall 02	3	2100	2202	2293
Fall 02	4	2228	2326	2418
Fall 02	5	2319	2421	2508
Fall 02	6	2401	2503	2598
Fall 02	7	2458	2582	2698
Fall 02	8	2510	2649	2779
Fall 02	HS	2572	2755	2897
Spring 03	2	2059	2171	2264
Spring 03	3	2195	2306	2399
Spring 03	4	2320	2423	2518
Spring 03	5	2395	2508	2615
Spring 03	6	2474	2608	2734
Spring 03	7	2524	2666	2802
Spring 03	8	2562	2719	2860
Spring 03	9 - 12	2587	2772	2926

Table 5-2: Interquartile Scaled Score ranges for Mathematics norm sample.

Norm	Grade	Percentile		
		25th	50th	75th
Fall 02	2	1906	2040	2183
Fall 02	3	2048	2224	2397
Fall 02	4	2169	2370	2568
Fall 02	5	2315	2523	2709
Fall 02	6	2440	2657	2818
Fall 02	7	2525	2723	2881
Fall 02	8	2584	2774	2931
Fall 02	HS	2663	2856	2996
Spring 03	2	1917	2141	2338
Spring 03	3	2118	2329	2533
Spring 03	4	2294	2526	2719
Spring 03	5	2412	2636	2803
Spring 03	6	2540	2747	2923
Spring 03	7	2630	2823	3013
Spring 03	8	2677	2881	3067
Spring 03	9 - 12	2760	2972	3165

Table 5-3: Interquartile Scaled Score ranges for Reading norm sample.

Observed Gain in Norm Sample

The following tables summarize the observed gain from the fall 2002 and spring 2003 norm samples. In order to observe gains in the PERFORMANCE Series norm samples, we matched scores from the same percentile for each testing period (not necessarily the same students). For example, the scores at the 50th percentile in the fall were compared to scores in the 50th percentile in the spring. In an effort to avoid outliers only the interquartile scores were used (scores between the 25th and 75th percentile). The fall 2002 interquartile Scaled Score range is reported for each grade level. For the scores in this interquartile range, the fall to spring gain range is also listed. For example, second grade students had Scaled Score ranges from 1937 to 2128. These same second graders gained between 122 and 145 Scaled Score units on their subsequent test in the spring.

Grade Level	Mathematics		Reading	
	Fall Interquartile Scaled Score Range	Observed Gain Fall to Spring	Fall Interquartile Scaled Score Range	Observed Gain Fall to Spring
2	[1937 - 2128]	122 - 145	[1906 - 2183]	11 - 155
3	[2100 - 2293]	95 - 109	[2048 - 2397]	70 - 136
4	[2228 - 2418]	92 - 100	[2169 - 2568]	124 - 163
5	[2319 - 2508]	76 – 107	[2315 - 2709]	94 - 115
6	[2401 - 2598]	73 – 136	[2440 - 2818]	84 - 105
7	[2458 - 2698]	66 – 104	[2525 - 2881]	100 - 132
8	[2510 - 2779]	52 - 81	[2584 - 2931]	93 - 136
9 - 12	[2572 - 2897]	15 - 29	[2663 - 2996]	94 - 169

Table 5-4: Observed gains in Mathematics and Reading for 2002-2003 norm sample.

6 Test Structure

Scantron's Approach to Computer Adaptive Testing

The purpose of any computer adaptive test is to estimate a measure of an examinee's ability level. An exact measure of student ability can never be achieved. However, a true estimate of examinee ability can be approached within an acceptable level of error. Scantron's approach to Computer Adaptive Testing will be broken into three separate parts. These are:

- Test Starting Procedures
- Test Continuation from Item to Item
- Test Stopping Criteria

Each will be discussed in a section below.

Test Starting Procedures

To begin a computer adaptive test, an estimate of the examinee's ability level is needed. In theory, any guess would be acceptable, since the CAT test will eventually select appropriate items and 'zero-in' on the true ability level. In practice, it is best to 'zero-in' using the fewest possible number of items. In addition, beginning the examinee with questions aimed at a much higher ability can cause frustration, and beginning the examinee with questions for a lower ability can lead to the loss of interest in the test. The closer we begin to the true ability level, the higher the efficiency of the CAT. A frequently used method is to assume that the initial ability level for the examinee is near the average ability level of all examinees at that grade level.

The PERFORMANCE Series test has some additional features that take effect at the start of a test. If a class of sixth graders all started the test at the same time, the test would assume an initial ability level of an average sixth grader for all of them, and they would all see the same question! This presents an opportunity for cheating. To avoid this, at the beginning of the test, Scantron randomly assigns a fixed number of items 'near' the average proficiency level of a sixth grader.

There is a small chance that any two students at the same grade level would see the same first item, and an even smaller chance for them to see the same first three items. To build the examinee's confidence in the test, the first random items are adjusted to be lower in difficulty. Subsequent items are then matched with the students estimated ability. So, a class of sixth graders will begin the test with a few random items that rank somewhere near a fifth grade level and gradually increase to their true ability level.

Test Continuation

Continuing the test is a simple process, but can be complicated to implement. The process, also known as the Item Selection Algorithm, is as follows:

Step 1. Use the present ability estimate to select next appropriate item.

Step 2. Administer the item.

Step 3. Update the ability estimate.

Step 4. If stopping criteria is met, STOP, else go to Step 1.

Selecting the next appropriate item involves selecting the item that will maximize the information function and therefore reducing the error of measurement for the ability estimate. Using this method translates to selecting the item that will give the examinee a fifty percent chance of answering the item correctly. Once the examinee answers the item, the ability estimate is updated using the method of maximum likelihood. This process continues until some stopping criteria are achieved.

The PERFORMANCE Series test has some additional features when continuing a test. Since this is a standards-based test, the item selection algorithm favors those items that are in a designated selection of state standards. For example, if there are two items to choose from that present the most information, one that is present in the examinee's state standards and the other that is not, the algorithm will select the item represented in the standards. The PERFORMANCE item selection algorithm also has a memory. If an examinee has seen an item in a previous administration of the test, the algorithm excludes that item from the selection process.

Test Stopping Criteria

There are several stopping criteria used in a CAT. They are based on a maximum number of items administered, length of time, standard error of measurement, or some combination of the three. For the PERFORMANCE Series, Scantron chose stopping criteria based on a combination of the maximum number of items administered and standard error of measurement. The targeted standard error of measurement for tests in all content areas is less than or equal to 0.30.

Order of Units

Each content area in PERFORMANCE Series has a specific order in which the units are presented. The units are presented in the following order:

Math	**Reading**
Number & Operations	Vocabulary
Algebra	Long Passage
Geometry	Fiction
Measurement	Nonfiction
Data Analysis & Probability	

Language Arts	**Science**
Parts of Speech	Living Things
Sentence Structure	Science Process
Punctuation	Ecology
Capitalization	

This particular order for presenting the units within each content area was selected so that the richest unit (the unit that best covered the entire ability continuum) was presented first, in order to increase the quality of the students ability estimate at the beginning of the test.

Testing Features

There are several features present in the PERFORMANCE Series, some of which are newly added features. The following features are some that are currently available for the product.

Standards Favoring

One of the most important features in the PERFORMANCE Series is the ability for the test to adjust to the student's specific state standards. Based on the student's particular State Standards Document and the Curriculum Alignment Guide for that document, the item selection algorithm in PERFORMANCE will disfavor all those skills and associated items within the item pools that are not aligned to the student's standards. This ensures that students are being tested on their state standards.

Item Selection Memory

Another important feature in PERFORMANCE is the memory of the item selection algorithm. The selection algorithm has a memory of all the items that have been presented to a student in past administrations, and will not present these items in subsequent tests. This memory feature helps ensure the validity of the PERFORMANCE Series.

Grade Level Restriction

The selection algorithm currently restricts items based on the PERFORMANCE Series grade level. This limit is set to three grade levels. For example, a student enrolled as a second grader will not be presented with items having a PERFORMACNE Series grade level larger than grade 5. WHY WAS THIS DONE.

7 Inferences and Score Definitions

When dealing with a Computer Adaptive Test, classical test scores such as number correct or proportion correct are meaningless since students see different numbers of items at different spectrums of the difficulty scale. As a result Scantron selected and implemented a variety of measures in the PERFORMANCE Series reports to help make meaning of student performance. All scores presented in the PERFORMANCE Series are summarized below.

Ability Estimate and Standard Error of Measurement

The fundamental scores calculated in the PERFORMANCE Series are the ability estimate and the Standard Error of Measurement (SEM) of the estimate. Both values are on the logit (log odds unit) scale. This logit scale is an equal interval scale in which differences at any spectrum of the scale have the same meaning. Consequently, difficulty parameters of the items are also placed on the same scale, providing useful diagnostics as the Suggested Learning Objectives (See Reports and Appendix H for more details). During the PERFORMANCE Series, responses and difficulty parameters for items presented on the test provide sufficient information to estimate the student ability along the same logit scale.

The Standard Error of Measurement (SEM) is the extent to which the student ability estimate varies from the *true* ability. The SEM can be used to construct confidence intervals around the ability estimate. The SEM is also one of the criteria used in the Item Selection Algorithm (see Chapter 6 Testing Structure) for PERFORMANCE Series. The SEM also reveals information about the tests Reliability (See Chapter 4 Reliability and Validity).

Scaled Score

The Scaled Score is a simple linear transformation of the student ability estimate. Since negative ability estimates are possible values, a transformation is applied to make all reported scores positive in value. This removes any *negative* judgments that a negative value might suggest. The multiplicative factor of the

PERFORMANCE Series Scaled Score in all four subject areas is 200 with a center at 2500. All four subject areas have a Scaled Score range of 1300 to 3700 Scaled units. The Standard Error of Measurement is itself transformed to the same scale when displayed in the PERFORMANCE Series Reports.

Item Pool Score

The underlying metric in the PERFORMANCE Series is the student's ability estimate. A problem with reporting the ability estimate itself or some scaled representation of the estimate is that it has little meaning to teachers. One such transformation that attempts to make a meaningful or understandable score is Item Pool Scoring (Thissen, 2002) or Number-Correct true score (Folk & Smith, 2002). An Item Pool Score is computed by taking the student's ability estimate $\hat{\theta}$ derived from an item response model, computing the probabilities of correctly answering each item *j* on the test, and adding the probabilities P_j for all the items *m* on the test.

$$\sum_{j=1}^{m} P_j\left(\hat{\theta}\right)$$

The result is the *expected score* or *expected number of items correct* if the student was to see every item available on the test. This expected number of items correct could also be expressed as a *proportion* of items within that pool that the student is expected to answer correctly. Expressing the ability estimate as a proportion correct is less confusing and a score (items correct or proportion) that the majority of teachers are familiar with.

We can apply the Item Pool Score to any collection of reference items that are of interest. In the PERFORMANCE Series, we partition the items that are aligned to the student's standards by grade level and unit, creating individual reference item pools that are of interest to report on. The Item Pool Score is the proportion of items that a student at a given ability level is expected to answer correctly if given all the items that are aligned to that student's grade level and unit item pool

Standards Item Pool Score

Another measure presented in the PERFORMANCE Series reports is the Standard Item Pool Score (SIP Score). This measure is an Item Pool Score using the reference item pools defined by the Standards. For example, all the PERFORMANCE Series items that are aligned to the 3rd grade mathematics standards for California create the *Grade 3 Item Pool for the California Standards*. The SIP Score reflects the proportion of items for a reference item pool that a student is expected to answer correctly given the realized Scaled Score. The SIP Score is a function of both the realized Scaled Score and the reference item pool. As a result when the SIP Score is displayed in the reports, so are the two pieces (Scaled Score and reference item pool)

The level of inference for the SIP Score is both at the overall subject level and at the individual unit level. The only variable that varies in this measure is the referenced item pool, i.e. *Grade 3 Item Pool for the California Standards*, *Grade 3 Item Pool for the California Standards in Algebra*, *Grade 3 Item Pool for the California Standards in Measurement*, etc. When calculating the SIP scores at the unit level, the overall subject Scaled Score is used. Since the item pools are unidimensional, we can use the same Scaled Score when calculating the unit SIP Score. The overall subject Scaled Score is the *best* estimate of the student's subject area ability and hence provides the *most accurate inference* at the unit level.

National Percentile Rank

The National Percentile Rank (NPR) Report compares student Scaled Scores to a normative sample for Mathematics and Reading tests for fall 2002 and spring 2003. An NPR is the percentage of students that would score below the Scaled Score for the given student. NPRs are only available for students that tested within August 1 and November 30 (fall norm) and February 15 and May 15 (spring norm). The NPR score is presents in an NPR Report as well as in the student profile (if the student tested within the norm date ranges previously listed). We currently only provide NPR Scores for Mathematics and Reading. Normative samples for Science and Language Arts are included for future development.

Aggregate Reporting

One of the many advantages for PERFORMANCE Series users is the ability to aggregate and disaggregate student scores in real time. The measure of interest when examining aggregate data is the Mean Scaled Score. This score represents the Scaled Score for an 'average' student in the aggregate group. To assist customers when making inference at the aggregate level, the Standard Error of the Mean is prominently displayed whenever the Mean Scaled Scores are present (hovering over a Mean Scaled Score will display the Standard Deviation of the Sample as well). For certain summary reports, a SIP Score is displayed for an aggregate score along with the reference item pool being used.

Gains Reporting

The Gains Report is one that is of great interest to all PERFORMANCE Series users. The Gain is calculated as the difference between Scaled Scores at two separate administrations (whether at the aggregate Mean Scaled Score level or individual student level). For each gain reported, a standard error for the gain is also calculated and displayed. Scantron indicates those gains that are not significantly different from zero at the 67% confidence level (plus or minus one standard error of the gain).

8 Reports

The PERFORMANCE Series has a variety of reports available. Different reports are available depending upon the level of the person accessing them. The following list details a brief description and suggests applications for each report.

Location Report by District

The location report provides Location Controllers and Administrators the ability to immediately see the average Scaled Score and SIP Score by grade level in each subject area for the entire district. This report can be used to determine how the district is performing in relation to the state standards and other accountability measures. In addition, this report can help to determine which subject areas need attention in your district. This same report can be viewed by each subject area individually to show unit detail.

Location Report by School

The location report provides Location Controllers and Administrators the ability to immediately see how each of the schools in the district are performing in each subject area. The report gives the average Scaled Score and SIP Score by grade level in each subject area, which helps Administrators to target the schools that are in need of more help and/or which subjects need attention. This same report can be viewed by each subject area individually to show unit detail.

Staff Report

The Staff Report provides Location Controllers and Administrators the ability to focus in on specific staff members to see the average Scaled Score and SIP Score by grade level in each subject area. This report can guide administrators in determining which staff members may need more staff development and create opportunities to discuss overall instructional strategies to meet state standards. This same report can be viewed by each subject area individually to show unit detail.

Group Report

The Group Report provides Location Controllers and Administrators the ability to see how certain groups are performing. This report gives the average Scaled Score and SIP Score by grade level in each subject area by group. The Group Report can also help districts and schools to meet mandated Title I reporting requirements as well as compare two different types of reading programs. Location Controllers have the ability to create any group they would like included (e.g. Title I, Special Education, pilot programs). This same report can be viewed by each subject area individually to show unit detail.

Grade Level Report

The Grade Level Report provides Location Controllers and Administrators the ability to see the average Scaled Score and SIP Score by grade level in each subject area for a district or school. This report can be used to determine which grades are meeting standards and also creates an opportunity to discuss overall instructional strategies by grade level. In addition, this report can show trends in grade levels where instructional success may start to decline. This same report can be viewed by each subject area individually to show unit detail.

Course Report

The Course Report provides Location Controllers and Administrators the ability to see how specific courses are performing. The Course Report gives the average Scaled Score and SIP Score by grade level in each subject area in each course. This report can be used to determine which courses are meeting standards and also creates an opportunity to discuss overall instructional strategies by course. This same report can be viewed by each subject area individually to show unit detail.

Class Report

The Class Report provides teachers the ability to see the average Scaled Score and SIP Score by grade level in each subject area for each of their classes. This report can help teachers with accountability among their various classes with one easy report. In addition, it can help teachers determine which classes are meeting standards and help set instructional goals. This same report can be viewed by each subject area individually to show unit detail.

Student Report

The Student Report provides Location Controller, Administrators, and Teachers the ability to see the performance of every student in each subject within their location. This report can help to identify specific students who need remediation or those who need more challenges. In addition, teachers can use this report to view the class as a whole and create learning groups to further instruction. This same report can be viewed by each subject area individually to show unit detail.

Student Reading Profile

The Student Reading Profile allows Location Controllers, Administrators, and Teachers the ability to obtain detailed reports on individual students. This report breaks down student scores by units, reading rate, and skill level. Teachers can use this report to immediately determine specific areas of strengths and weaknesses, which can help guide instruction. In addition, the Test History provides a summary for each completed test. Comparisons can be calculated historically to show growth.

Student Math Profile

The Student Math Profile allows Location Controllers, Administrators, and Teachers the ability to obtain detailed reports on individual students. This report breaks down student scores by units. Teachers can use this report to immediately determine specific areas of strengths and weaknesses, which can help guide instruction. In addition, the Test History provides a summary for each completed test. Comparisons can be calculated historically to show growth.

Gains Reports

The Gains Reports provide Location Controllers, Administrators, and Teachers the ability to view the gains that were made in a specified testing period. The Gains Reports can be broken down by District, School, Staff, Grade Level, Course, Class, and Student. This report helps districts, schools, and teachers to measure gains on a consistent scale, thereby informing instruction and guiding progress towards accountability standards. The difference of the Scaled Scores as well as the Standard Error of Measurement for that difference are displayed for further analysis.

Suggested Learning Objectives Report

The Suggested Learning Objectives Report for the PERFORMANCE Series identifies skills that are the next steps in the learner's academic growth as well as those skills that have been successfully completed. The suggested learning objectives and completed skills are based upon the student's score for each unit. With the Suggested Learning Objectives report, teachers will be able to see what their students have learned and what they need to learn next. This new feature will allow teachers to individualize instruction and remain accountable to their standards (See Appendix H for details on SLO report).

Testing Status Report

The Testing Status Report provides Location Controllers, Administrators, and Teachers the ability to see a checklist of students who have been tested in each subject area for the year. The same type of information is available in a "Tests Completed This Week" report and an "Unfinished and Active Tests" report. These reports are an easy tracking tool to determine which students have completed testing and which students still need finish.

Score Distribution Report

The Score Distribution Report allows the user to view the statistical information behind each of the score averages. A bar graph demonstrates the number of students scoring within each range. This report is available in conjunction with any report that contains the bar icon in the section labeled "averages."

Learning Styles Report

The Learning Styles Report identifies the student's learning preference, thereby allowing teachers to direct instruction according to each student's preferred learning style. In addition, the report provides teaching and studying tips related to the preferred learning style. The Learning Styles information can also be found in the Student Reports and will appear in the Untested Report as well.

Class Profile Report

The Class Profile report allows the user to prioritize which learning objectives need to be covered for an entire class. The learning objectives in the Class Profile are prioritized based upon the number of students having completed the objective. In addition, the user is able to view a detailed checklist of students who have completed or not completed specific objectives.

National Percentile Rank Report

The National Percentile Rank (NPR) Report compares student Scaled Scores to a normative sample for Mathematics and Reading tests for fall 2002 and spring 2003. An NPR is the percentage of students that would score below the Scaled Score for the given student. NPRs are only available for students that tested within August 1 and November 30 (fall norm) and February 15 and May 15 (spring norm). The NPR score is also present in the student profile if the student tested within the norm date ranges previously listed.

9 Frequently Asked Questions

Q: What is the PERFORMANCE Series?

A: The PERFORMANCE Series is an online standards-based adaptive measurement. Scantron Corporation has developed the PERFORMANCE Series to be a placement and gains assessment system that works with national, state, and district standards. The PERFORMANCE Series uses a computer adaptive testing engine that relies upon Item Response Theory (IRT) calibration. The computer adaptive testing engine ensures that all content units are covered, and uses the IRT-based item bank of questions and difficulty indices to provide reliability and accuracy.

Q: Is the PERFORMANCE Series a criterion-referenced test or a norm-referenced test?

A: The PERFORMANCE Series is a criterion-referenced test. The main difference between a criterion-referenced test and a norm-referenced test is not the test itself, but the interpretation of the results. In a criterion-referenced test students are assessed on their performance in relation to a set of criteria and in a norm-referenced test students are assessed on their performance within the norm group. The PERFORMANCE Series is designed to measure individual performance; therefore, it is a criterion-referenced test.

Q: Where did the learning objectives come from?

A: Scantron Corporation has been able to leverage the extensive research done with *Curriculum Designer* to identify critical learning objectives taught throughout the country. *Curriculum Designer* contains a massive relational database of alignments for hundreds of standards documents, including state and national standards documents, and state and national high-stakes assessments. By analyzing the commonality and correlation of learning objectives present in these documents, essential learning objectives and content at each grade level were identified and collated. Consequently, the assessment of learning objectives tested by The PERFORMANCE Series has a high degree of correlation to state and national standards.

Utilizing a large team of teachers and educational consultants, Scantron carefully investigated each skill area to determine if the learning objective was a critical objective and grade-level appropriate. For more information, please refer to the Technical Manual.

Q: What subjects are available?

A: The PERFORMANCE Series currently includes reading (grades 2-12), math (grades 2-9 national and grades 2-12 in some states), language arts (grades 2-8), science (grades 2-8), and Learning Styles (grades 4-12).

Q: Does the PERFORMANCE Series align to specific state or district standards?

A: Yes, a Curriculum Alignment Guide is used to align state or district standards to learning objectives assessed in the PERFORMANCE Series. This process is done by adjusting the grade level of the learning objectives in the PERFORMANCE Series to match the grade levels of the specific standards. Once a student completes a test the reports will reflect the adjusted grade levels. Although the test will NOT change, the reports will display the grade levels that the Curriculum Alignment Guide produces. The Curriculum Alignment Guide is only available for mathematics, language arts, and science.

Q: Why is the Curriculum Alignment Guide not available for reading?

A: We do not provide a Curriculum Alignment Guide for Reading PERFORMANCE due to the nature of a reading assessment. In general, the skills that measure reading comprehension remain consistent from grades two through twelve. What changes is the readability (difficulty) of the passages. For example, a student must identify the main idea of a story or analyze characters in a story whether he or she is in second grade or tenth. Scantron's content team researched a variety of standards and information on reading assessment in order to develop the skill list. This allows Reading PERFORMANCE to remain standards-based, while still assessing reading ability.

Q: What units are covered?

A: Reading PERFORMANCE contains the following 4 units: Vocabulary, Fiction, Nonfiction, and Long Passage. Math PERFORMANCE contains the following 5 units: Number & Operations, Algebra, Geometry, Measurement, and Data Analysis & Probability. Language Arts PERFORMANCE contains the following 4 units: Capitalization, Parts of Speech, Punctuation, and Sentence Structure. Science PERFORMANCE contains the following 3 units: Living Things, Ecology, and Science Processes. The Learning Styles assessment covers Visual, Auditory, and Emotive/Kinesthetic.

Q: Are the PERFORMANCE Series tests timed?

A: No, the students should be allowed as much time as needed to take the test.

Q: What happens if the test is stopped?

A: If a test is stopped before a student has finished, the test will resume at exactly the same spot where the student left off. (Exception: The student must resume testing within two weeks.)

Q: How often can the PERFORMANCE Series be administered?

A: Scantron Corporation recommends the test be given no more than two to three times a year, with at least a 12-week window between tests, to provide the lowest standard error of measurement and ensure reliability and validity. The PERFORMANCE Series can be used as pre-and post-tests at the beginning of the school year and once during the middle of the year to monitor student growth.

Q: Do all students see the same test?

A: No, since the PERFORMANCE Series is computer adaptive, each test is unique for every student. Even if two students happen to have the same test question, the answers are scrambled, which increases test security.

Q: What accommodations would be considered for special education students to remain compliant with federal guidelines?

A: Examples of possible accommodations: someone could read the stories and questions to the student, the student could be given extra time to take the test, or the teacher may opt to use Title I or Special Education testing programs.

Q: Does the PERFORMANCE Series fulfill Title I requirements?

A: Yes, the PERFORMANCE Series can be used as a multiple measure of assessment and can show annual yearly progress by measuring gains on a consistent scale. The user is also able to create groups, such as Free/Reduced Lunch, Before School/After School Programs, etc., to measure gains by specified groups. In addition, within the reports, the user is able to select students according to specified demographics, such as ethnicity, gender, etc.

Q: Is customer support available?

A: Yes, customer support is available from 6:00am-4:30pm PST at 1-800-445-3141. Customer support is also available by email at support@scantron.com.

Q: How do I login to take the test?

A: Go to www.edperformance.com and click on the subject you wish to test. You will be asked to provide a site ID. Enter the site ID that was given to you. Next you will be asked to enter a student ID. Enter the student ID that was assigned. You will see a question asking if the correct name is entered. If the name is correct, click yes and read the directions for the test. After reading the directions, click on "Begin Test" to start taking the test.

Q: What if I lose my site ID number?

A: If you lose your site ID number, contact your district or school representative, or call customer support at 800-445-3141.

Q: How long does the test take?

A: The test takes an average of one hour to complete per subject area. However, if a student's ability level is significantly different than their assigned grade level, the test may take longer to adjust for this difference. Scantron Corporation recommends reserving two one-hour class periods to allow for set-up time and testing time.

Q: How many test items does each student receive?

A: Since the test is computer adaptive, each student will receive a unique test and the number of items may vary. There are not a set number of questions. The average number of questions in a testing session is about 50.

Q: How do I spoil a test?

A: To spoil a test, first make sure you are at the location where the student is entered. Click on "Testing", and then click on "Unfinished and Active Tests." Once this screen appears, locate the student and click on "Spoil." Follow the directions for spoiling the test. However, once a test has been completed it cannot be spoiled.

Q: Can teachers see which questions the students answered correctly or incorrectly?

A: We do not provide a list of how each student answered every question, but we do provide a Suggested Learning Objectives Report. This report includes a list of successfully attained objectives as well as a list of objectives that the learner needs to work on next. The reason for this is that the test is computer adaptive and each student follows a different path. The questions the students see along the path are not as important as the path they took to obtain their final score.

Q: When are reports available?

A: Reports are immediately available online once a student completes a test.

Q: Are there different levels of reports available?

A: Yes, reports are available at the student, course, class, school, district, sub-district, county, and state levels.

Q: What types of reports are available?

A: Depending on the user's level of access, the following reports are available: Course Reports, Staff Reports, Grade Level Reports, Student Reports, Group Reports, Testing Status Reports, Class Reports, District/School Reports, Gains/History Reports, Distribution Reports, Suggested Learning Objectives, and Class Profile Reports. Within each of these reports, the user is able to sort results according to specified demographics.

Q: How was the readability of the reading passages measured?

A: All passages and questions were analyzed for reading level utilizing a number of powerful computer-based reading algorithms. Careful attention was paid to both reading level and contextual appropriateness of each question. The reading-level algorithms used were:

Vocabulary Assessor

Dale-Chall

Flesch-Kincaid Grade Level

Flesch Reading Ease

Powers-Sumner-Kearl

Items that did not successfully pass this level of review were returned to the writing team for editing and resubmission. Once the content team approved the passages and questions, they were submitted to a team of independent editors for review. The Editor Team consisted of professional educators (credentialed teachers and university professors) from around the United States and Canada.

Q: What does the Reading Rate mean?

A: This number is based on a silent reading rate. The rate is calculated by counting the number of words in the passages the student read and dividing that number by the time it took the student to read those passages. Certain test taking techniques may alter the accuracy of this rate. This score will only be accurate if the student reads the story before answering questions. If a student reads a passage in less than 5 seconds the reading rate will be invalidated and a "not measured" will appear.

Q: Are problem solving skills tested in Math PERFORMANCE?

A: The test has questions that assess both problem solving skills and computation skills.

Q: Can the students use scratch paper for Math PERFORMANCE?

A: The students can and should have a pencil and scratch paper available to them for their use.

Q: Can the students use calculators?

A: The questions in the math test are designed so that a calculator is not necessary. Scantron recommends that the district follow the same procedures for calculator use on other tests given in the district.

Q: Can the students use formulas for Math PERFORMANCE?

A: A formula or table of formulas is given in the question only if the learning objective is not intended to test knowledge of the formula. We do not recommend that a hard copy of formulas be given to the students.

Q: Why do the units listed in the Math reports differ between students?

A: Although the majority of students see questions in all five math units, there are a few rare instances when this is not the case. One such case is that some units may not be appropriate for the student's individual math level. Another case is when a unit is not aligned to the Curriculum Alignment Guide for certain grade levels. The last and rarest case is when a student tests several times over a short period of time, causing the selection algorithm to run out of appropriate items for the student's math level.

Q: Is training on the PERFORMANCE Series available?

A: Yes, there are two days of mandatory training. One day of pre-test training (Site Set-Up) and one day of post-test training (Data Interpretation). Web-based training is also available.

Q: When I make reservations to test, do I have to check four 15-minute slots to reserve for 1 hour?

A: No. To reserve one hour, you only have to click one box indicating the starting time.

Q: Will students be stopped at the end of the 1-hour reservation?

A: No. Although reservations are for 1 hour, students may continue testing beyond this time as long as they need. We say 1 hour because this is the average time a class will need.

Q: What if the students don’t start in the first 15 minutes of the reservation?

A: You run the risk of not being able to test if the system is full of testers. If students start (enter their student ID and then confirm their name) sometime within the first 15 minutes of the reservation, they will be assured a testing spot.

Q: If I enter student IDs ahead of time (for young students) will I lose my reservation?

A: As long as "Yes" is clicked on the student name confirmation page within the first 15 minutes of the reservation, you will not lose your reservation. This is the point where your test is considered started and you are "safely in."

Q: Do I need a reservation to continue a stopped test?

A: No. Tests that are stopped may be continued at any time and do not need a reservation.

Q: What if I want to test outside normal school hours?

A: No reservation is needed for tests starting outside of the 7:30 a.m. to 3:00 p.m. time range.

Q: Will Science PERFORMANCE assess evolution?

A: Evolution is included in Science PERFORMANCE, but is strictly limited to science with no discussion of religious theory. The topic is part of the National Science Education Standards (published by the National Research Council) and is accepted by the National Center for Science Education, the American Scientific Affiliation (ASA), the National Science Teachers Association, and the American Association for the Advancement of Science (publishers of Benchmarks for Science Literacy). Also, evolution is a key scientific concept that is necessary for the understanding of many other topics in life science and ecology.

Q: Will health issues be assessed by Science PERFORMANCE?

A: Topics that are primarily covered in Health classes, such as the male and female reproductive systems, pregnancy and birth, and drug and alcohol education will not be covered in Science PERFORMANCE. Health classes and substance abuse programs such as D.A.R.E. are completed in various grades in schools throughout the country, as well as independently outside of school. Therefore, such skills are not reliable grade level determinants.

Q: Why is spelling not covered in Language Arts PERFORMANCE?

A: Due to the amount of skills covered in Language Arts, we had to choose the most common units for use in the product. We felt that spelling could become its own product at some point.

Q: Why is composition not covered in Language Arts PERFORMANCE?

A: The multiple-choice format of the PERFORMANCE Series is not conducive to a composition test.

Appendices

A. - Reading PERFORMANCE Learning Objectives

Vocabulary

Skill Name	Skill Description
Vocabulary in Context	identify the meaning of a second grade vocabulary word presented in context.
Vocabulary in Isolation	identify the meaning of a second grade vocabulary word presented in isolation.
Vocabulary in Context	identify the meaning of a third grade vocabulary word presented in context.
Vocabulary in Isolation	identify the meaning of a third grade vocabulary word presented in isolation.
Vocabulary in Context	identify the meaning of a fourth grade vocabulary word presented in context.
Vocabulary in Isolation	identify the meaning of a fourth grade vocabulary word presented in isolation.
Vocabulary in Context	identify the meaning of a fifth grade vocabulary word presented in context.
Vocabulary in Isolation	identify the meaning of a fifth grade vocabulary word presented in isolation.
Vocabulary in Context	identify the meaning of a sixth grade vocabulary word presented in context.
Vocabulary in Isolation	identify the meaning of a sixth grade vocabulary word presented in isolation.
Vocabulary in Context	identify the meaning of a seventh grade vocabulary word presented in context.
Vocabulary in Isolation	identify the meaning of a seventh grade vocabulary word presented in isolation.
Vocabulary in Context	identify the meaning of an eighth grade vocabulary word presented in context.
Vocabulary in Isolation	identify the meaning of an eighth grade vocabulary word presented in isolation.
Vocabulary in Context	identify the meaning of a ninth grade vocabulary word presented in context.

Skill Name	Skill Description
Vocabulary in Isolation	identify the meaning of a ninth grade vocabulary word presented in isolation.
Vocabulary in Context	identify the meaning of a tenth grade vocabulary word presented in context.
Vocabulary in Isolation	identify the meaning of a tenth grade vocabulary word presented in isolation.
Analogy	identify the correct eleventh grade vocabulary word to complete the given analogy and/or the correct eleventh grade vocabulary word to complete a sentence.
Sentence Completion	identify the correct eleventh grade vocabulary word to complete the sentence.
Analogy	identify the correct twelfth grade vocabulary word to complete the given analogy.
Sentence Completion	identify the correct twelfth grade vocabulary word to complete the sentence.

Fiction

Skill Name	Skill Description
Audience: Identify	identify the intended audience in a second grade fictional passage.
Cause/Effect	identify cause and effect in a second grade fictional passage.
Cause/Effect: Implied	identify the implied cause and effect in a second grade fictional passage.
Character Analysis	analyze characters in a short second grade fictional passage.
Character Trait: Identify	identify character traits in a second grade fictional passage.
Detail	identify story detail within a short second grade fictional passage.
Draw Conclusion	draw conclusions from a short second grade fictional passage.
Fact/Opinion	differentiate between fact and opinion in a second grade fictional passage.
Irrelevant Information: Identify	identify irrelevant information in a second grade fictional passage.
Main Character: Identify	identify the main character in a second grade fictional passage.
Main Idea	identify the main idea of a short second grade fictional passage.
Passage Elements: Compare	compare passage elements in a second grade fictional passage.

Skill Name	Skill Description
Point of View: Influence	evaluate how the author's point of view influences a second grade fictional passage.
Predict Outcome	predict outcomes in a second grade fictional passage.
Problem/Solution	identify the problem and solution in a second grade fictional passage.
Purpose: Evaluate	evaluate the author's purpose in a second grade fictional passage.
Purpose: Identify	identify the purpose of a second grade fictional passage.
Setting: Identify	identify the setting of a second grade fictional passage.
Audience: Identify	identify the intended audience in a third grade fictional passage.
Cause/Effect	identify cause and effect in a third grade fictional passage.
Cause/Effect: Implied	identify the implied cause and effect in a third grade fictional passage.
Character Analysis	analyze characters in a short third grade fictional passage.
Character Trait: Identify	identify character traits in a third grade fictional passage.
Detail	identify story detail in a short third grade fictional passage.
Draw Conclusion	draw conclusions from a short third grade fictional passage.
Fact/Opinion	differentiate between fact and opinion in a third grade fictional passage.
Irrelevant Information: Identify	identify irrelevant information in a third grade fictional passage.
Main Character: Identify	identify the main character in a third grade fictional passage.
Main Idea	identify the main idea of a short third grade fictional passage.
Passage Elements: Compare	compare passage elements in a third grade fictional passage.
Point of View: Influence	evaluate how the author's point of view influences a third grade fictional passage.
Predict Outcome	predict outcomes in a third grade fictional passage.
Problem/Solution	identify the problem and solution in a third grade fictional passage.
Purpose: Evaluate	evaluate the author's purpose in a third grade fictional passage.
Purpose: Identify	identify the purpose of a third grade fictional passage.
Setting: Identify	identify the setting of a third grade fictional passage.
Audience: Identify	identify the intended audience in a fourth grade fictional passage.
Cause/Effect	identify cause and effect in a fourth grade fictional passage.

Skill Name	Skill Description
Cause/Effect: Implied	identify the implied cause and effect in a fourth grade fictional passage.
Character Analysis	analyze characters in a short fourth grade fictional passage.
Character Trait: Identify	identify character traits in a fourth grade fictional passage.
Detail	identify story detail in a short fourth grade fictional passage.
Draw Conclusion	draw conclusions from a short fourth grade fictional passage.
Fact/Opinion	differentiate between fact and opinion in a fourth grade fictional passage.
Irrelevant Information: Identify	identify irrelevant information in a fourth grade fictional passage.
Main Character: Identify	identify the main character in a fourth grade fictional passage.
Main Idea	identify the main idea of a short fourth grade fictional passage.
Passage Elements: Compare	compare passage elements in a fourth grade fictional passage.
Plot: Climax	identify the climax of a story in a fourth grade fictional passage.
Point of View: Influence	evaluate how the author's point of view influences a fourth grade fictional passage.
Predict Outcome	predict outcomes in a fourth grade fictional passage.
Problem/Solution	identify the problem and solution in a fourth grade fictional passage.
Purpose: Evaluate	evaluate the author's purpose in a fourth grade fictional passage.
Purpose: Identify	identify the purpose of a fourth grade fictional passage.
Setting: Identify	identify the setting of a fourth grade fictional passage.
Audience: Identify	identify the intended audience of a fifth grade fictional passage.
Author Purpose: Identify	identify the author's purpose in a fifth grade fictional passage.
Cause/Effect	understand the relationship between cause and effect in a fifth grade fictional passage.
Cause/Effect: Implied	identify the implied cause and effect in a fifth grade fictional passage.
Character Analysis	analyze characters in a short fifth grade fictional passage.
Characters: Identify	identify main and supporting characters in a fifth grade fictional passage.
Climax: Identify	identify the climax of a fifth grade fictional passage.
Culture: Recognize	recognize cultural representations in a fifth grade fictional passage.

Skill Name	Skill Description
Detail	identify story detail from a short fifth fictional passage.
Draw Conclusion	draw conclusions from a short fifth grade fictional passage.
Extend Meaning	extend meaning beyond a fifth grade fictional passage.
Fact/Opinion	differentiate between fact and opinion in a fifth grade fictional passage.
Irrelevant Information	identify irrelevant information in a fifth grade fictional passage.
Main Idea	identify the main idea of a short fifth grade fictional passage.
Point of View: Influence	evaluate the influence of the author's point of view on a fifth grade fictional passage.
Predict Outcomes	predict outcomes in a fifth grade fictional passage.
Audience: Identify	identify the intended audience of a sixth grade fictional passage.
Author Purpose: Identify	identify the author's purpose in a sixth grade fictional passage.
Cause/Effect	understand the relationship between cause and effect in a sixth grade fictional passage.
Cause/Effect: Implied	identify the implied cause and effect in a sixth grade fictional passage.
Character Analysis	analyze characters in a short sixth grade fictional passage.
Characters: Identify	identify main and supporting characters in a sixth grade fictional passage.
Climax: Identify	identify the climax of a sixth grade fictional passage.
Culture: Recognize	recognize cultural representations in a sixth grade fictional passage.
Detail	identify story detail in a short sixth grade fictional passage.
Draw Conclusion	draw conclusions from a short sixth grade fictional passage.
Extend Meaning	extend meaning beyond a sixth grade fictional passage.
Fact/Opinion	differentiate between fact and opinion in a sixth grade fictional passage.
Irrelevant Information	identify irrelevant information in a sixth grade fictional passage.
Main Idea	identify main idea from a short sixth grade fictional passage.
Point of View: Influence	evaluate the influence of the author's point of view on a sixth grade fictional passage.
Predict Outcomes	predict outcomes in a sixth grade fictional passage.
Audience: Identify	identify the intended audience of a seventh grade fictional passage.

Skill Name	Skill Description
Author Purpose: Identify	identify the author's purpose in a seventh grade fictional passage.
Cause/Effect	understand the relationship between cause and effect in a seventh grade fictional passage.
Cause/Effect: Implied	identify the implied cause and effect in a seventh grade fiction passage.
Character Analysis	analyze characters in a short seventh grade fictional passage.
Characters: Identify	identify main and supporting characters in a seventh grade fictional passage.
Climax: Identify	identify the climax of a fictional passage at the seventh grade instructional level.
Culture: Recognize	recognize cultural representations in a seventh grade fictional passage.
Detail	identify story detail in a short seventh grade fictional passage.
Draw Conclusion	draw conclusions from a short seventh grade fictional passage.
Extend Meaning	extend meaning beyond a seventh grade fictional passage.
Fact/Opinion	differentiate between fact and opinion in a seventh grade fictional passage.
Irrelevant Information	identify irrelevant information in a seventh grade fictional passage.
Main Idea	identify the main idea of a short seventh grade fictional passage.
Point of View: Influence	evaluate the influence of the author's point of view on a seventh grade fictional passage.
Predict Outcomes	predict outcomes in a seventh grade fictional passage.
Audience: Identify	identify the intended audience of an eighth grade fictional passage.
Author Purpose: Identify	identify the author's purpose in an eighth grade fictional passage.
Cause/Effect	understand the relationship between cause and effect in an eighth grade fictional passage.
Cause/Effect: Implied	identify the implied cause and effect in an eighth grade fictional passage.
Character Analysis	analyze characters in a short eighth grade fictional passage.
Characters: Identify	identify main and supporting characters in an eighth grade fictional passage.
Climax: Identify	identify the climax of an eighth grade fictional passage.

Skill Name	Skill Description
Culture: Recognize	recognize cultural representations in an eighth grade fictional passage.
Detail	identify story detail in a short eighth grade fictional passage.
Draw Conclusion	draw conclusions from a short eighth grade fictional passage.
Extend Meaning	extend meaning beyond an eighth grade fictional passage.
Fact/Opinion	differentiate between fact and opinion in an eighth grade fictional passage.
Irrelevant Information	identify irrelevant information in an eighth grade fictional passage.
Main Idea	identify the main idea of a short eighth grade fictional passage.
Point of View: Influence	evaluate the influence of the author's point of view on an eighth grade fictional passage.
Predict Outcomes	predict outcomes in an eighth grade fictional passage.
Author: Point of View	identify the author's point of view in a ninth grade fictional passage.
Basic Comprehension	answer basic comprehension questions about a ninth grade fictional passage.
Cause/Effect	understand the relationship between cause and effect in a ninth grade fictional passage.
Character Analysis	analyze characters in a short ninth grade fictional passage.
Character: Feelings	identify character feelings in a ninth grade fictional passage.
Character: Trait	identify character traits in a ninth grade fictional passage.
Descriptive Language	identify descriptive language in a ninth grade fictional passage.
Draw Conclusion	draw conclusions from a short ninth grade fictional passage.
Excluded Information	identify information excluded from a ninth grade fictional passage.
Extend Meaning	extend meaning beyond a ninth grade fictional passage.
Figurative Language	interpret figurative language in a ninth grade fictional passage.
Irrelevant Information	identify irrelevant information in a ninth grade fictional passage.
Literary Device: Identify	identify the literary device being used by the author in a ninth grade fictional passage.
Main Idea	identify the main idea of a short ninth grade fictional passage.
Plot	identify elements of plot in a ninth grade fictional passage.
Predict Outcome	predict the outcome of a short ninth grade fictional passage.

Skill Name	Skill Description
Source	identify the possible source of a ninth grade fictional passage.
Theme	identify the theme of a ninth grade fictional passage.
Vocabulary: Understand	use context to understand vocabulary in a ninth grade fictional passage.
Author: Point of View	identify the author's point of view in a tenth grade fictional passage.
Basic Comprehension	answer basic comprehension questions about a tenth grade fictional passage.
Cause/Effect	understand the relationship between cause and effect in a tenth grade fictional passage.
Character Analysis	analyze characters in a short tenth grade fictional passage.
Character: Feelings	identify character feelings in a tenth grade fictional passage.
Character: Trait	identify character traits in a tenth grade fictional passage.
Descriptive Language	identify descriptive language in a tenth grade fictional passage.
Draw Conclusion	draw conclusions from a short tenth grade fictional passage.
Excluded Information	identify information excluded from a tenth grade fictional passage.
Extend Meaning	extend meaning beyond a tenth grade fictional passage.
Figurative Language	interpret figurative language in a tenth grade fictional passage.
Irrelevant Information	identify irrelevant information in a tenth grade fictional passage.
Literary Device: Identify	identify the literary device being used by the author in a tenth grade fictional passage.
Main Idea	identify the main idea of a short tenth grade fictional passage.
Plot	identify elements of plot in a tenth grade fictional passage.
Predict Outcome	predict the outcome of a short tenth grade fictional passage.
Source	identify the possible source of a tenth grade fictional passage.
Theme	identify the theme of a tenth grade fictional passage.
Vocabulary: Understand	use context to understand vocabulary in a tenth grade fictional passage.
Author Purpose: Identify	identify the author's purpose in an eleventh grade fictional story.
Basic Comprehension	answer basic comprehension questions about an eleventh grade fictional story.
Cause/Effect: Understand	understand the relationship between cause and effect in an eleventh grade fictional story.

Skill Name	Skill Description
Character: Feelings	identify character feelings in an eleventh grade fictional story.
Draw Conclusion: Implicit	draw conclusions from implicit information within an eleventh grade fictional passage.
Intended Audience	identify the intended audience of an eleventh grade fictional story.
Irrelevant: Identify	identify irrelevant information in an eleventh grade fictional story.
Literary Device: Identify	identify the literary device being used by the author in an eleventh grade fictional passage.
Literary Device: Interpret	interpret literary devices found in an eleventh grade fictional story.
Plot: Climax	distinguish plot climax in an eleventh grade fictional passage.
Plot: Identify	identify elements of plot in an eleventh grade fictional story.
Purpose: Identify	identify the purpose of an eleventh grade fictional story.
Source: Identify	identify a possible source of an eleventh grade fictional story.
Supporting Detail: Identify	identify supporting details in an eleventh grade fictional story.
Theme	infer the theme of an eleventh grade fictional passage.
Vocabulary: Understand	use context to understand vocabulary in an eleventh grade fictional story.
Author Purpose: Identify	identify the author's purpose in a twelfth grade fictional story.
Cause/Effect: Understand	understand the relationship between cause and effect in a twelfth grade fictional story.
Character: Feelings	infer character feelings from a twelfth grade fictional passage.
Climax: Identify	identify the climax in a twelfth grade fictional story.
Draw Conclusion: Implicit	draw conclusions from implicit information in a twelfth grade fictional story.
Intended Audience	identify the intended audience of a twelfth grade fictional story.
Irrelevant: Identify	identify irrelevant information in a twelfth grade fictional story.
Literary Device: Identify	identify the literary device being used by the author in a twelfth grade fictional story.
Literary Device: Interpret	determine the meaning of a literary device within a twelfth grade fictional passage.
Narrative: Personal	answer a comprehension question about a twelfth grade fictional passage.

Skill Name	Skill Description
Plot: Identify	identify elements of plot in a twelfth grade fictional story.
Purpose: Identify	identify the purpose of a twelfth grade fictional story.
Source: Identify	identify a possible source of a twelfth grade fictional story.
Supporting Detail: Identify	identify supporting details in a twelfth grade fictional story.
Theme	infer the theme of a short twelfth grade fictional passage.
Vocabulary: Understand	use context to understand vocabulary in a twelfth grade fictional story.

Nonfiction

Skill Name	Skill Description
Author: Purpose	evaluate author purpose within a second grade nonfictional passage.
Cause/Effect: Understand	understand the relationship between cause and effect in a second grade nonfictional passage.
Detail	identify story detail within a second grade nonfictional passage.
Events: Influence	determine how events influence future actions in a second grade nonfictional passage.
Fact/Opinion	distinguish between fact and opinion within a second grade nonfictional passage.
Intended Audience	identify the intended audience of a second grade nonfictional passage.
Irrelevant Information	identify a sentence that contains irrelevant information in a second grade nonfictional passage.
Purpose: Identify	identify the purpose of a second grade nonfictional passage.
Sequence	identify sequence within a second grade nonfictional passage.
Title	identify an appropriate title for a second grade nonfictional passage.
Author: Purpose	evaluate author purpose within a third grade nonfictional passage.
Cause/Effect: Understand	understand the relationship between cause and effect in a third grade nonfictional passage.
Detail	identify story detail from a third grade nonfictional passage.
Events: Influence	determine how events influence future actions in a third grade nonfictional passage.
Fact/Opinion	distinguish between fact and opinion in a third grade nonfictional passage.

Skill Name	Skill Description
Intended Audience	identify the intended audience of a third grade nonfictional passage.
Irrelevant Information	identify a sentence that contains irrelevant information in a third grade nonfictional passage.
Purpose: Identify	identify the purpose of a third grade nonfictional passage.
Sequence	identify sequence within a third grade nonfictional passage.
Title	identify an appropriate title for a third grade nonfictional passage.
Author: Purpose	evaluate author purpose within a fourth grade nonfictional passage.
Cause/Effect: Understand	understand the relationship between cause and effect in a fourth grade nonfictional passage.
Detail	identify story detail in a fourth grade nonfictional passage.
Events: Influence	determine how events influence future actions in a fourth grade nonfictional passage.
Fact/Opinion	distinguish between fact and opinion in a fourth grade nonfictional passage.
Intended Audience	identify the intended audience of a fourth grade nonfictional passage.
Irrelevant Information	identify a sentence that contains irrelevant information in a fourth grade nonfictional passage.
Purpose: Identify	identify the purpose of a fourth grade nonfictional passage.
Sequence	identify sequence within a fourth grade nonfictional passage.
Title	identify an appropriate title for a fourth grade nonfictional passage.
Author: Purpose	identify author purpose within a fifth grade nonfictional passage.
Cause/Effect: Understand	understand the relationship between cause and effect in a fifth grade nonfictional passage.
Classify: Objects/Events/Animal	classify objects, animals, and/or events in a fifth grade nonfictional passage.
Detail	identify story detail from a fifth grade nonfictional passage.
Fact/Opinion	distinguish between fact and opinion in a fifth grade nonfictional passage.
Generalization	make generalizations regarding information in a fifth grade nonfictional passage.
Intended Audience	identify the intended audience of a fifth grade nonfictional passage.

Skill Name	Skill Description
Irrelevant Information	identify irrelevant information in a fifth grade nonfictional passage.
Organization: Identify	identify the organizational pattern in a fifth grade nonfictional passage.
Purpose: Identify	identify the purpose of a fifth grade nonfictional passage.
Sequence	identify sequence within a fifth grade nonfictional passage.
Supporting Sentence	identify a supporting sentence in a fifth grade nonfictional passage.
Title	identify an appropriate title for a fifth grade nonfictional passage.
Vocabulary: Context	understand vocabulary presented in context in a fifth grade nonfictional passage.
Author: Purpose	identify author purpose within a sixth grade nonfictional passage.
Cause/Effect: Understand	understand the relationship between cause and effect in a sixth grade nonfictional passage.
Classify: Objects/Events/Animals	classify objects, animals, and/or events in a sixth grade nonfictional passage.
Detail	identify story detail in a sixth grade nonfictional passage.
Fact/Opinion	distinguish between fact and opinion in a sixth grade nonfictional passage.
Generalization	make generalizations regarding information in a sixth grade nonfictional passage.
Intended Audience	identify the intended audience of a sixth grade nonfictional passage.
Irrelevant Information	identify irrelevant information in a sixth grade nonfictional passage.
Organization: Identify	identify the organizational pattern in a sixth grade nonfictional passage.
Purpose: Identify	identify the purpose of a sixth grade nonfictional passage.
Sequence	identify sequence within a sixth grade nonfictional passage.
Supporting Sentence	identify a supporting sentence in a sixth grade nonfictional passage.
Title	identify an appropriate title for a sixth grade nonfictional passage.
Vocabulary: Context	understand vocabulary presented in context in a sixth grade nonfictional passage.
Author: Purpose	identify author purpose within a seventh grade nonfictional passage.

Skill Name	Skill Description
Cause/Effect: Understand	understand the relationship between cause and effect in a seventh grade nonfiction passage.
Classify: Objects/Events/Animals	classify objects, animals, and/or events in a seventh grade nonfictional passage.
Detail	identify story detail in a seventh grade nonfictional passage.
Fact/Opinion	distinguish between fact and opinion in a seventh grade nonfictional passage.
Generalization	make generalizations regarding information in a seventh grade nonfictional passage.
Intended Audience	identify the intended audience of a seventh grade nonfiction passage.
Irrelevant Information	identify irrelevant information in a seventh grade nonfictional passage.
Organization: Identify	identify the organizational pattern in a seventh grade nonfictional passage.
Purpose: Identify	identify the purpose of a seventh grade nonfictional passage.
Sequence	identify sequence within a seventh grade nonfictional passage.
Supporting Sentence	identify a supporting sentence in a seventh grade nonfiction passage.
Title	identify an appropriate title for a seventh grade nonfictional passage.
Vocabulary: Context	understand vocabulary presented in context in a seventh grade nonfictional passage.
Author: Purpose	identify author purpose within an eighth grade nonfictional passage.
Cause/Effect: Understand	understand the relationship between cause and effect in an eighth grade nonfictional passage.
Classify: Objects/Events/Animal	classify objects, animals, and/or events in an eighth grade nonfictional passage.
Detail	identify story detail in an eighth grade nonfictional passage.
Fact/Opinion	distinguish between fact and opinion in an eighth grade nonfictional passage.
Generalization	make generalizations regarding information in an eighth grade nonfictional passage.
Intended Audience	identify the intended audience of an eighth grade nonfictional passage.
Irrelevant Information	identify irrelevant information in an eighth grade nonfictional passage.

Skill Name	Skill Description
Organization: Identify	identify the organizational pattern in an eighth grade nonfictional passage.
Purpose: Identify	identify the purpose of an eighth grade nonfictional passage.
Sequence	identify sequence within an eighth grade nonfictional passage.
Supporting Sentence	identify a supporting sentence in an eighth grade nonfictional passage.
Title	identify an appropriate title for an eighth grade nonfictional passage.
Vocabulary: Context	understand vocabulary presented in context in an eighth grade nonfictional passage.
Author Purpose	determine the author's purpose in a ninth grade nonfictional passage.
Author Viewpoint	determine how author viewpoint affects a ninth grade nonfictional passage.
Basic Comprehension	answer basic comprehension questions about a ninth grade nonfictional passage.
Cause/Effect: Understand	understand the relationship between cause and effect in a ninth grade nonfictional passage.
Detail	identify story detail in a ninth grade nonfictional passage.
Detail/Fact: Supporting	identify supporting details and/or facts in a ninth grade nonfictional passage.
Excluded Information	identify information excluded from a ninth grade nonfictional passage.
Extend Information	extend information beyond a ninth grade nonfictional passage.
Fact/Opinion	distinguish between fact and opinion in a ninth grade nonfictional passage.
Figurative Language	interpret the meaning of figurative language within a ninth grade nonfictional passage.
Generalization	make generalizations regarding information in a ninth grade nonfictional passage.
Inference	make inferences from a ninth grade nonfictional passage.
Intended Audience	identify the intended audience of a ninth grade nonfictional passage.
Irrelevant Information	identify irrelevant information from a ninth grade nonfictional passage.
Main Idea	identify the main idea in a ninth grade nonfictional passage.

Skill Name	Skill Description
Organization: Type	determine the type of organization in a ninth grade nonfictional passage.
Prior Knowledge	use prior knowledge to understand a ninth grade nonfictional passage.
Restate: Ideas	restate ideas presented in a ninth grade nonfictional passage.
Source: Identify	identify the source of a ninth grade nonfictional passage.
Vocabulary: Context	understand vocabulary presented in context in a ninth grade nonfictional passage.
Author Purpose	determine the author's purpose in a tenth grade nonfictional passage.
Author Viewpoint	determine how author viewpoint affects a tenth grade nonfictional passage.
Basic Comprehension	answer basic comprehension questions about a tenth grade nonfictional passage.
Cause/Effect: Understand	understand the relationship between cause and effect in a tenth grade nonfictional passage.
Detail	identify story detail in a tenth grade nonfictional passage.
Detail/Fact: Supporting	identify supporting details and/or facts in a tenth grade nonfictional passage.
Excluded Information	identify information excluded from a tenth grade nonfictional passage.
Extend Information	extend information beyond a tenth grade nonfictional passage.
Fact/Opinion	distinguish between fact and opinion in a tenth grade nonfictional passage.
Figurative Language	interpret the meaning of figurative language in a tenth grade nonfictional passage.
Generalization	make generalizations regarding information in a tenth grade nonfictional passage.
Inference	make inferences from a tenth grade nonfictional passage.
Intended Audience	identify the intended audience of a tenth grade nonfictional passage.
Irrelevant Information	identify irrelevant information from a tenth grade nonfictional passage.
Main Idea	identify the main idea in a tenth grade nonfictional passage.
Organization: Type	determine the type of organization in a tenth grade nonfictional passage.
Prior Knowledge	use prior knowledge to understand a tenth grade nonfictional passage.

Skill Name	Skill Description
Restate: Ideas	restate ideas presented in a tenth grade nonfictional passage.
Source: Identify	identify the source of a tenth grade nonfictional passage.
Vocabulary: Context	understand vocabulary presented in context in a tenth grade nonfictional passage.
Allusion	interpret allusion in an eleventh grade nonfictional passage.
Author Purpose	determine the author's purpose in an eleventh grade nonfictional passage.
Author Viewpoint	determine how author viewpoint affects an eleventh grade nonfictional passage.
Basic Comprehension	answer basic comprehension questions about an eleventh grade nonfictional passage.
Cause/Effect: Understand	understand the relationship between cause and effect in an eleventh grade nonfictional passage.
Compare: Passage Elements	make comparisons between passage elements within an eleventh grade nonfictional passage.
Detail/Fact: Supporting	identify supporting details and/or facts in an eleventh grade nonfictional passage.
Excluded Information	identify information excluded from an eleventh grade nonfictional passage.
Extend Information	extend information beyond an eleventh grade nonfictional passage.
Generalization	make generalizations regarding information in an eleventh grade nonfictional passage.
Intended Audience	identify the intended audience of an eleventh grade nonfictional passage.
Irrelevant Information	identify irrelevant information from an eleventh grade nonfictional passage.
Main Idea	identify the main idea in an eleventh grade nonfictional passage.
Organization: Type	determine whether an eleventh grade nonfictional passage is written in sequential or chronological order.
Prior Knowledge	use prior knowledge to understand an eleventh grade nonfictional passage.
Restate: Ideas	restate ideas presented in an eleventh grade nonfictional passage.
Source: Identify	identify the source of an eleventh grade nonfictional passage.
Vocabulary: Context	understand vocabulary presented in context in an eleventh grade nonfictional passage.

Skill Name	Skill Description
Argument: Analyze	analyze an argument made in a twelfth grade nonfictional passage.
Cause/Effect	identify cause and effect (both literal and inferred) from a twelfth grade nonfictional passage.
Compare Main Ideas	compare the main ideas of the two twelfth grade nonfictional passages.
Context	use context to construct meaning from a twelfth grade nonfictional passage.
Contradiction	identify an element in a twelfth grade nonfictional passage that contradicts another twelfth grade nonfictional passage.
Figurative Language: Infer	infer meaning from figurative language in a twelfth grade nonfictional passage.
Implicit Elements	compare and contrast implicit elements in a twelfth grade nonfictional passage.
Infer: Trait	infer a character trait from a twelfth grade nonfictional passage.
Purpose	compare and contrast the interpreted purposes of two twelfth grade nonfictional passages.
Reasoning: Analyze	analyze the reasoning presented in a twelfth grade nonfictional passage.
Relationship of Passages	identify how one twelfth grade nonfictional passage relates to another.
Relationship: Details	identify relationships between details in a twelfth grade nonfictional passage.
Relationship: Elements	identify relationships between elements in a twelfth grade nonfictional passage.
Tone	determine the tone of a twelfth grade nonfictional passage.

Long Passage

Skill Name	Skill Description
Basic Comprehension	answer basic comprehension questions from a second grade long passage.
Cause and Effect	understand the relationship between cause and effect in a second grade long passage.
Character: Evaluate	evaluate a character's response in a second grade long passage.
Character: Feelings and Emotions	infer character feelings and emotions from a second grade long passage.

Skill Name	Skill Description
Classification	classify objects and events in a second grade long passage.
Compare and Contrast	identify similar characteristics of different items within a second grade long passage.
Details: Identify	identify details from a second grade long passage.
Directions	comprehend the components of instructions, directions, or tasks presented within a second grade long passage.
Draw Conclusion	draw conclusions from a second grade long passage.
Fact and Opinion	distinguish between fact and opinion in a second grade long passage.
Figurative Language	infer meaning from figurative language within a second grade long passage.
Inferences	make inferences from a second grade long passage.
Main Idea	identify the main idea of a second grade long passage.
Moral	interpret the moral lesson of a second grade long passage.
Point of View	identify the point of view from which a second grade long passage was written.
Predicting Outcomes	predict what will come next in a second grade long passage.
Reading Strategies	use vocabulary to understand what is read in a second grade long passage.
Sequence	identify the sequence of events in a second grade long passage.
Story Elements	identify story setting, characters, problem/solution, and events in a second grade long passage.
Summary	summarize material while reading a second grade long passage.
Audience	identify the intended audience for a third grade long passage.
Basic Comprehension	answer basic comprehension questions about a third grade long passage.
Cause and Effect	understand the relationship between cause and effect in a third grade long passage.
Character: Evaluate	evaluate a character's response in a third grade long passage.
Character: Feelings and Emotions	infer character feelings and emotions from a third grade long passage.
Character: Motives	evaluate a character's motives in a third grade long passage.
Character: Traits	identify character traits within a third grade long passage.
Details: Identify	identify details from a third grade long passage.
Draw Conclusion	draw conclusions from a third grade long passage.

Skill Name	Skill Description
Excluded Information	identify the information excluded from a third grade long passage.
Fact and Opinion	distinguish between fact and opinion within a third grade long passage.
Figurative Language	infer meaning from figurative language in a third grade long passage.
Inferences	make inferences from a third grade long passage.
Main Idea	identify the main idea of a third grade long passage.
Moral	interpret the moral lesson of a third grade long passage.
Predicting Outcomes	predict what will come next in a third grade long passage.
Purpose	identify the purpose of a third grade long passage.
Sequence	identify the sequence of events in a third grade long passage.
Setting	identify story setting in a third grade long passage.
Title	select the best title for a third grade long passage.
Basic Comprehension	answer basic comprehension questions about a fourth grade long passage.
Cause and Effect	understand the relationship between cause and effect in a fourth grade long passage.
Character: Evaluate	evaluate a character's response in a fourth grade long passage.
Character: Feelings and Emotions	infer character feelings and emotions from a fourth grade long passage.
Character: Traits	identify character traits in a fourth grade long passage.
Critical Analysis	critically analyze a fourth grade long passage.
Details: Identify	identify details from a fourth grade long passage.
Draw Conclusion	draw conclusions from a fourth grade long passage.
Excluded Information	identify the information excluded from a fourth grade long passage.
Extend Meaning	extend the meaning of a fourth grade long passage.
Fact and Opinion	distinguish between fact and opinion in a fourth grade long passage.
Figurative Language	infer meaning from figurative language in a fourth grade long passage.
Inferences	make inferences from a fourth grade long passage.
Main Idea	identify the main idea of a fourth grade long passage.
Mood	identify the mood of a fourth grade long passage.
Moral	interpret the moral lesson of a fourth grade long passage.
Predicting Outcomes	predict what will come next in a fourth grade long passage.

Skill Name	Skill Description
Sequence	identify the sequence of events in a fourth grade long passage.
Setting	identify story setting in a fourth grade long passage.
Title	select the best title for a fourth grade long passage.
Audience	identify the intended audience for a fifth grade long passage.
Basic Comprehension	answer basic comprehension questions about a fifth grade long passage.
Cause and Effect	understand the relationship between cause and effect within a fifth grade long passage.
Character: Feelings and Emotions	infer character feelings and emotions from a fifth grade long passage.
Character: Motives	evaluate a character's motives in a fifth grade long passage.
Details: Identify	identify details from a fifth grade long passage.
Directions	comprehend the components of instructions, directions, or tasks presented within a fifth grade long passage.
Draw Conclusion	draw conclusions from a fifth grade long passage.
Extend Meaning	extend the meaning of a fifth grade long passage.
Fact and Opinion	distinguish between fact and opinion in a fifth grade long passage.
Figurative Language	infer meaning from figurative language in a fifth grade long passage.
Inferences	make inferences from a fifth grade long passage.
Main Idea	identify the main idea of a fifth grade long passage.
Moral	interpret the moral lesson of a fifth grade long passage.
Plot	identify the plot of a fifth grade long passage.
Predicting Outcomes	predict what will come next in a fifth grade long passage.
Sequence	identify the sequence of events in a fifth grade long passage.
Setting	identify story setting in a fifth grade long passage.
Source	identify the source of a fifth grade long passage.
Summary	summarize material while reading a fifth grade long passage.
Basic Comprehension	answer basic comprehension questions about a sixth grade long passage.
Cause and Effect	understand the relationship between cause and effect within a sixth grade long passage.
Character: Evaluate	evaluate a character's response in a sixth grade long passage.
Character: Motives	evaluate a character's motives in a sixth grade long passage.
Character: Traits	identify character traits in a sixth grade long passage.

Skill Name	Skill Description
Compare and Contrast	identify similar characteristics of different items within a sixth grade long passage.
Details: Identify	identify details from a sixth grade long passage.
Directions	comprehend the components of instructions, directions, or tasks presented within a sixth grade long passage.
Draw Conclusion	draw conclusions from a sixth grade long passage.
Extend Meaning	extend the meaning of a sixth grade long passage.
Fact and Opinion	distinguish between fact and opinion in a sixth grade long passage.
Figurative Language	infer meaning from figurative language in a sixth grade long passage.
Inferences	make inferences from a sixth grade long passage.
Main Idea	identify the main idea of a sixth grade long passage.
Predicting Outcomes	predict what will come next in a sixth grade long passage.
Purpose	identify the purpose of a sixth grade long passage.
Reading Strategies	use vocabulary to understand what is read in a sixth grade long passage.
Sequence	identify the sequence of events in a sixth grade long passage.
Setting	identify story setting from a sixth grade long passage.
Summary	summarize material while reading a sixth grade long passage.
Basic Comprehension	answer basic comprehension questions about a seventh grade long passage.
Cause and Effect	understand the relationship between cause and effect in a seventh grade long passage.
Character: Motives	evaluate a character's motives in a seventh grade long passage.
Character: Traits	identify character traits in a seventh grade long passage.
Compare and Contrast	identify similar characteristics of different items within a seventh grade long passage.
Details: Identify	identify details from a seventh grade long passage.
Directions	comprehend the components of instructions, directions, or tasks presented within a seventh grade long passage.
Draw Conclusion	draw conclusions from a seventh grade long passage.
Extend Meaning	extend the meaning of a seventh grade long passage.
Figurative Language	infer meaning from figurative language within a seventh grade long passage.
Inferences	make inferences from a seventh grade long passage.
Main Idea	identify the main idea of a seventh grade long passage.

Skill Name	Skill Description
Moral	interpret the moral lesson of a seventh grade long passage.
Point of View	identify the point of view from which a seventh grade long passage.
Predicting Outcomes	predict what will come next in a seventh grade long passage.
Reading Strategies	use vocabulary to understand what is read in a seventh grade long passage.
Resolution	identify the problem and solution within a seventh grade long passage.
Sequence	identify the sequence of events in a seventh grade long passage.
Summary	summarize material while reading a seventh grade long passage.
Title	select the best title for a seventh grade long passage.
Basic Comprehension	answer basic comprehension questions about an eighth grade long passage.
Cause and Effect	understand the relationship between cause and effect within an eighth grade long passage.
Character: Evaluate	evaluate a character's response in an eighth grade long passage.
Character: Traits	identify character traits in an eighth grade long passage.
Classification	use prior knowledge to classify objects and events within an eighth grade long passage.
Detail : Identify	identify details from an eighth grade long passage.
Draw Conclusion	draw conclusions from an eighth grade long passage.
Extend Meaning	extend the meaning of an eighth grade long passage.
Fact and Opinion	distinguish between fact and opinion in an eighth grade long passage.
Figurative Language	infer meaning from figurative language within an eighth grade long passage.
Foreshadowing	identify foreshadowing within the context of an eighth grade long passage.
Inferences	make inferences from an eighth grade long passage.
Irony	identify the presence of irony in an eighth grade long passage.
Main Idea	identify the main idea of an eighth grade long passage.
Moral	interpret the moral lesson of an eighth grade long passage.
Predicting Outcomes	predict what will come next in an eighth grade long passage.

Skill Name	Skill Description
Resolution	identify the problem and solution within an eighth grade long passage.
Story Elements	identify story setting, characters, problem/solution, and/or events in an eighth grade long passage.
Title	select the best title for an eighth grade long passage.
Tone	identify the tone of an eighth grade long passage.
Assumption	recognize an assumption stated in a ninth grade long passage.
Basic Comprehension	answer basic comprehension questions about a ninth grade long passage.
Character: Motive	infer character motive in a ninth grade long passage.
Character: Trait/Determine	determine character description in a ninth grade long passage.
Critical Thinking	critically examine a ninth grade long passage.
Detail	identify details from a ninth grade long passage.
Draw Conclusion	draw conclusions from a ninth grade long passage.
Excluded information	determine which information has not been included in a ninth grade long passage.
Extended Information	extend information beyond a ninth grade long passage.
Fact/Opinion	distinguish between fact and opinion within a ninth grade long passage.
Figurative Language	interpret the meaning of figurative language within a ninth grade long passage.
Generalization	form generalizations based on passage elements within a ninth grade long passage.
Inference	make inferences from a ninth grade long passage.
Main Idea	identify the main idea of a ninth grade long passage.
Moral	interpret the moral lesson of a ninth grade long passage.
Point of View	analyze the point of view in a ninth grade long passage.
Predict Outcome	predict what will come next in a ninth grade long passage.
Sequence	identify the sequence of events in a ninth grade long passage.
Summary	summarize material while reading a ninth grade long passage.
Title	select the best title for a ninth grade long passage.
Basic Comprehension	answer basic comprehension questions about a tenth grade long passage.
Cause and Effect	understand the relationship between cause and effect within a tenth grade long passage.
Character: Trait/Determine	determine character description in a tenth grade long passage.
Character: Trait/Infer	infer character traits in a tenth grade long passage.

Skill Name	Skill Description
Construct Meaning	construct meaning from a tenth grade long passage.
Critical Thinking	critically examine a tenth grade long passage.
Details: Identify	identify details from a tenth grade long passage.
Directions	comprehend the components of instructions, directions, or tasks presented within a tenth grade long passage.
Draw Conclusion	draw conclusions from a tenth grade long passage.
Excluded Information	determine which information has not been included in a tenth grade long passage.
Extended Information	extend information beyond a tenth grade long passage.
Figurative Language	interpret the meaning of figurative language within a tenth grade long passage.
Inference	make inferences from a tenth grade long passage.
Main Idea	identify the main idea of a tenth grade long passage.
Moral	interpret the moral lesson of a tenth grade long passage.
Plot	recognize plot climax in a tenth grade long passage.
Predict Outcome	predict what will come next in a tenth grade long passage.
Sequence	identify the sequence of events in a tenth grade long passage.
Source	determine the source of a tenth grade long passage.
Summary	summarize material while reading a tenth grade long passage.
Cause/Effect	differentiate between cause and effect within an eleventh grade persuasive passage.
Classification	categorize information within an eleventh grade persuasive passage.
Critical Thinking: Audience	determine the intended audience of an eleventh grade persuasive passage.
Detail: Importance	identify the reasons specific details are included in an eleventh grade persuasive passage.
Draw Conclusions: Support	evaluate the adequacy of evidence given to support an idea or conclusion in an eleventh grade persuasive passage.
Figurative Language	interpret the effect of figurative language within an eleventh grade persuasive passage.
Inference	make inferences from implied ideas in an eleventh grade persuasive passage.
Interpretation: Rhetorical	interpret the use of rhetorical questions in an eleventh grade persuasive passage.
Interpretations: Implications	interpret the implications made within an eleventh grade persuasive passage.

Skill Name	Skill Description
Main Idea: Composition	identify the main idea in an eleventh grade persuasive passage.
Opinion: Identify	identify an opinion in an eleventh grade persuasive passage.
Organization: Passage	determine how an eleventh grade persuasive passage is organized (problem/solution, compare/contrast, main idea/supporting evidence).
Persuasive: Language/Identify	identify persuasive language in an eleventh grade persuasive passage.
Persuasive: Comprehension	read and understand an eleventh grade persuasive passage.
Point of View: Evaluate	decide how point of view affects the evaluation of an eleventh grade persuasive passage.
Predict Outcome: Information	make predictions from information in an eleventh grade persuasive passage.
Support: Facts/Details	identify the specific details and facts which support a given idea or point of view in an eleventh grade persuasive passage.
Support: Irrelevant Information	distinguish irrelevant information within an eleventh grade persuasive passage.
Text Purpose	determine the purpose of an eleventh grade persuasive passage.
Tone	determine the tone of an eleventh grade persuasive passage.
Assumption: Analyze	analyze underlying assumptions made in a twelfth grade long passage.
Author: Attitude	recognize the author's attitude reflected in a twelfth grade long passage.
Cause/Effect: Infer	infer cause and effect from a twelfth grade long passage.
Compare/Contrast	compare or contrast implicit passage elements within a twelfth grade long passage.
Construct Meaning: Abstract	use analysis, interpretation, and evaluation to construct meaning from abstract ideas in a twelfth grade long passage.
Construct Meaning: Phrase	use context to construct meaning of a phrase within a twelfth grade long passage.
Construct Meaning: Restate	construct meaning from a twelfth grade long passage by identifying restatement of abstract ideas.
Construct Meaning: Word	use context to construct meaning of a word within a twelfth grade long passage.
Detail: Connection	make connections among details in a twelfth grade long passage.
Detail: Importance/Purpose	identify the reasons specific details are included in a twelfth grade long passage.

Skill Name	Skill Description
Draw Conclusion: Implicit	draw conclusions from implicit information within a twelfth grade long passage.
Main Idea	identify the implied main idea of a twelfth grade long passage.
Scientific Text	read and understand a twelfth grade passage that contains scientific information.

B. - Mathematics PERFORMANCE Learning Objectives

Number and Operations

Skill Name	Skill Description
Add money, no regrouping	add money expressed in decimal form that does not require regrouping.
Add single digit numbers, no regrouping	add two single-digit whole numbers without regrouping.
Add two-digit numbers, no regrouping	vertically add two whole numbers with two digits without regrouping.
Apply >, <, and =	apply the symbols <, >, and = to solve various number sentences.
Compare groups of coins	compare the values of more than one group of coins.
Compare whole numbers to 100	compare whole numbers up to 100 to determine if one is greater than, less than, or equal to the other.
Connect fractions to pictures	connect fractions to pictorial models and/or connect models of these types to fractions.
Decimals as money	represent equivalent decimals using money amounts, including coins and bills.
Estimate fractional parts	estimate a fractional part.
Identify equal parts	identify an object that is divided into a specific number of equal parts.
Identify fractional parts	identify the fractional portion of a given set.
Identify Odd/Even Numbers	identify odd or even numbers.
Order whole numbers	order whole numbers from least to greatest.
Ordinal Numbers: 1st - 10th	apply ordinal numbers 1st through 10th.
Place value: tens/hundreds	demonstrate knowledge of place value using tens and hundreds.
Recognize fraction illustrations	recognize various ways of illustrating fractions using physical models, pictorial models, and words.
Relate fractions to the whole	relate the various simple fractions to one whole unit.
Story problem, add 2 two-digit whole #	solve story problems that require the addition of two two-digit whole numbers.
Subtract 2-digit numbers, no regrouping	subtract two two-digit whole numbers without regrouping.
Subtract 2-digit whole #, no regrouping	subtract two two-digit whole numbers horizontally or vertically without regrouping.
Subtract money, no regrouping	subtract money expressed in decimal form that does not require regrouping.

Skill Name	Skill Description
Subtract single digit #, no regrouping	subtract two single-digit whole numbers without regrouping.
Value of a group of coins	identify the value of a group of coins.
Add 1-2 digit whole numbers	add one- to two-digit whole numbers with regrouping.
Add 2- and 3-digit whole numbers	perform the addition of two- and three-digit whole numbers with regrouping.
Add 3 whole numbers	add three whole numbers with one to two digits each.
Add decimals, no regrouping	add decimals that do not require regrouping.
Add decimals, regrouping	add decimals that require regrouping.
Check answer: inverse operations	check the correctness of an answer by using the inverse operation.
Compare decimals, hundredths	compare decimal numbers up to the hundredths position using the order symbols >, <, and =.
Compare Fractions: Illustrations	compare fractions that are illustrated as drawings.
Connect simple fractions w/pictures	connect simple fractions with their equivalent pictures.
Determine equivalent fractions	determine equivalent fractions.
Estimate Adding Whole Numbers	estimate the results of whole number addition problems.
Estimate Subtracting Whole Numbers	estimate the results of whole number subtraction problems.
Make Change: Coins/Bills	make change using coins and bills.
Order decimals	place a series of decimal numbers in order from least to greatest or from greatest to least.
Order fractions with common denominators	order fractions that have common denominators.
Order Fractions: Illustrations	use illustrations to order common fractions.
Round Whole Numbers: 10/100/1,000	round whole numbers to the nearest 10, 100, or 1000.
Story problems, add 3 whole numbers	solve story problems involving adding up to three whole numbers.
Story problems, add or subtract decimals	solve story problems involving adding or subtracting decimals.
Subtract 1-3 digit numbers, regrouping	subtract one- to three-digit whole numbers where regrouping is required.
Subtract 3-digit whole #, no regrouping	subtract whole numbers with up to three digits without regrouping.

Skill Name	Skill Description
Subtract decimals, no regrouping	subtract decimals that do not require regrouping.
Subtract decimals, regrouping	subtract decimals that require regrouping.
Write Expanded Notation	write whole numbers in expanded notation.
Add decimals with 2 decimal places	add two numbers with two decimal places that require regrouping.
Add decimals with 3 decimal places	add two numbers with three decimal places that require regrouping.
Add fractions, common denominators	add two fractions with common denominators.
Change improper fractions to mixed #	convert improper fractions into mixed numbers.
Change Mixed # to improper fractions	change mixed numbers to improper fractions.
Compare fractions, different denominator	compare fractions with different denominators.
Compare whole numbers: ten thousand	compare whole numbers up to ten thousand.
Divide 1-2 digits by 1-digit, no remainder	divide one- to two-digit whole numbers by one-digit whole numbers with no remainders.
Divide 1-2 digits by 1-digit, remainder	divide one- to two-digit whole numbers by one-digit whole numbers producing a remainder.
Divide 3 or 4 digits by 1-digit	divide whole numbers with three or more digits by whole numbers with one digit.
Fact family: multiplication/division	identify the components of a multiplication or division fact family.
Identify Place Value: Thousandths	identify the place value of decimal numbers up to the thousandths place.
Match word names to whole numbers	match word names to whole numbers up to one million.
Multiply 3-digit by 2-digit	multiply a three-digit whole number by a two-digit whole number.
Multiply decimals with 2 decimal places	multiply two numbers with two decimal places each.
Multiply single digit whole numbers	multiply one-digit whole numbers.
Multiply whole # with two or more digits	multiply whole numbers with two or more digits by whole numbers with one digit, regrouping when necessary.

Skill Name	Skill Description
Order fractions, different denominators	order fractions with different denominators.
Story problem, inverse relationship	demonstrate understanding of the inverse relationship between multiplication and division through a word problem.
Story problem, division	solve real world problems involving division of whole numbers with three digits by whole numbers with one digit, with or without remainders.
Story problem, multiply decimals/whole #	solve story problems involving multiplying a decimal and a whole number.
Subtract decimals with 2 decimal places	subtract two numbers with two decimal places that require regrouping.
Subtract decimals with 3 decimal places	subtract two numbers with three decimal places that require regrouping.
Subtract fractions, common denominators	subtract two fractions with common denominators.
Add decimals, 1-4 decimal places	add two or more decimals which have one to four decimal places.
Add fractions, different denominators	add two fractions with different denominators without reducing.
Add mixed numbers	add two mixed numbers without reducing.
Apply divisibility rules	apply the rules of divisibility.
Calculate combinations	calculate combinations using the counting principle.
Decimals: Number Line	approximate the location of a decimal on a number line.
Divide 3-digit by 2-digit	divide a three-digit whole number by a two-digit whole number.
Divide a decimal by a whole number	divide a decimal number by a whole number.
Divide decimals, no remainder	divide two decimal numbers out to a remainder of zero.
Fractions: Number Line	approximate the location of a fraction on a number line.
Identify LCM/GCF	identify the GCF or LCM of two given numbers.
Identify Prime/Composite Numbers	identify prime or composite numbers.
Inverse operations: multiplication/division	recognize number sentences that illustrate the inverse operations of multiplication and division.
Multiple operations: arithmetic problem	solve an arithmetic problem with whole numbers which requires multiple operations.
Multiply a decimal by a whole number	multiply a decimal and a whole number where regrouping is required.

Skill Name	Skill Description
Multiply decimals with 3 decimal places	multiply two numbers with three decimal places each.
Multiply dollar amount by a whole number	multiply a given dollar amount by a whole number.
Multiply fractions	multiply fractions without reducing.
Multiply fractions by whole numbers	multiply a whole number by a fraction without reducing.
Order of operations	determine the correct order of operations when more than one operation is to be performed.
Story problem, add fractions	solve story problems involving adding two fractions with different denominators without reducing.
Story problem, division	solve real world problems by determining that division is required.
Story problem, multiplication of fractions	multiply two fractions in the context of a story problem without reducing.
Story problem, multiplication/division of money	solve story problems that involve the multiplication or division of dollar amounts written in decimal form.
Story problem, multiple operations	obtain solutions to multiple step, real world problems through the application of the four basic operations used with whole numbers.
Story problem, multiplication	solve real world problems by determining that multiplication is needed to solve the problem, multiplying the appropriate numbers, and regrouping.
Story problem, subtract decimals	solve story problems involving subtracting decimals.
Story problem, subtract fractions	solve story problems involving subtracting two fractions with different denominators without reducing.
Story problems, dividing decimals	solve story problems by dividing decimals up to the hundredths position (in both the divisor and dividend).
Story problems, multiple steps	solve story problems that require multiple steps.
Subtract fractions, diff denominators	subtract two fractions with different denominators without reducing.
Subtract mixed numbers	subtract two mixed numbers without reducing.
Subtract mixed numbers, regrouping	perform subtraction with mixed numbers with regrouping, but no reducing.
Add 3 decimals: 3+ decimal places	add three numbers with three or more places after the decimal point.

Skill Name	Skill Description
Calculate with exponents	calculate with exponents.
Change improper fractions into mixed #	convert improper fractions to mixed numbers or vice versa.
Convert decimals to fractions or mixed #	write decimals as fractions or mixed numbers.
Convert decimals to percents	express a decimal number as a percent.
Divide fractions	divide two fractions.
Divide mixed #'s and whole numbers	divide a whole number by a mixed number or vice versa.
Divide mixed numbers	divide two mixed numbers.
Estimate adding decimals	estimate the sum of decimal numbers.
Estimate multiplying decimals	estimate the product of two decimals through the thousandths place.
Estimate subtracting decimals	estimate the solution to subtraction problems involving decimals.
Expressions with exponents	identify an expression that is equivalent to an expression with exponents.
Multiply mixed numbers	multiply two mixed numbers.
Multiply whole and mixed numbers	multiply a mixed number by a whole number.
Order of operations, decimals	solve decimal problems where order of operations is needed.
Proportions	apply properties of proportion to solve problems.
Ratio and proportion: real world	apply ratio and proportion concepts to solve real world scenario problems.
Story problem, add mixed numbers	add two mixed numbers in the context of a story problem.
Story problem, compare decimals	compare decimals in the context of a real life scenario to determine which is the least or greatest.
Story problem, divide fractions/mixed #	divide fractions and/or mixed numbers in the context of a story problem.
Story problem, multiple calculations	solve a story problem requiring multiple calculations.
Story problem, multiply fractions	multiply fractions in the context of a story problem.
Story problem, order decimals	solve story problems involving ordering decimals.
Story problem, rates/measures	solve story problems involving the rate/measure of items.
Add integers, same sign	add integers with the same sign.
Add integers: different sign	add integers with different signs.

Skill Name	Skill Description
Add mixed numbers	add mixed numbers in vertical or horizontal formats.
Compare integers	compare integers using the ordering symbols >, <, and =, or with phrases.
Convert fractions to decimals	convert fractions to decimals.
Convert mixed numbers to decimals	convert mixed numbers to decimals.
Determine percents	work with percents to find the percent of a number, find what percent one number is of another, and/or find a number when a percent is given.
Divide integers: no remainder	divide integers where there are no remainders.
Divide two decimals	divide two decimal numbers out to a remainder of zero after annexing two zeros.
Fraction problems, order of operations	solve fraction problems where the order of operations is needed.
Multiply integers: same sing	multiply integers with the same sign.
Multiply/divide integers: different sign	multiply or divide integers with different signs.
Order fractions/decimals/percents	order numbers given in the form of fractions, decimals, and percents.
Order integers	order a set of integers by value.
Order of operations: simplify expression	use correct order of operations to simplify algebraic expressions with real numbers.
Scientific notation to standard form	write numbers given in scientific notation in standard form.
Story problem, divide a decimal by a whole number	solve story problems that involve dividing a decimal by a whole number.
Story problem, divide a whole number by a decimal	solve a story problem involving dividing a whole number by a decimal.
Story problem, multiple operations: fractions	solve story problems involving multiple operations with fractions.
Story problem, estimate fractions	solve story problems using estimates with fractions.
Story problem, multiple calculations	solve a story problem that requires multiple calculations with decimal numbers.
Story problem, multiple operations	solve a word problem requiring two or more integer operations.
Story problem, multiplying decimals	solve story problems involving multiplying decimals.

Skill Name	Skill Description
Story problem, subtract mixed numbers	subtract two mixed numbers in the context of a story problem.
Subtract integers: different sign	subtract integers with different signs.
Subtract integers: same sign	subtract integers with the same sign.
Write numbers in scientific notation	write whole and/or decimal numbers in scientific notation.
Add and subtract radicals	add and subtract radicals.
Add decimals: positive/negative	add positive and/or negative decimals.
Add fractions: positive/negative	add positive and/or negative fractions.
Add more than two integers	add more than two integers.
Compare products: positive/negative fractions	compare products of positive and negative fractions.
Determine combinations	determine the number of possible combinations of a group of items in a real world context.
Determine permutations	determine the number of possible permutations of a group of items in a real world context.
Determine Permutations	determine the number of permutations of n items taken m at a time within a real world context.
Divide fractions: positive/negative	divide positive and negative fractions.
Integers: compare sums	compare the sums of integers.
Product of more than two integers	find the product of more than two positive and negative numbers.
Solve number sentences: Absolute value	solve an open number sentence which includes absolute value expressions.
Story problem, integers	solve real world problems using integers.
Subtract decimals: positive/negative	subtract positive and/or negative decimals.
Subtract fractions: positive/negative	subtract positive and/or negative fractions.
Add matrices	perform addition with matrices.
Calculate compound interest	calculate compound interest.
Rates, ratio, and proportion: problem solve	solve problems that use rates, ratios, and/or proportion in a variety of applications.
Scalar multiplication with matrices	perform scalar multiplication with matrices.

Skill Name	Skill Description
Solve Percent Application Problems	solve percent application problems involving sales tax, discount, or commission.
Story problem: combination, permutation	obtain solutions to real world problems by applying permutations or combinations.
Understand Negative Exponents	understand and use negative exponents.
Understand Rational Exponents	understand and use rational exponents.

Geometry

Skill Name	Skill Description
Describe the Position of Objects	describe the relative position of objects in space in terms of proximity, position, and/or direction.
Identify combined shapes	recognize which shapes can be combined to form a given shape.
Identify congruent shapes	identify congruent shapes.
Identify plane figures	identify plane figures.
Identify solid figures	identify solid figures.
Identify symmetrical shapes	identify symmetrical shapes.
Identify geometric figures	identify various geometric figures.
Identify shapes in real world objects	identify shapes in real world objects and drawings.
Identify similar figures	identify similar figures.
Identify squares and rectangles	identify squares and rectangles.
Identify congruent shapes	identify shapes that are congruent.
Identify geometric figures: descriptions	identify a certain geometric figure by reading a description of the figure.
Identify intersecting and perpendicular	identify intersecting and/or perpendicular lines.
Identify parallel lines	identify parallel lines.
Identify/Classify triangles	identify and classify various triangles.
Locate ordered pairs	locate points on a grid using ordered pairs.
Recognize symmetrical figures	identify figures with a line of symmetry.
Define angles in figures	define various angles in a given figure.

Skill Name	Skill Description
Describe three-dimensional figures	describe three-dimensional figures in terms of their edges, vertices, and faces.
Identify angles within a figure	identify various angles in a given figure.
Justify Similar Figures	explain why two figures are or are not similar.
Plot ordered pairs: whole numbers	record and plot ordered pairs of whole numbers in a rectangular coordinate system.
Recognize Reflection/Rotation	recognize the reflection or rotation of an image.
Classify triangles	classify types of triangles.
Identify lines of symmetry	identify the line(s) of symmetry in a figure.
Identify/define circle parts	identify and define circle parts.
Name ordered pairs	give a name to an ordered pair in the coordinate plane.
Define polygon properties	recognize or define the properties of polygons.
Define Properties of Quadrilaterals	define the properties of quadrilaterals.
Display knowledge of various angles	identify, describe, or apply knowledge of various angles including adjacent, vertical, straight, acute, right, obtuse, supplementary, and complementary.
Identify Lines of symmetry	identify the line(s) of symmetry in a figure.
Identify/Calculate interior angles	identify and calculate the interior angles of a given figure.
Name ordered pairs: Integers	find and name points with ordered pairs of integers.
Name/Describe/Define figures	name, describe, or define a given figure.
Apply Meaning: Parallel, Perp., Skew	apply the meaning of parallel lines, perpendicular lines, and/or skew lines to obtain problem solutions.
Coordinate Plane: Four Quadrants	demonstrate knowledge of the four quadrants of the coordinate plane and the attributes of points in each of these quadrants.
Apply knowledge of angles and bisectors	apply knowledge of angles, angle bisectors, perpendicular bisectors, and/or congruent angles to solve geometry problems.
Apply properties of perpendicular bisect	apply the properties of a perpendicular bisector in solving both mathematical and/or real world problems.
Calculate angle measures in a polygon	calculate the sum of the angles of a polygon.
Classify quadrilaterals	classify quadrilaterals based on their side lengths or angle measures.

Skill Name	Skill Description
Classify triangles	classify triangles according to their side lengths and/or angle measures.
Complete Proofs	complete geometric proofs.
Corresponding parts of congruent triangles	apply concepts involving the corresponding parts of congruent triangles.
Determine points after reflection	determine new points of a figure that is transposed across a line of reflection.
Identify Interior Angles	identify the interior angles of a polygon.
Identify Transformations	identify the following transformations: reflection, rotation, and/or translation.
Point/Line symmetry	determine whether a figure is symmetric about a line or a point.
Properties of kites/trapezoids	determine the properties which are specific to kites or trapezoids.
Recognize/Define/Apply various angles	define, recognize, and/or apply alternate interior, alternate exterior, corresponding, and vertical angles.
Recognize/Evaluate tangent, sine, cosine	recognize and/or evaluate tangent, sine, and/or cosine for an acute angle of a right triangle.
SAS and ASA congruency	apply SAS, AAS, and/or ASA theorems to determine the congruence of triangles.
Story problem, right triangle	solve real world right triangle problems using trigonometric concepts.
Translation: Ordered Pair	perform a translation onto an ordered pair given the rule of translation.
Use Pythagorean theorem	use the Pythagorean theorem to determine the unknown side length of a right triangle.

Data Analysis and Probability

Skill Name	Skill Description
Equally likely outcomes	determine events as being equally likely to occur.
Interpret pictographs	interpret a pictograph.
Interpret tables	interpret a table.
Least likely outcomes	determine events as being least likely to occur.
Most likely outcomes	determine events as being most likely to occur.
Read Bar Graphs	read a bar graph.
Read Pictographs	read a pictograph.
Read Tables	read a table.

Skill Name	Skill Description
Chances of equally likely outcomes	determine the chances of simple events which have equally likely outcomes.
Interpret Bar Graphs	interpret a bar graph.
Interpret Tally charts	interpret information presented in a tally chart.
Least likely outcome	identify the least likely outcome.
Most likely outcome	identify the most likely outcome.
Read/Compare Information in a table	read and compare information in a table.
Calculate Mean	calculate the mean of a set of data.
Categorize probability of common events	determine common events to be impossible, less likely, equally likely, more likely, or certain.
Interpret double bar graphs	interpret a double bar graph.
Predict outcomes of experiments	predict the outcomes of probability experiments.
Probability of an event: Fraction form	determine the probability of an event and express it as a ratio in fraction form.
Read double bar graphs	read a double bar graph.
Determine average	determine the average of a given set of numbers within a mathematical or problem solving situation.
Interpret line graphs	interpret data read from a line graph.
Predict outcomes using data	predict outcomes based on collected data.
Probability of an event	determine the probability of an event.
Story problem, average	determine the average of a set of given numbers within the context of a real world problem.
Calculate mean	calculate the mean within a mathematical or problem solving situation.
Calculate median	calculate the median within a mathematical or problem solving situation.
Calculate mode	calculate the mode within a mathematical or problem solving situation.
Calculate range	calculate the range within a mathematical or problem solving situation.
Calculate theoretical probability	calculate the theoretical probability of an event.
Interpret circle graphs	interpret data read from a circle graph.
Read circle graphs	read a circle graph.
Determine experimental probability	determine the experimental probability of an event.

Skill Name	Skill Description
Extrapolate data: Circle graphs	extrapolate data from a circle graph.
Extrapolate data: Multiple line graphs	extrapolate data from a multiple line graph.
Formulate predictions: probability	formulate predictions based on the probability of simple events.
Measures of central tendency: Most appropriate	find and use the most appropriate measure of central tendency in a real world context.
Calculate odds	calculate the odds of an event within a problem solving situation.
Find Measures of Central Tendency	find measures of central tendency including mode, median, mean, and/or range for real world figures.
Independent/dependent events	decide whether a given event is independent or dependent and solve.
Probability: Dependent/Independent Events	find the probability of dependent or independent events in a real world context.
Use Fundamental Counting Principle	find the number of ways several objects may be arranged using the fundamental counting principle within a real world situation.
Determine Theoretical Probability	find the possibility of given outcomes occurring by applying theoretical probability.
Estimate: Line of Best Fit	estimate a line of best fit for a given set of data.
Interpret Box-and-Whisker Plot	interpret and utilize a box-and-whisker plot.
Interpret Stem-and-Leaf Plot	interpret and utilize a stem-and-leaf plot.
Probability: Mutually exclusive/inclusive	find the probability of mutually exclusive events and inclusive events.
Story problem: dependent events	determine the probability of dependent events given in the context of a real world situation.
Story problem: independent events	determine the probability of independent events given in the context of a real world situation.
Understand tree diagrams	solve real world problem situations using tree diagrams.

Algebra

Skill Name	Skill Description
Complete counting pattern	complete a counting pattern.
Complete number patterns	complete a number pattern.

Skill Name	Skill Description
Fact family: addition/subtraction	identify a number sentence within an addition/subtraction fact family.
Missing number: addition sentence	determine the missing addend in an addition number sentence.
Missing number: subtraction sentence	determine the missing number in a subtraction number sentence.
Missing operational symbol	determine which operational symbol is missing from an equation.
Patterns: Identify next item	identify the next item in a pattern.
Sort/Classify Objects	sort or classify objects according to attributes that are similar such as size, shape, and color.
Write number sentences: add and subtract	write addition or subtraction number sentences which represent real world situations.
Continue geometric patterns	continue geometric patterns.
Continue number patterns	continue a number pattern.
Identify missing/extraneous information	identify when information is missing or extraneous.
Missing number: multiplication sentence	determine the missing factor in a multiplication sentence.
Missing symbol: multiplication/division sentence	identify the missing symbol for a multiplication or division number sentence.
Write number sentences: division	write division number sentences which represent real world situations.
Write number sentences: multiplication	write number sentences to illustrate situations involving multiplying whole numbers.
Associative property of multiplication	demonstrate the associative property of multiplication.
Determine missing/extraneous information	determine missing or extraneous information in problem solving scenarios.
Extend geometric patterns	extend geometric patterns.
Missing number: division sentence	determine the missing divisor or dividend in a division sentence.
Pattern: determine missing elements	determine the missing elements of a series of numbers which create a pattern.
Story problem: identify operation	read a given story problem and identify the operation needed to solve the problem.
Identify Expression: word problem	identify the expression to be used in solving a word problem.

Skill Name	Skill Description
Match story problem to an equation	choose the story problem that corresponds to a given equation.
Number machines: output	identify the output of number machines.
Evaluate Variable Expressions	evaluate a given variable expression by substituting the given values.
Output values of functions	determine the output values of a given function.
Convert b/w expressions/word phrases	perform conversions between variable expressions and word phrases.
Create/Evaluate algebraic expressions	create and evaluate algebraic expressions from a given situation.
Evaluate expressions	evaluate expressions.
Multi-step equations: one variable	obtain solutions to multiple step equations with one variable.
Solve Mathematical Proportions	solve a mathematical proportion using algebraic methods.
Solve one-step linear equations	obtain solutions to one step linear equations.
Story problem, determine equation/solve	determine the correct equation for a word problem and solve.
Write equations: word problems	determine the equation to be used in solving a word problem.
Add and subtract polynomials	perform addition and/or subtraction of polynomials.
Apply distributive property	show the equation or expression resulting from the application of the distributive property.
Apply the quadratic formula	solve quadratic equations by applying the quadratic formula.
Evaluate expressions	evaluate expressions for given replacement values of variables using the order of operations.
Factor trinomials	factor a trinomial.
Factoring the difference of 2 squares	factor the difference of two squares.
Graph Equations: Constant	graph equations of the form y = c and x = c.
Graph Inequalities: Number Line	graph the solution to simple and compound one variable inequalities on a number line.
Multiply a monomial and a polynomial	multiply a monomial and a polynomial.
Multiply and divide monomials	multiply or divide monomials.
Multiply binomials	multiply two binomials of the first degree resulting in a trinomial.

Skill Name	Skill Description
Simplify exponential expressions	simplify exponential expressions.
Simplify expressions: like terms	combine like terms in order to simplify an expression.
Simplify radical expressions	simplify radical expressions.
Solve a system: substitution	solve a system of two equations with two variables through substitution.
Solve absolute value equations	determine solutions for equations where absolute value is involved.
Solve equations with two variables	solve equations with two variables using basic operations.
Solve inequalities	solve inequalities using basic operations.
Solve literal equations	obtain solutions to literal equations.
Solve two-variable systems	find the solution to two-variable systems of linear equations.
Story problem, quadratic equations	solve quadratic equations in real world situations.
Story problems, write equations	write equations based on word problems.
Write linear equations	write linear equations.
Write/Solve: real world linear equations	set up and solve two linear equations that represent a real world problem.
Apply absolute value functions	calculate and apply an absolute value function.
Calculate Slope	calculate the slope of a line.
Complete function tables	complete function tables.
Determine Distance	determine the distance between two points.
Determine function rules	determine a function rule to explain tables of related input-output variables.
Determine Midpoint	determine the midpoint between two points.
Direct variation: problem solve	algebraically solve problems involving direct variation.
Function vs. Relation	determine whether a given relationship is a function.
Graph absolute value equations	graph absolute value equations on the coordinate plane.
Graph exponential functions	graph exponential functions.
Graph inequalities: two variables	graph inequalities which have two variables.
Graph linear equations	graph a linear equation.

Skill Name	Skill Description
Graph/Solve systems of equations	graphically represent systems of equations and identify the solution from the graph.
Graph/Solve systems of inequalities	graph a system of inequalities and identify the solution set.
Indirect variation: problem solve	algebraically solve problems involving indirect variation.
Joint/Combined variation: problem solve	use joint and/or combined variation in solving problems.
Multiply polynomials	multiply two polynomials.
Solve for a variable: two variable equation	solve for the value of a variable in a two variable equation.
Solve inequalities: real world	solve real world inequalities.
Solve literal equations	solve literal equations for a specific variable.
Solve one variable equations	solve a one variable equation that requires more than one operation.
Solve quadratic equations by graphing	solve quadratic equations with two variables by graphing.
Solve quadratic equations: factoring	solve a quadratic equation by factoring.
Solve systems of inequalities	solve a system of inequalities.
Solve systems of linear equations	obtain solutions to systems of two linear equations.
State domain/range	state the domain and/or range of a given relation.

Measurement

Skill Name	Skill Description
Convert time	convert time between weeks and days and/or minutes and hours.
Elapsed Time: apply terms	approximate and measure elapsed time by applying the following terms: before or after; yesterday, today, or tomorrow; day or night, morning, afternoon, or evening; and hour or half-hour.
Measure capacity	measure capacity.
Measure length	determine the length of an object.
Measure time: story problem	measure time in clock terms (hours, minutes) within a story problem.
Measure weight	determine the weight of a given object.
Order objects by length	order objects according to their length.

Skill Name	Skill Description
Read a thermometer	read a thermometer.
Reasonable answers	exhibit an understanding of reasonableness of results when working with measurement.
Tell time to the nearest 5 minutes	tell time in five minute intervals using an analog clock.
Calculate length of time: add/subtract	calculate length of time through addition and subtraction.
Determine area using models	determine the area of a rectangular figure by counting the squares within the figure.
Determine perimeter	find the perimeter of a figure with the sides labeled.
Determine volume using models	determine the volume of the figure through models.
Tell time to the nearest minute	tell time to the nearest minute using an analog clock.
Use a calendar	solve problems involving calendars.
Appropriate Measure	choose the appropriate measure for determining weight, length, or size.
Convert time	convert units of time.
Convert units of length: standard	convert units of standard length between yards, feet, and inches.
Find measurements: scale drawings	find measurements from scale drawings.
Measurement conversion: standard	convert units of weight within the standard system.
Story problems, measurement	solve measurement story problems.
Area of a rectangle with formula	find the area of a rectangle when a formula is given.
Area of triangle with formula	find the area of a triangle when a formula is given.
Capacity conversion: metric/standard	convert units of capacity within either the metric or standard system.
Determine volume, given formula	find the volume of a figure when a formula is given.
Identify tools of measurement	identify various tools of measurement.
Length of a line segment	determine the length of a line segment using a given line with distance and points marked on it.
Perimeter of a polygon	find the perimeter of a polygon.
Units of measurement: add/subtract	add or subtract units of measurement.

Skill Name	Skill Description
Add length measurements	add length measurements.
Area of a triangle	calculate the area of a triangle using the correct formula.
Area of rectangles, no formula	calculate the area of a rectangle given its measurements.
Circumference, given formula	find the circumference of a circle given the diameter or radius.
Convert measurements, standard/metric	convert either standard or metric units of measurement.
Story problem, elapsed time	solve story problems involving elapsed time.
Subtract Length Measurement	subtract length measurements.
Area of parallelograms, no formula	calculate the area of a given parallelogram.
Calculate temperature change	calculate temperature changes.
Convert capacity: standard/metric	convert units of capacity within either the metric or standard system.
Convert Celsius to Fahrenheit	convert degrees Celsius to degrees Fahrenheit given the formula.
Convert Fahrenheit to Celsius	convert degrees Fahrenheit to degrees Celsius.
Convert weight: standard/metric	convert units of weight within either the metric or standard system.
Scale Factor: problem solve	solve problems involving scale factors, using ratio and proportion.
Story problem, area of triangle	solve a real world problem by solving for the area of a triangle.
Story problem, convert measurements	apply metric conversion skills (converting within metric system) to solve real world application problems.
Add/subtract: mixed units of measurement	add and subtract units of measurement when given in different units.
Area of parallelogram	calculate the area of a parallelogram.
Determine side length	determine the length of a side of a figure when given the area or the perimeter.
Story problem, time conversion	solve a story problem involving elapsed time and the conversion of units of time.
Story problem: Measuring	apply measuring procedures and formulas to solve story problems.
Area of circle, no formula	calculate the area of a circle when no formula is given.
Calculate areas of triangles/trapezoids	calculate the area of a triangle or trapezoid.

Skill Name	Skill Description
Calculate Surface Area: 3-D Figures	determine the surface area of a three-dimensional figure.
Calculate volume of cylinders/cones	calculate the volume of a given cylinder or cone.
Calculate volume of spheres	calculate the volume of a sphere.
Calculate volumes of prisms/pyramids	calculate the volume of a given prism or pyramid.
Circumference , no formula	calculate the circumference of a circle when no formula is given.
Determine arc length	determine the arc length of a circle.

C. - Language Arts PERFORMANCE Learning Objectives

Capitalization

Skill Name	Skill Description
Capital Letter: Isolation	match uppercase and lowercase letters in isolation.
City/State: One Word/Isolation	determine the correct capitalization of one word cities and states in isolation.
Closing	determine the correct capitalization of a one word closing in a friendly letter.
Days/Months: Sentence	determine the correct capitalization of the days of the week and months of the year in a sentence.
Days: Isolation	determine the correct capitalization of days of the week in isolation.
Days: Sentence	determine the correct capitalization of days of the week in a sentence.
First Name: Isolation	determine the correct capitalization of a first name in isolation.
Greeting	determine the correct capitalization of a greeting in a letter.
Holidays: Sentence	identify the sentence containing correct capitalization of a holiday.
Initials: Isolation	determine the correct capitalization of initials in isolation.
Month: Sentence	determine the correct capitalization of months of the year in a sentence.
Months: Isolation	determine the correct capitalization of months of the year in isolation.
Personal Titles: Isolation	determine the correct capitalization of personal titles in isolation.
Pronoun "I"	determine the correct capitalization of the pronoun "I" in a sentence.
Seasons: Isolation	determine the correct lowercase version of a season in isolation.
Street: Isolation	determine the correct capitalization of a street address in isolation.
Beginning of Sentence	choose the best revision of a capitalization error at the beginning of a sentence.
Beginning of Sentence: Edit	edit to identify a capitalization error at the beginning of a sentence.
City/State: Edit	edit to identify a capitalization error with city or state names.
City/State: Revise	revise a sentence for a capitalization error with a city or state.

Skill Name	Skill Description
City/State: Sentence	determine the correct capitalization of a city and state in a sentence.
Family Relationships: Sentence	determine the correct capitalization of family relationships in a sentence.
First/Last Names: Isolation	determine the correct capitalization of first and last names in isolation.
Holidays: Edit	edit to identify a capitalization error with holidays.
Holidays: Sentence	choose the sentence containing the correct capitalization of a holiday.
Initials: Sentence	determine the correct capitalization of initials in a sentence.
Personal Titles: Sentence	identify the correct capitalization of personal titles in a sentence.
Seasons: Sentence	determine the correct lowercase version of seasons in a sentence.
State Abbreviation: Isolation	determine the correct capitalization of state abbreviations in isolation.
Street/City/State: Address	determine the correct capitalization of a street, city, and state in an address.
Street/City/State: Edit	edit to identify a capitalization error with street, city, or state names.
Book Titles	use correct capitalization of book titles.
Directional Terms: Edit	edit to identify which part of the sentence contains an incorrectly capitalized directional term.
Directional Terms: Sentence	identify the sentence that contains the correct capitalization of directional terms.
Edit Sentence	edit to identify a capitalization error.
Geographical Names/Regions/Edit	edit to identify a capitalization error with geographical names or regions.
Geographical Names/Regions: Sentence	determine the correct capitalization of geographical names and regions in a sentence.
Holidays: Sentence	determine the correct capitalization of holidays in a sentence.
Personal Titles: Sentence	identify which sentence contains the correct capitalization of personal titles.
Proper Adjective: Edit	edit a sentence that contains an error in capitalizing proper adjectives.
Proper Noun: Edit	edit to identify a capitalization error with proper nouns.
State Abbreviation: Address	determine the correct capitalization of state abbreviations in an address.

Skill Name	Skill Description
Book Titles: Sentence	determine the correct capitalization of book titles in a sentence.
Direct Quote: Sentence	determine the correct capitalization of a direct quotation in a sentence.
Directional Terms: Edit	edit to identify a capitalization error with directional terms.
Directional Terms: Sentence	determine the correct capitalization of directional terms in a sentence.
Edit Sentence	edit a sentence containing a capitalization error.
Eras/Events: Sentence	determine the correct capitalization of eras or events in a sentence.
Geographical Names/Regions: Sentence	identify which sentence contains the correct capitalization of geographical names and regions.
Holidays: Sentence	determine which sentence contains the correct capitalization of holidays.
Languages: Sentence	determine the correct capitalization of a language in a sentence.
Organization Abbreviation/Acronym: Sentence	determine the correct capitalization of an organization, abbreviation, or acronym in a sentence.
Personal Titles: Sentence	determine the correct capitalization of personal titles in a sentence.
Proper Adjective: Sentence	determine the correct capitalization of proper adjectives in a sentence.
Proper Adjectives: Edit	edit to identify a capitalization error with proper adjectives.
Proper Nouns: Sentence	determine the correct capitalization of proper nouns in a sentence.

Parts of Speech

Skill Name	Skill Description
Adjective: Use	use an adjective in a sentence.
Adverb: Use	use an adverb in a sentence.
Noun: Locate	locate a noun in a sentence with a definition.
Noun: Possessive/Complete	complete a sentence with a possessive noun.
Noun: Use	use a noun in a sentence.
Pronoun: Determine	determine the correct use of a pronoun in a sentence.
Pronoun: Personal/Use	use a personal pronoun in a sentence.
Pronoun: Possessive/Use	use a possessive pronoun in a sentence.

Skill Name	Skill Description
Pronoun: Use	use a pronoun in a sentence.
Verb: Common Irregular/Use	use a common irregular verb in a sentence.
Verb: Future Tense/Complete	complete a sentence with a future tense verb.
Verb: Past Tense/Use	use a past tense verb in a sentence.
Verb: Present Tense/Complete	complete a sentence with a present tense verb.
Adjective: Demonstrative/Use	use a demonstrative adjective in a sentence.
Adverb: Locate	locate an adverb by identifying the word that best describes the verb.
Adverb: Superlative/Complete	complete a sentence with a superlative adverb.
Noun: Collective/Use	use a collective noun in a sentence.
Noun: Picture/Identify	identify a picture of a noun.
Noun: Possessive/Locate	locate a possessive noun in a sentence.
Noun: Proper/Use	use a proper noun in a sentence.
Noun: Singular/Identify	identify a singular noun in isolation.
Noun: Singular/Locate	locate a singular noun in a sentence.
Pronoun: Use	use a subject, singular, or plural pronoun in a sentence.
Verb: Helping/Auxiliary/Use	use a helping or auxiliary verb in a sentence.
Verb: Inflectional Ending/Use	use a verb with an inflectional ending in a sentence.
Verb: Linking/Use	use a linking verb in a sentence.
Verb: Past Tense/Use	use the past tense of a verb in a sentence.
Verb: Present Progressive/Use	use the present progressive tense of a verb in a sentence.
Verb: Present Tense/Use	use the present tense of a verb in a sentence.
Adjective: Comparative/Use	use a comparative adjective in a sentence.
Adjective: Superlative/Use	use a superlative adjective in a sentence.
Conjunction: Coordinating/Determine	determine the correct use of a coordinating conjunction in a sentence.
Conjunction: Coordinating/Use	use a coordinating conjunction in a sentence.
Conjunction: Correlating/Complete	complete a sentence using a correlating conjunction.
Conjunction: Subordinating/Use	use a subordinating conjunction in a sentence.
Noun: Plural/Use	use a plural noun in a sentence.
Noun: Proper/Identify	identify a proper noun in isolation.

Skill Name	Skill Description
Preposition: Determine	determine the correct use of a preposition in a sentence.
Preposition: Use	use a preposition in a sentence.
Pronoun: Interrogative/Use	use an interrogative pronoun in a sentence.
Pronoun: Object/Use	use an object pronoun in a sentence.
Pronoun: Personal/Determine	determine the correct use of a personal pronoun in a sentence.
Verb: Future Tense/Use	use a future tense verb in a sentence.
Verb: Gerund/Use	use a gerund in a sentence.
Verb: Infinitive/Use	use the infinitive form of a verb in a sentence.
Verb: Past/Locate	locate a past tense verb in a sentence.
Verb: Present Tense/Locate	locate a present tense verb in a sentence.
Adjective: Comparative/ "More"	complete a sentence with a comparative adjective that uses the word "more."
Adjective: Locate	locate an adjective in a sentence.
Adjective: Positive/Use	understand terminology in order to use a positive adjective in a sentence.
Adverb: Locate	locate an adverb in a sentence.
Adverb: Superlative/Use	use a superlative adverb in a sentence.
Adverb: Use	understand terminology in order to use an adverb in a sentence.
Conjunction: Correlating/Determine	determine the correct use of a correlating conjunction in a sentence.
Conjunction: Correlating/Use	use a correlating conjunction in a sentence.
Noun: Plural/Use	use a plural noun in a sentence by differentiating between plural, possessive, and singular nouns.
Preposition: Determine	identify the sentence that contains the correct use of a preposition.
Pronoun: Antecedent/Locate	locate the antecedent in a sentence.
Pronoun: Demonstrative/Use	use a demonstrative pronoun in a sentence.
Pronoun: Indefinite/Use	use an indefinite pronoun in a sentence.
Pronoun: Subject/Use	use a subject pronoun in a sentence.
Verb: Future/Use	use a future tense verb in a sentence.
Adverb: Comparative/Use	use a comparative adverb in a sentence.
Adverb: Locate	understand terminology in order to locate an adverb in a sentence.
Pronoun: Antecedent/Locate	identify the pronoun antecedent in a sentence.
Pronoun: Interrogative/Determine	understand terminology in order to determine the correct use of an interrogative pronoun in a sentence.

Skill Name	Skill Description
Verb: Future Perfect/Use	use a future perfect tense verb in a sentence.
Verb: Future/Determine	determine the correct use of a future tense verb in a sentence.
Verb: Irregular/Use	use an irregular form of a verb in a sentence.
Verb: Present Perfect Progressive/Use	understand terminology in order to use a present perfect progressive verb in a sentence.
Verb: Present Perfect/Use	use a present perfect tense verb in a sentence.
Verb: Present Progressive/Use	understand terminology in order to use a present progressive verb in a sentence.
Direct Object: Locate	locate the direct object in a sentence.
Indirect Object: Locate	locate the indirect object in a sentence.
Noun: Possessive	use a possessive noun in a sentence.
Pronoun: Interrogative	determine the correct use of an interrogative pronoun in a sentence.
Pronoun: Relative	determine the correct use of a relative pronoun in a sentence.
Verb Tense: Error	determine which sentence contains an error in verb tense.
Verb: Future Perfect	use a future perfect tense verb in a sentence.
Verb: Irregular	complete a sentence with the correct form of an irregular verb.
Verb: Past Perfect	use a past perfect tense verb in a sentence.
Verb: Past Progressive	choose the past progressive tense of a verb in order to complete a sentence.
Verb: Past Tense	determine the correct use of a past tense verb in a sentence.
Verb: Present Perfect	use a present perfect tense verb in a sentence.
Verb: Present Perfect Progressive	use a present perfect progressive tense verb in a sentence.
Verb: Present Progressive	determine the correct use of a present progressive verb in a sentence.
Verb: Present Tense	determine the correct use of a present tense verb in a sentence.
Adverb: Locate	use terminology to identify an adverb in a sentence.
Adverb: Superlative	determine the correct use of a superlative adverb in a sentence.
Noun/Pronoun: Function	determine the function of a noun or pronoun.
Noun: Possessive	determine the correct use of a possessive noun in a sentence.
Verb: Future Perfect	determine the correct use of a future perfect verb in a sentence.
Verb: Gerund	determine which sentence correctly uses a gerund.

Skill Name	Skill Description
Verb: Irregular	determine the correct use of an irregular verb in a sentence.
Verb: Participle/Locate	locate a participle in a sentence.
Verb: Participle/Use	use a participle in a sentence.
Verb: Past Perfect	understand terminology to use the past perfect tense of a verb in a sentence.
Verb: Past Progressive	use a past progressive tense verb in a sentence.
Verb: Present Perfect	determine the correct use of a present perfect verb in a sentence.
Verb: Present Progressive	use a present progressive verb in a sentence.

Punctuation

Skill Name	Skill Description
Apostrophe: Contraction/Placement	determine the correct placement of an apostrophe in a contraction.
Colon: Hour/Minute/Isolation	use a colon between hour and minute in isolation.
Comma: City/State/Isolation	use a comma between a city and a state in isolation.
Comma: Closing	use a comma after the closing in a friendly letter.
Comma: Greeting	use a comma after the greeting in a friendly letter.
Comma: Match	match a comma to its name.
Contraction: Use	determine the correct contraction to use in a sentence.
Exclamation Point: Edit	edit to identify an error in the placement of an exclamation point at the end of a sentence.
Period: Differentiate	edit for the correct use of a period to end a sentence.
Question Mark: Use	use a question mark at the end of a sentence.
Question: Identify	identify a question.
Apostrophe: Contraction/Use	identify the correct way to use an apostrophe in a contraction.
Apostrophe: Possession/Use	use an apostrophe to show possession.
Colon: Hour/Minute/Use	determine the correct way to use a colon between hour and minute in a sentence.
Comma: City/State/Sentence	use a comma between city/state in a sentence.
Comma: Closing/Use	determine the correct use of a comma after the closing in a friendly letter.
Comma: Greeting/Use	determine the correct use of a comma after the greeting in a friendly letter.
Comma: Month/Day/Year/Use	use a comma in a date to separate the month and day from the year.

Skill Name	Skill Description
Contraction: Correct way to contract	determine the correct way to contract two words.
Contraction: Use	use a contraction to complete a sentence.
Period: Abbreviation/Placement	determine the correct placement of a period in an abbreviation.
Period: Initials/Use	use periods with initials.
Period: Personal Titles/Use	use a period with personal titles in a sentence.
Apostrophe: Possession/Placement	determine the correct placement of an apostrophe to show possession.
Apostrophe: Possession/Use	determine the correct use of an apostrophe to show possession.
Colon: Match	match a colon to its name.
Comma: Adjective Series/Placement	determine the correct placement of commas in an adjective series.
Comma: Friendly Letter/Edit	edit to identify an error with the comma in the greeting or closing of a friendly letter.
Contraction: Correct way to contract	contract two words.
Contraction: Identify Words	identify the two words in a contraction.
Period: Abbreviation/Edit	edit to identify an error with a period in abbreviation.
Period: Abbreviation/Use	determine the correct use of a period in an abbreviation.
Period: Edit	edit to identify an error in the placement of a period.
Quotation Marks: Short Story Titles	determine the correct use of quotation marks with short story titles.
Quotation Marks: Special Words	determine the correct use of quotation marks with special words.
Underline: Book Title	determine the correct way to underline a book title.
Underline: Magazine Titles	determine the correct way to underline a magazine title.
Underline: Newspaper Title	determine the correct way to underline a newspaper title.
Colon: List/Placement	determine the correct placement of a colon with a list.
Colon: List/Revise	revise a sentence for punctuation errors with a colon with a list.
Comma & Quotation Marks: Quote	determine the correct use of a comma and quotation marks with a quotation.
Comma Splice: Avoid	determine which sentence is written correctly, avoiding a comma splice.
Comma: City/State/Use	determine the correct use of a comma between city and state.

Skill Name	Skill Description
Comma: Compound Sentence/Edit	edit to identify an error in the placement of a comma in a compound sentence.
Comma: Compound Sentence/Placement	determine the correct placement of a comma in a compound sentence.
Comma: Compound Sentence/Use	determine the correct use of a comma with a compound sentence.
Comma: Dependent Clause/Use	determine the correct use of a comma with a dependent clause.
Comma: Introductory Element/Choose	choose the sentence that contains the correct use of a comma with an introductory element.
Comma: Introductory Element/Placement	determine which sentence contains the correct placement of a comma with an introductory element.
Comma: Mild Interjection/Revise	revise a sentence for placement errors with a comma with a mild interjection.
Comma: Mild Interjection/Use	use a comma with a mild interjection.
Comma: Quote/Use	choose which sentence contains the correct use of comma with a quotation.
Period: Use	determine the correct use of a period.
Quotation Marks: Purpose	determine the purpose of the quotation marks in a sentence.
Quotation marks: Quote/Placement	identify which sentence contains the correct use of quotation marks with direct quotes.
Quotation Marks: Quote/Use	use quotation marks in a direct quote.
Quotation Marks: Use	determine the correct use of quotation marks.
Colon: Greeting: Use	use a colon in the greeting of a business letter.
Comma: Avoid Overuse/Edit	edit to identify the error of comma overuse.
Comma: Avoid Overuse/Placement	determine the correct placement of commas, avoiding overuse.
Comma: Introductory Element/Placement	determine the correct placement of a comma with an introductory element.
Comma: Introductory Element/Use	determine the correct use of a comma with an introductory element.
Comma: Name Person Addressed/Use	determine the correct use of a comma to set off the name of person being addressed.
Comma: Quote/Placement	determine which sentence contains the correct placement of a comma with a quotation.
Comma: Quote/Use	determine the correct use of a comma with a quotation.
Comma: Series/Edit	edit to identify an error with a comma in a series.

Skill Name	Skill Description
Comma: Series/Placement	determine the correct placement of a comma in a series.
Punctuation: Best Revision	choose the best revision of a punctuation error.
Punctuation: Changes Meaning	determine how changing punctuation changes the meaning of the sentence.
Punctuation: Missing/Edit	edit to identify missing punctuation.
Quotation Marks: Dialogue/Edit	edit to identify a punctuation error with quotation marks in written dialogue.
Quotation Marks: Dialogue/Placement	determine the correct placement of quotation marks with written dialogue.
Quotation Marks: Dialogue/Revise	revise a sentence for punctuation errors with quotation marks with written dialogue.
Quotation marks: Quote/Edit	edit to identify an error with quotation marks with a direct quote.
Quotation Marks: Quote/Placement	determine the correct placement of quotation marks with a direct quotation.
Quotation Marks: Special Words/Placement	determine the correct placement of quotation marks with special words.
Quotation Marks: Titles/Edit	edit to identify an error with quotation marks in titles of articles, songs, stories, or poems.
Underline: Titles	determine the correct way to underline the titles of plays, movies, and television programs.
Colon: List	determine which sentence correctly uses a colon in a list.
Comma: Avoid Overuse	determine which sentence correctly uses commas, avoiding overuse.
Comma: Introductory Element	determine which sentence correctly uses a comma with an introductory element.
Comma: Quote/Placement	determine the correct placement of a comma with a quote.
Comma: Quote/Use	determine which sentence correctly uses a comma with a quote.
Comma: Series	determine which sentence correctly uses commas in a series.
Quotation Marks: Chapter Titles	determine which sentence correctly uses quotation marks with chapter titles.
Semicolon: Independent Clause/Choose	choose a semicolon to punctuate a sentence with two independent clauses.
Semicolon: Independent Clause/Determine	determine which sentence correctly uses a semicolon with an independent clause.
Semicolon: Revise	revise a sentence for semicolon usage.
Comma: Appositive	determine which sentence correctly uses commas with an appositive.

Skill Name	Skill Description
Comma: Month/Year/Omit	determine which sentence correctly omits a comma between month and year.
Dash	identify the correct use of a dash for an abrupt break.
Ending Punctuation	determine which sentence uses ending punctuation correctly.
Quotation Marks: Chapter Titles	identify the sentence that correctly uses quotation marks with chapter titles.
Quotation Marks: Determine	determine which sentence correctly uses quotation marks.
Quotation Marks: Single Inside Double	determine the correct use of single quotation marks within double quotation marks.
Semicolon: Independent Clause/Determine	determine which sentence correctly uses a semicolon between two independent clauses.
Semicolon: Independent Clause/Use	use a semicolon between two independent clauses.
Semicolon: List	determine the correct use of a semicolon in a list.

Sentence Structure

Skill Name	Skill Description
Incorrect Word Order	determine which sentence uses incorrect word order.
Predicate: Choose	choose a predicate to complete a sentence.
Subject: Choose	choose a subject to complete a sentence.
Subject-verb: Determine	determine which sentence uses correct subject-verb agreement.
Compound Sentence: Construct	construct a compound sentence.
Paragraph: Parts/Identify	identify the parts of a paragraph.
Simple Sentence: Construct	construct a simple sentence.
Subject: Identify	identify the subject of a sentence.
Subject-verb: Edit	edit a sentence containing an error in subject-verb agreement.
Verb Tense: Edit	edit to identify a verb tense error.
Verb Tense: Revise	revise a sentence for verb tense errors.
Word Choice: Choose	choose the most effective word to complete the sentence.
Word Order: Edit	edit to identify incorrect word order in a sentence.
Clear Sentence: Determine	determine which sentence is clearly written.
Declarative: Identify	identify a declarative sentence.
Exclamatory: Identify	identify an exclamatory sentence.
Fragment: Convert	convert a fragment into a simple sentence.

Skill Name	Skill Description
Imperative: Identify	identify an imperative sentence.
Interrogative: Identify	identify an interrogative sentence.
Paragraph: Sentence Order	determine the most logical order of sentences in a paragraph.
Sentences: Combine/Determine	determine which sentences could logically be combined into one sentence.
Simple Sentence: Construct	combine words to create a simple sentence.
Subject-verb: Complete the Sentence	demonstrate knowledge of subject-verb agreement by completing a sentence.
Subject-verb: Indefinite Pronoun	demonstrate knowledge of subject-verb agreement with an indefinite pronoun by completing a sentence.
Subject-verb: Missing Subject	choose the correct subject to create subject-verb agreement.
Subject-verb: Missing Verb	choose the correct verb to ensure subject-verb agreement.
Word Choice: Effective	complete a sentence with the most effective word.
Word Choice: Revise	revise a sentence for word choice.
Complete Sentence: Identify	identify a complete sentence.
Double Negatives: Best Revision	choose the best revision of a sentence, avoiding double negatives.
Double Negatives: Determine	determine which sentence is written correctly, avoiding double negatives.
Fragment/Incomplete Sentence: Identify	identify an incomplete sentence.
Fragment: Convert	convert a fragment into a complete sentence.
Fragment: Edit	edit to identify a sentence fragment.
Paragraph: Parts/Identify	identify the different parts of a paragraph.
Paragraph: Purpose	determine the purpose of a paragraph.
Paragraph: Purpose of Parts	identify the purpose of each part of a paragraph.
Predicate: Identify	identify the predicate in a simple sentence.
Predicate: Missing	determine that a predicate is missing from a sentence.
Run-on: Edit	edit to avoid a run-on.
Sentence Clarity: Best Revision	choose the best revision of a sentence for clarity.
Simple Sentence: Determine	determine which sentence is simple.
Subject-verb: Intervening Phrase	demonstrate knowledge of subject-verb agreement with an intervening phrase by completing a sentence.
Subject-verb: Missing Subject	demonstrate knowledge of subject-verb agreement by completing a sentence with a subject.

Skill Name	Skill Description
Subject-verb: Missing Verb	demonstrate knowledge of subject-verb agreement by completing a sentence with verb.
Supporting Sentence: Choose	choose the best supporting sentence to follow a topic sentence.
Word Choice: Adjective/Choose	choose the most effective adjective to complete a sentence.
Word Choice: Adverb/Choose	choose the most effective adverb to complete a sentence.
Adjective Clause: Categorize	categorize a clause as an adjective clause, which modifies the subject.
Clear/Unclear Sentences: Identify	identify a clearly written sentence.
Combine Sentences: Determine	determine the correct combination of multiple sentences.
Commonly Confused Words: Use	use commonly confused words correctly in a sentence.
Complete Sentence: Determine	determine which sentence is complete.
Compound Sentence: Convert	convert a compound sentence into a simple sentence.
Concluding Sentence: Choose	choose the best sentence to conclude a paragraph.
Double Negative: Avoid	identify the sentence that does not contain a double negative.
Fragment/Run-on: Best Revision	choose the best revision of a sentence to eliminate a fragment or run-on.
Fragment/Run-on: Edit	edit to identify a fragment or run-on sentence.
Fragment: Revise	revise a fragment to make it a complete sentence.
Incomplete Sentence/Fragment: Determine	determine which sentence is incomplete.
Misplaced Modifier: Avoid	determine the correct use of a modifier, avoids misplacing.
Misplaced Modifier: Best Revision	choose the best revision of a sentence to correct a misplaced modifier.
Modifying Clause: Locate	locate a modifying clause in a sentence.
Paragraph: Coherence Error/Determine	determine which sentence in a paragraph causes a coherence error.
Paragraph: Indent/Edit	edit a paragraph for indenting.
Paragraph: Organization/Determine	determine how sentences are organized in a paragraph.
Paragraph: Purpose of Author's Tone	identify the purpose of the author's tone in a paragraph.

Skill Name	Skill Description
Paragraph: Purpose of Parts/Determine	determine the purpose of each type of sentence in a paragraph.
Paragraph: Supporting Sentence/Identify	identify a supporting sentence in a paragraph.
Prewriting Activity: Purpose/Identify	identify the purpose of prewriting activities.
Subject-verb: Compound Subject	demonstrate knowledge of subject-verb agreement with a compound subject by completing a sentence.
Subject-verb: Relative Clause	demonstrate knowledge of subject-verb agreement with a relative clause by completing a sentence.
Supporting Sentence: Choose	choose the best supporting sentence to complete a paragraph.
Clause: Modifies	identify what a clause modifies in a sentence.
Clause: Subordinate/Choose	choose a subordinate clause to complete a sentence.
Combine Sentence & Fragment	determine which sentence correctly combines a sentence and fragment into a complete sentence.
Combine Sentences: Choose Best	choose the best combination of sentences.
Combine Sentences: Clause	determine which sentence correctly uses a clause to combine sentences.
Combine Sentences: Compound Sentence	determine the best way to combine two simple sentences to create a compound sentence.
Combine Sentences: Introductory Phrase	determine which sentence correctly uses an introductory phrase to combine sentences.
Double Negatives: Avoid	identify a correctly written sentence, avoiding the use of double negatives.
Effectiveness: Word/Phrase/Choose	choose the most effective word or phrase to complete a sentence.
Misplaced Modifier	determine which sentence contains a misplaced modifier.
Modifier: Locate	locate a modifier in a sentence.
Paragraph: Coherence Error	identify the coherence error within a paragraph.
Paragraph: Concluding Sentence	determine which sentence best concludes a paragraph.
Paragraph: Indenting/Edit	edit a paragraph containing an indenting error.
Paragraph: Indenting/Purpose	determine the purpose of indenting a paragraph.
Paragraph: Purpose	determine the purpose of a narrative, autobiographical, biographical, persuasive, or informative paragraph.
Paragraph: Purpose of Parts	determine the purpose of the parts of a paragraph.
Paragraph: Sentence Order	determine the most logical order of sentences in a paragraph.

Skill Name	Skill Description
Paragraph: Supporting Sentence	determine the best supporting sentence for a paragraph.
Punctuation: Combining Sentences	determine correct punctuation while combining sentences.
Sentence: Avoid Fragment/Run-on	choose the sentence that is not a fragment or a run-on.
Sentence: Best Revision	choose the best revision of a sentence.
Sentence: Clear/Unclear	differentiate between clear and unclear sentences.
Sentence: Compound	determine which sentence is a compound sentence.
Sentence: Conciseness/Choose Revision	choose the best revision of a sentence for conciseness.
Sentence: Incomplete / Fragment	identify a sentence fragment.
Sentence: Run-on Revision	choose the best revision of a run-on sentence.
Sentence: Simple	determine which sentence is a simple sentence.
Subject: Compound/Locate	locate a compound subject in a sentence.
Subject: Missing/Determine	determine that a sentence is missing a subject.
Subject: Simple/Locate	locate the simple subject in a sentence.
Subject-verb: Create	choose a subject or verb to complete a sentence, creating subject-verb agreement.
Subject-verb: Determine	determine which sentence correctly uses subject-verb agreement.
Subject-verb: Edit	edit to identify a subject-verb agreement error in a sentence.
Subject-verb: Indefinite Pronoun	create subject-verb agreement in a sentence with an indefinite pronoun.
Subject-verb: Intervening Element	create subject-verb agreement in a sentence with an intervening element.
Transition Word: Choose	choose the best transition word to complete a sentence.
Clause: Subordinate/Locate	locate a subordinate clause in a sentence.
Combine Phrases: Simple/Compound Sent.	determine the best way to combine phrases to create a simple or compound sentence.
Combine Sentences	correctly combine sentences.
Combine Sentences: Appositive	determine which sentence correctly uses an appositive to combine sentences.
Combine Sentences: Clause	determine the best use of a clause to combine sentences.
Confused/Misused Words: Avoid	choose the best word to complete a sentence, avoiding commonly confused or misused words.
Double Negatives: Edit	edit to identify an error in use of double negatives.

Skill Name	Skill Description
Effectiveness: Word/Phrase/Choose	complete a sentence with the most effective word or phrase.
Paragraph: Author's Purpose	determine the author's purpose for writing a paragraph.
Paragraph: Coherence Error/Locate	locate the sentence in a paragraph which causes a coherence error.
Paragraph: Coherence/Edit	edit a paragraph to identify a coherence error.
Paragraph: Concluding Sentence	determine the best sentence to conclude a paragraph.
Paragraph: Indenting/Edit	edit to identify an indentation error in a paragraph.
Paragraph: Sentence Order	determine the most logical order of sentences in a paragraph.
Paragraph: Structure/Identify	identify the structure of a paragraph.
Paragraph: Supporting Sentence	identify a supporting sentence.
Parenthetical Expression	determine which sentence correctly uses a parenthetical expression.
Predicate: Compound/Locate	locate the compound predicate in a sentence.
Redundancies: Avoid	determine which sentence is written correctly, avoiding redundancy.
Sentence: Avoid Fragment/Run-on	determine which sentence is written correctly, avoiding fragments and run-ons.
Sentence: Best/Determine	determine which sentence is written the best.
Sentence: Choose Revision Run-on	choose the best revision of a sentence to eliminate a run-on.
Sentence: Clarity/Best Revision	show knowledge of sentence clarity by choosing the best revision of a sentence.
Sentence: Clause Type/Determine	determine what type of clause is used in a sentence.
Sentence: Clear	determine which descriptive words create a clearly written sentence.
Sentence: Complex/Create	create a complex sentence.
Sentence: Complex/Identify	identify a complex sentence.
Sentence: Compound/Create	create a compound sentence.
Sentence: Conciseness	determine which sentence is most concise.
Sentence: Diction	determine which sentence contains a diction error.
Sentence: Incomplete/Fragment	determine which sentence is a fragment.
Sentence: Independent Clause/Locate	locate an independent clause in a sentence.

Skill Name	Skill Description
Sentence: Intervening Phrase/Locate	locate an intervening phrase in a sentence.
Sentence: Modifier/Locate	locate a modifier in a sentence.
Sentence: Modifier/Use	determine which sentence correctly uses a modifier.
Sentence: Parallel Structure/Edit	locate the parallel structure error in a sentence.
Sentence: Parallel Structure/Revise	revise a sentence to create parallel structure.
Sentence: Persuasive	determine which sentence is most persuasive.
Sentence: Revise Fragment/Run-on	revise a sentence to correct the fragment or run-on sentence.
Sentence: Run-on	determine which sentence is a run-on sentence.
Sentence: Simple/Components	identify the components of a simple sentence.
Sentence: Subordinate Clause/Use	determine which sentence correctly uses a subordinate clause.

D. - Science PERFORMANCE Learning Objectives

Living Things

Skill Name	Skill Description
Associate parents with babies	associate animal parents with their babies.
Associate structures and functions	associate the basic structures of animals with their functions.
Group animals and plants	group animals or plants by their similarities and differences.
Identify insects	identify insects.
Infer what needs are not being met	infer what needs of a living thing are not being met and why.
Living and non-living things	identify living and non-living things.
Recognize basic needs	recognize the basic needs of living things.
Recognize basic plant parts	recognize basic plant parts.
Sequence growth stages	sequence basic stages of growth in the life cycle of plants and animals.
Animal uses of plants to survive	understand how animals use plants to survive.
Characteristics of fish, birds, mammals	associate fish, birds, or mammals with their basic characteristics.
ID animals that hatch from eggs	identify animals that hatch from eggs.
Infer responses/effects on body systems	infer basic responses of the respiratory or circulatory system.
Know plants make their own food	understand that plants make their own food.
Plant parts and their functions	understand the functions of plant parts.
Plant parts as food	associate plant parts with foods people eat.
Sequence insect metamorphosis	sequence insect metamorphosis.
Understand seed dispersal	apply an understanding of the methods of seed dispersal.
Understand traits come from parents	demonstrate an understanding that traits are passed from parents to offspring.
Associate body systems with functions	associate the digestive, respiratory, circulatory, skeletal, and nervous systems with their basic functions.
Associate insects to characteristics	associate insects with their characteristics.

Skill Name	Skill Description
Characteristics of reptiles, amphibians	associate reptiles or amphibians with their basic characteristics.
Environmental impact on plant growth	infer the effects of environmental factors on plant growth.
Identify internal skeleton or not	identify common living things that have internal skeletons and those that do not.
Plant offspring resemble their parents	demonstrate an understanding that plant offspring resemble their parents.
Understand the functions/uses of soil	understand the functions and uses of soil.
Components of the body systems	identify the basic components of the body systems.
Identify warm and cold-blooded animals	identify warm and cold-blooded animals.
Understand factors seed germination	understand the factors required for seed germination.
Understand insect metamorphosis	understand the stages of metamorphosis in insects.
Associate cell parts to their functions	associate basic cell parts (nucleus, cell membrane, cell wall, and cytoplasm) with their functions.
Label parts of the digestive system	label parts of the human digestive system.
Learned and inherited traits	differentiate between learned and inherited traits.
Life cycle of flowering plant	infer the impact of environmental changes on the life cycle of a flowering plant, including the role of pollination in the life cycle.
Photosynthesis and respiration	understand the relationship between the products and reactants of photosynthesis and respiration.
Recognize cell parts	recognize basic cell parts, including the nucleus, cell wall, cytoplasm, and cell membrane.
Understand photosynthesis reaction	demonstrate an understanding of the basic reaction that occurs during photosynthesis.
Apply understanding vascular system	demonstrate an understanding of plants that have a vascular system and those that do not.
Determine probability using monohybrid	determine the probability of a specific outcome using a monohybrid cross.
Differences of plant and animal cells	demonstrate an understanding of the differences between plant and animal cells.

Skill Name	Skill Description
Dominant and recessive traits	associate dominant and recessive traits to the genetic makeup of an organism.
Flower parts and functions	associate flower parts with their functions.
Functions of hormones	understand hormones.
Identify cell organelles	identify cell organelles including the nucleus, cell wall, cell membrane, cytoplasm, lysosomes, nuclear membrane, mitochondria, chloroplasts and/or vacuoles.
Interpret simple Punnet squares	interpret simple Punnet squares.
Plant structures and photosynthesis	understand how the structures of plants contribute to photosynthesis.
Recognize flower parts	recognize flower parts.
Recognize stimulus/response	recognize the stimulus and/or response in animal behavior scenarios.
Relationship between circ/resp systems	apply an understanding of the relationship between the circulatory and respiratory systems.
Sexual and asexual reproduction	demonstrate an understanding sexual and asexual reproduction and their cell division processes.
Skeletal and muscular systems	understand the structures and functions of the skeletal and muscular systems.
Specialized cells and their functions	associate specialized cells with their functions.
Understand characteristics of life	understand the characteristics of life, including those that occur at the cellular level.
Understand the levels of body systems	understand the levels of organizations in multicellular organisms and how they relate.
Associate cell structures to functions	associate cellular structures with their functions, including the nucleus, cell wall, cell membrane, cytoplasm, lysosomes, nuclear membrane, mitochondria, chloroplasts and/or vacuoles.
Differentiate the kingdoms	differentiate among the kingdoms of organisms using defining characteristics and classify organisms into each.
Digestive system	understand the structures and functions of the digestive system.
Embryonic development structures	understand the functions and locations of the placenta, amniotic fluid, umbilical cord, uterine wall, embryo, and fetus.
Equation and formulas of photosynthesis	know the chemical equation and formulas of photosynthesis.

Skill Name	Skill Description
Events in evolution of life and earth	sequence major events in the evolution of life on the earth.
How infectious diseases impact immune	understand how infectious diseases impact the human immune system.
Identify examples of genetic engineering	identify examples of genetic engineering.
Identify tropisms	identify examples of tropisms.
Know spores and plants	identify the function of spores and/or plants that produce them.
Life cycle of a non-flowering plant	demonstrate an understanding of the life cycle of a non-flowering plant.
Nervous system	understand the structures and functions of the human nervous system.
Understand cellular respiration	understand the fundamentals of cellular respiration.
Understand evolution	demonstrate an understanding of evolution and the evidence supporting it.
Understand Linnaean classification	demonstrate a understanding of the relationships among the levels of the Linnaean classification system and that this classification is based on evolutionary relationships and internal anatomy.
Understand natural selection	demonstrate an understanding of natural selection.
Understand structure/function of DNA	understand chromosomes, traits, genes, DNA, and the structure of DNA.
Viral, fungal, bacterial diseases	understand viral, fungal, and bacterial diseases.

Ecology

Skill Name	Skill Description
Associate living things with habitats	associate living things and their the basic body structures with habitats.
ID a basic habitat	identify a habitat from a picture or simple description.
Add organism to food chain	add the missing organism to a basic, three-link food chain.
Identify biodegradable materials	identify biodegradable materials (without terminology).
Identify pollution	recognize pollution.
Identify predators and prey	identify predators and prey.

Skill Name	Skill Description
Understand basic causes of pollution	understand the basic causes of pollution as they relate to humans.
Understand behavioral adaptations	demonstrate an understanding of behavioral adaptations in animals such as migration, hibernation, or camouflage.
Consumers, producers, decomposers	understand the roles of producers, consumers, and decomposers, and how energy flows among them.
Effects of changes in populations	infer the effects of a population change on other populations, given a food web.
Factors that cause extinction	apply an understanding of environmental factors that cause extinction.
Infer how fossils show change	apply an understanding of changing organisms and environments, given fossil evidence.
Organisms impact the environment	demonstrate an understanding of how organisms can positively or negatively impact their environment.
Associate a scenario to the three R's	associate a scenario with one of the three R's: Reducing, Reusing, or Recycling.
Competition in food webs	use a food web to identify competing organisms.
Components of an ecosystem	understand the components of an ecosystem and their relationships.
ID ivores in food webs	identify herbivores, carnivores, and omnivores in food webs.
Understand "survival of the fittest"	demonstrate an understanding of the concept of "survival of the fittest".
Understand air pollution	demonstrate an understanding of the basic causes and effects of air pollution.
Understand conservation	demonstrate an understanding of conservation.
Identify consumers and producers	recognize examples of consumers and producers.
Identify the niche of various organisms	identify the niche of various organisms.
Infer effects of pollution scenarios	infer the effects of water pollution in scenarios.
Understand adaptation	demonstrate an understanding of adaptation.
Understand carbon/oxygen cycle	understand the carbon dioxide/oxygen cycle and its components.
Apply limiting factors	determine the limiting factor in a scenario.
Energy flow in food webs	demonstrate an understanding of how food webs depict energy flow in ecosystems.
Impact of environmental change on cycles	infer the impact of environmental changes on material cycles.

Skill Name	Skill Description
Recognize symbiotic relationships	identify symbiosis in scenarios.
Understand energy pyramids	demonstrate a basic understanding of an energy pyramid.
Understand the nitrogen cycle	understand the nitrogen cycle and its components.
Interpret a basic population chart	read and interpret a basic population chart.
Point/non-point source pollution	identify point and non-point source pollution.
Recognize examples of symbiosis	recognize examples of mutualism, parasitism, and commensalism.
Understand causes & effects of acid rain	understand the causes and effects of acid rain.
Understand succession	understand succession.
Understand types of water pollution	understand types of water pollution.

Science Processes

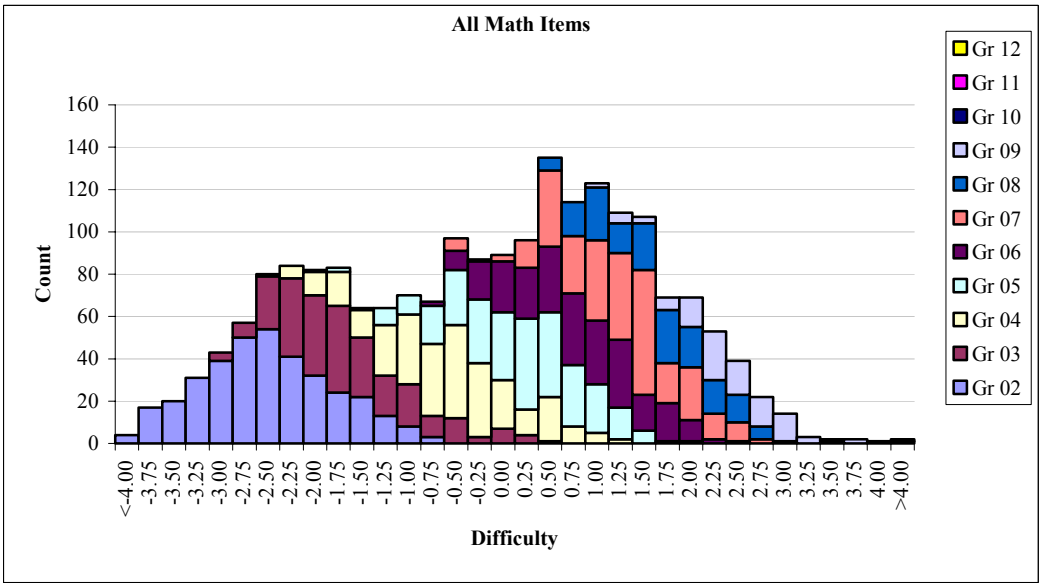
Skill Name	Skill Description
Associate a model to what it represents	associate a model or drawing with the object it represents.
Associate a tool to its use	associate basic tools with their use.
ID the senses and sense organs	identify the senses and the sense organs associated with them.
Read a simple circle graph	read a simple circle graph that has no numerical values.
Read a simple pictograph	interpret a simple pictograph.
Associate an experiment to its purpose	associate a simple experiment with its purpose.
Identify rule used to sort/classify	identify the rule used to sort or classify objects.
Make predictions by identifying patterns	make predictions by identifying patterns in data.
Read a simple chart or table	read a simple chart or table in order to make comparisons.
Associate chart or table to bar graph	associate a simple chart or table with a bar graph.
Associate evidence with conclusion	associate data or evidence (in graphs, charts, or tables) with the best conclusion or prediction.
Choose units for data collection	choose appropriate units for data collection (volume, area, etc.).

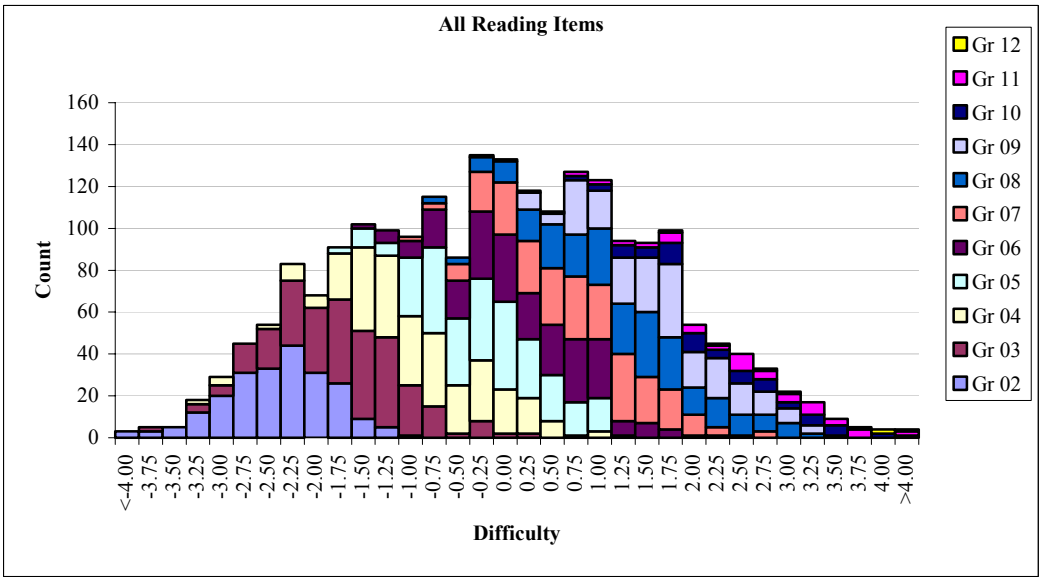
Skill Name	Skill Description
Evaluate reasonableness of measurement	evaluate the reasonableness of length or weight measurements/units.
Form reasonable explanations	identify the most reasonable explanation for data given in a simple chart or table.
Identify cause or effect	identify cause and effect relationships in scenarios.
Identify testable questions	identify questions that are most appropriately answered by an experiment and those that are not.
Infer relative time of events	infer the relative time of multiple events, using observations or written descriptions.
Measure odd shaped object length	measure the length of an oddly shaped object, not lined up to zero.
Use basic operational definitions	use basic operational definitions to classify things.
Convert chart or table to line graph	convert a chart or table to a line graph.
Demonstrate understanding of variables	demonstrate an understanding of variables (without the term).
Determine the fairest test or experiment	determine which test or experiment is the fairest.
Discern relevant/irrelevant data	determine if data is relevant to an experiment.
Understand how to use ranges	apply an understanding of ranges given on bar graphs.
Differentiate observations/inferences	differentiate observations from inferences (without using the term inference).
Relative speed on motion graphs	use a line graph involving motion to determine relative speed.
Understand the scientific method	understand the scientific method.
Use averages to predict future outcomes	use a data table that includes averages to predict future trial outcomes.
Determine cause/effect in data	determine the cause or effect when provided with experimental data.
Determine the best hypothesis to use	determine the best hypothesis to use.
Evaluate models	evaluate models.
Interpret concept maps, diagrams, models	read and interpret concept maps, diagrams, models, or blueprints.
Interpret results	interpret results to determine if the results support a given hypothesis.

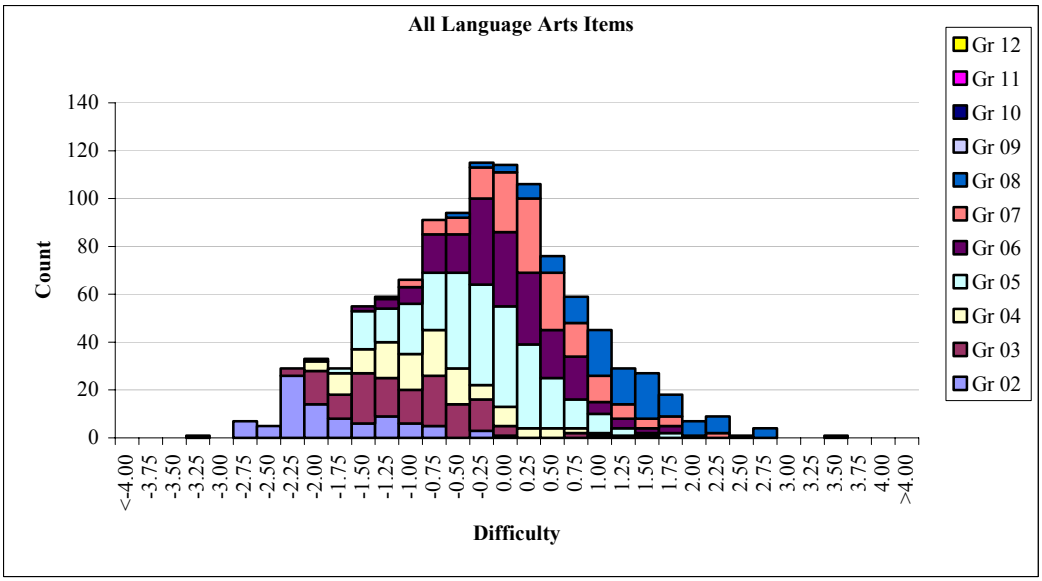
Skill Name	Skill Description
Match data to correct graph	match data to correct graphical representations.
Perform metric conversions	perform conversions of metric units.
Recognize dependent/independent	recognize dependent (responding) and/or independent (manipulated) variables.
Use data to make inferences	use data from charts and tables to make inferences.
Use dichotomous keys	use a dichotomous key.
Conclude from experiment data	draw conclusions from experimental data.
Conclusions and evidence	evaluate evidence to determine if it supports or refutes a conclusion.
Determine variables to be controlled	determine the variables that must be controlled in experiments.
Evaluate experimental designs	evaluate or make suggestions to improve an experimental design.
Extrapolate from multiple line graph	extrapolate data from a multiple line graph.
Identify controls	identify controls in experimental scenarios.
Identify linear relationships in data	identify linear relationships in data.
Interpret multiple line graph	interpret a multiple line graph.
Make generalizations from data	use data from experiments to make generalizations.
Predict from line graph	make predictions using data from a line graph.
Recognize sources of error	recognize sources of error or associate unusual data with a source of error.
Recognize valid and reliable experiments	recognize experimental procedures that are the most valid and reliable.

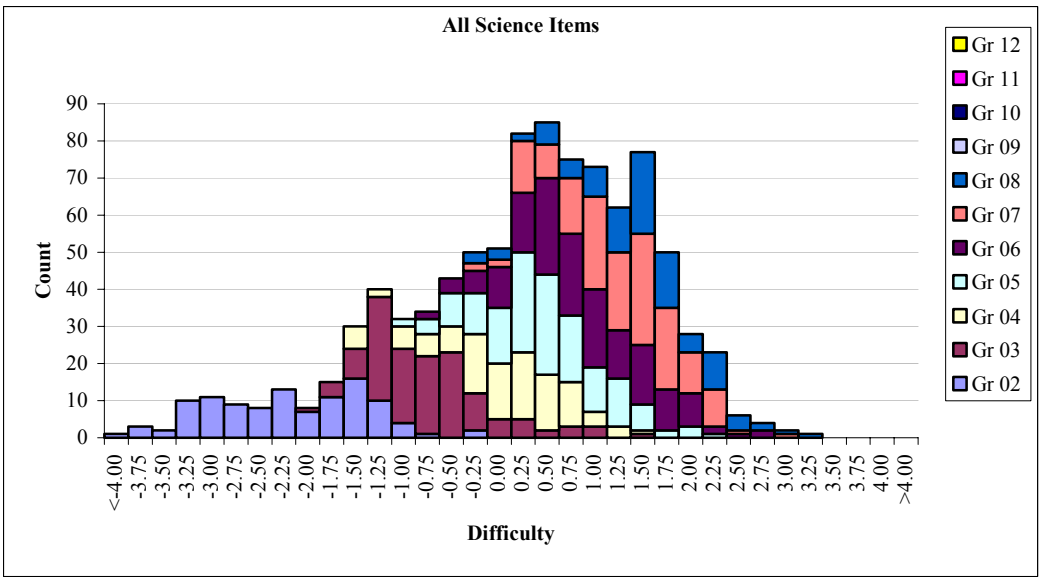
E. - Item Difficulty Distributions

The following graphs are the distributions of the four subject area active items pools for spring 2004. The difficulty of the items is on the logit scale.






All Language Arts Items
Count
Difficulty
Gr 12
Gr 11
Gr 10
Gr 09
Gr 08
Gr 07
Gr 06
Gr 05
Gr 04
Gr 03
Gr 02


All Science Items
Count
Difficulty
Gr 12
Gr 11
Gr 10
Gr 09
Gr 08
Gr 07
Gr 06
Gr 05
Gr 04
Gr 03
Gr 02

F. - Norm Data Summary

Table 1: Fall 2002 Goal & Actual Sample – Norm Group Configuration

		Math	Reading
	Goal	Sample	Sample
Region 1	**20.9%**	21.7%	23.1%
Region 2	**23.5%**	29.6%	29.6%
Region 3	**38.7%**	36.5%	34.8%
Region 4	**16.9%**	12.2%	12.4%
Male	**49.0%**	49.0%	49.0%
Female	**51.0%**	51.0%	51.0%
African American	**11.8%**	11.8%	11.8%
American Indian or Alaskan Native	**0.9%**	0.9%	0.9%
Asian or Pacific Islander	**3.6%**	3.6%	3.6%
Caucasian	**71.9%**	71.9%	71.9%
Hispanic	**11.8%**	11.8%	11.8%

Table 2: Spring 2003 Goal & Actual Sample – Norm Group Configuration

		Math	Reading
	Goal	Sample	Sample
Region 1	**20.9%**	19.2%	18.7%
Region 2	**23.5%**	17.2%	17.9%
Region 3	**38.7%**	42.7%	42.4%
Region 4	**16.9%**	20.8%	20.9%
Male	**49.0%**	49.0%	49.0%
Female	**51.0%**	51.0%	51.0%
African American	**11.8%**	11.8%	11.8%
American Indian or Alaskan Native	**0.9%**	0.9%	0.9%
Asian or Pacific Islander	**3.6%**	3.6%	3.6%
Caucasian	**71.9%**	71.9%	71.9%
Hispanic	**11.8%**	11.8%	11.8%

Table 3: Fall 2002 Math – Composition of Norm Group

		African American	American Indian or Alaskan Native	Asian or Pacific Islander	Caucasian	Hispanic	Total	*% of Total*
Grade 2	**Female**	254	19	77	1,547	254	2,152	*51%*
	Male	244	19	74	1,487	244	2,068	*49%*
	Total	498	38	152	3,034	498	4,220	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 3	**Female**	700	53	213	4,264	700	5,930	*51%*
	Male	672	51	205	4,096	672	5,697	*49%*
	Total	1,372	105	419	8,360	1,372	11,627	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 4	**Female**	601	46	183	3,664	601	5,096	*51%*
	Male	578	44	176	3,520	578	4,896	*49%*
	Total	1,179	90	360	7,184	1,179	9,992	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 5	**Female**	398	30	121	2,426	398	3,374	*51%*
	Male	383	29	117	2,331	383	3,242	*49%*
	Total	781	60	238	4,757	781	6,616	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 5	**Female**	752	57	229	4,583	752	6,374	*51%*
	Male	723	55	220	4,404	723	6,125	*49%*
	Total	1,475	112	450	8,987	1,475	12,499	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 7	**Female**	559	43	170	3,404	559	4,735	*51%*
	Male	537	41	164	3,271	537	4,549	*49%*
	Total	1,096	84	334	6,675	1,096	9,284	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 8	**Female**	519	40	158	3,164	519	4,400	*51%*
	Male	499	38	152	3,040	499	4,228	*49%*
	Total	1,018	78	311	6,204	1,018	8,628	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
High School	**Female**	629	48	192	3,835	629	5,334	*51%*
	Male	605	46	184	3,684	605	5,124	*49%*
	Total	1,234	94	376	7,519	1,234	10,458	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
						Grand Total	**73,324**	

Table 4: Fall 2002 Reading – Composition of Norm Group

		African American	American Indian or Alaskan Native	Asian or Pacific Islander	Caucasian	Hispanic	Total	*% of Total*
Grade 2	**Female**	181	14	55	1,106	181	1,538	*51%*
	Male	174	13	53	1,062	174	1,477	*49%*
	Total	356	27	109	2,168	356	3,015	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 3	**Female**	657	50	200	4,000	657	5,564	*51%*
	Male	631	48	192	3,843	631	5,345	*49%*
	Total	1,287	98	393	7,844	1,287	10,909	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 4	**Female**	581	44	177	3,543	581	4,928	*51%*
	Male	559	43	170	3,404	559	4,734	*49%*
	Total	1,140	87	348	6,947	1,140	9,662	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 5	**Female**	576	44	176	3,507	576	4,878	*51%*
	Male	553	42	169	3,369	553	4,686	*49%*
	Total	1,129	86	344	6,877	1,129	9,564	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 5	**Female**	683	52	208	4,160	683	5,786	*51%*
	Male	656	50	200	3,997	656	5,560	*49%*
	Total	1,339	102	408	8,158	1,339	11,346	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 7	**Female**	584	45	178	3,558	584	4,949	*51%*
	Male	561	43	171	3,419	561	4,755	*49%*
	Total	1,145	87	349	6,977	1,145	9,704	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 8	**Female**	464	35	142	2,828	464	3,933	*51%*
	Male	446	34	136	2,717	446	3,779	*49%*
	Total	910	69	278	5,545	910	7,712	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
High School	**Female**	959	73	293	5,846	959	8,131	*51%*
	Male	922	70	281	5,617	922	7,812	*49%*
	Total	1,881	143	574	11,463	1,881	15,943	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
						Grand Total	**77,855**	

Table 5: Summary Proficiency Data for Norm Group – Fall 2002 Math

	N	Mean	Std. Dev.	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Min	Max
Grade 2	4,220	-2.326	0.689	0.298	0.038	-0.109	0.075	-4.035	0.541
Grade 3	11,627	-1.535	0.721	-0.265	0.023	0.101	0.045	-4.047	1.788
Grade 4	9,992	-0.929	0.761	-0.512	0.025	0.619	0.049	-3.932	1.966
Grade 5	6,616	-0.457	0.794	-0.452	0.030	1.063	0.060	-3.932	2.996
Grade 6	12,499	-0.037	0.836	-0.444	0.022	0.925	0.044	-3.721	3.371
Grade 7	9,284	0.354	0.968	-0.377	0.025	0.659	0.051	-3.688	3.537
Grade 8	8,628	0.687	1.045	-0.380	0.026	0.477	0.053	-3.614	3.880
High School	10,458	1.111	1.212	-0.579	0.024	0.181	0.048	-4.026	4.374
Total	73,324	-0.267	1.349	0.067	0.009	-0.318	0.018	-4.047	4.374

Table 6: Summary Proficiency Data for Norm Group – Fall 2002 Reading

	N	Mean	Std. Dev.	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Min	Max
Grade 2	3,015	-2.188	0.991	0.642	0.044	0.013	0.089	-4.280	1.784
Grade 3	10,909	-1.346	1.204	0.218	0.023	-0.505	0.047	-4.173	3.022
Grade 4	9,662	-0.665	1.340	-0.036	0.025	-0.579	0.050	-4.537	3.334
Grade 5	9,564	0.011	1.381	-0.281	0.025	-0.362	0.050	-3.842	3.727
Grade 6	11,346	0.608	1.393	-0.503	0.023	-0.080	0.046	-3.818	3.748
Grade 7	9,704	0.910	1.405	-0.672	0.025	0.297	0.050	-3.802	4.264
Grade 8	7,712	1.150	1.408	-0.831	0.028	0.522	0.056	-3.758	4.075
High School	15,943	1.505	1.393	-1.030	0.019	0.910	0.039	-3.749	4.088
Total	77,855	0.269	1.731	-0.260	0.009	-0.788	0.018	-4.537	4.264

Table 7: Spring 2003 Math – Composition of Norm Group

		African American	American Indian or Alaskan Native	Asian or Pacific Islander	Caucasian	Hispanic	Total	*% of Total*
Grade 2	**Female**	360	27	110	2,193	360	3,050	*51.0%*
	Male	346	26	106	2,107	346	2,931	*49.0%*
	Total	706	54	215	4,300	706	5,981	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 3	**Female**	454	35	138	2,764	454	3,844	*51.0%*
	Male	436	33	133	2,655	436	3,693	*49.0%*
	Total	889	68	271	5,419	889	7,537	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 4	**Female**	698	53	213	4,255	698	5,918	*51.0%*
	Male	671	51	205	4,088	671	5,686	*49.0%*
	Total	1,369	104	418	8,343	1,369	11,604	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 5	**Female**	510	39	156	3,106	510	4,320	*51.0%*
	Male	490	37	149	2,984	490	4,150	*49.0%*
	Total	999	76	305	6,090	999	8,470	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 5	**Female**	652	50	199	3,974	652	5,527	*51.0%*
	Male	627	48	191	3,818	627	5,311	*49.0%*
	Total	1,279	98	390	7,793	1,279	10,838	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 7	**Female**	743	57	227	4,525	743	6,293	*51.0%*
	Male	713	54	218	4,347	713	6,046	*49.0%*
	Total	1,456	111	444	8,872	1,456	12,339	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
Grade 8	**Female**	369	28	112	2,246	369	3,124	*51.0%*
	Male	354	27	108	2,158	354	3,002	*49.0%*
	Total	723	55	221	4,405	723	6,126	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
High School	**Female**	343	26	105	2,087	343	2,903	*51.0%*
	Male	329	25	100	2,005	329	2,789	*49.0%*
	Total	672	51	205	4,093	672	5,692	
	% of Total	*11.8%*	*0.9%*	*3.6%*	*71.9%*	*11.8%*		
						Grand Total	**68,587**	

Table 8: Spring 2003 Reading – Composition of Norm Group

		African American	American Indian or Alaskan Native	Asian or Pacific Islander	Caucasian	Hispanic	Total	% of Total
Grade 2	**Female**	391	30	119	2,379	391	3,309	*51.0%*
	Male	375	29	114	2,286	375	3,180	*49.0%*
	Total	766	58	234	4,666	766	6,489	
	% of Total	*11.80%*	*0.90%*	*3.60%*	*71.90%*	*11.80%*		
Grade 3	**Female**	459	35	140	2,794	459	3,886	*51.0%*
	Male	441	34	134	2,685	441	3,734	*49.0%*
	Total	899	69	274	5,479	899	7,620	
	% of Total	*11.80%*	*0.90%*	*3.60%*	*71.90%*	*11.80%*		
Grade 4	**Female**	756	58	231	4,605	756	6,405	*51.0%*
	Male	726	55	222	4,425	726	6,154	*49.0%*
	Total	1,482	113	452	9,030	1,482	12,559	
	% of Total	*11.80%*	*0.90%*	*3.60%*	*71.90%*	*11.80%*		
Grade 5	**Female**	529	40	161	3,220	529	4,479	*51.0%*
	Male	508	39	155	3,094	508	4,303	*49.0%*
	Total	1,036	79	316	6,314	1,036	8,782	
	% of Total	*11.80%*	*0.90%*	*3.60%*	*71.90%*	*11.80%*		
Grade 5	**Female**	648	49	198	3,949	648	5,493	*51.0%*
	Male	623	47	190	3,794	623	5,277	*49.0%*
	Total	1,271	97	388	7,744	1,271	10,770	
	% of Total	*11.80%*	*0.90%*	*3.60%*	*71.90%*	*11.80%*		
Grade 7	**Female**	781	60	238	4,761	781	6,622	*51.0%*
	Male	751	57	229	4,574	751	6,362	*49.0%*
	Total	1,532	117	467	9,335	1,532	12,984	
	% of Total	*11.80%*	*0.90%*	*3.60%*	*71.90%*	*11.80%*		
Grade 8	**Female**	438	33	133	2,666	438	3,708	*51.0%*
	Male	420	32	128	2,562	420	3,563	*49.0%*
	Total	858	65	262	5,228	858	7,271	
	% of Total	*11.80%*	*0.90%*	*3.60%*	*71.90%*	*11.80%*		
High School	**Female**	424	32	129	2,585	424	3,596	*51.0%*
	Male	408	31	124	2,484	408	3,455	*49.0%*
	Total	832	63	254	5,069	832	7,050	
	% of Total	*11.80%*	*0.90%*	*3.60%*	*71.90%*	*11.80%*		
						Grand Total	**73,525**	

Table 9: Summary Proficiency Data for Norm Group – Spring 2003 Math

	N	Mean	Std. Dev.	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Min	Max
Grade 2	5,981	-1.711	0.762	-0.381	0.032	0.125	0.063	-5.283	0.795
Grade 3	7,537	-1.047	0.795	-0.509	0.028	0.770	0.056	-4.596	3.106
Grade 4	11,604	-0.437	0.819	-0.511	0.023	1.183	0.045	-4.940	4.179
Grade 5	8,470	-0.012	0.900	-0.439	0.027	0.877	0.053	-4.257	4.047
Grade 6	10,838	0.485	1.006	-0.367	0.024	0.573	0.047	-4.140	4.684
Grade 7	12,339	0.797	1.074	-0.219	0.022	0.614	0.044	-6.512	5.124
Grade 8	6,126	1.024	1.162	-0.287	0.031	0.582	0.063	-3.789	6.321
High School	5,692	1.241	1.323	-0.405	0.032	0.489	0.065	-4.144	6.205
Total	68,587	0.075	1.320	0.021	0.009	-0.013	0.019	-6.512	6.321

Table 10: Summary Proficiency Data for Norm Group – Spring 2003 Reading

	N	Mean	Std. Dev.	Skewness	Std. Err. of Skewness	Kurtosis	Std. Err. of Kurtosis	Min	Max
Grade 2	6,489	-1.960	1.624	-0.415	0.030	-0.179	0.061	-5.655	3.542
Grade 3	7,620	-0.965	1.624	-0.524	0.028	0.354	0.056	-5.655	4.348
Grade 4	12,559	-0.067	1.590	-0.711	0.022	0.817	0.044	-5.655	4.573
Grade 5	8,782	0.449	1.603	-0.839	0.026	1.303	0.052	-5.655	5.593
Grade 6	10,770	1.051	1.592	-0.800	0.024	1.360	0.047	-5.655	6.368
Grade 7	12,984	1.483	1.576	-0.816	0.021	1.350	0.043	-5.655	5.835
Grade 8	7,271	1.710	1.630	-0.932	0.029	1.645	0.057	-5.655	6.544
High School	7,050	2.107	1.753	-1.202	0.029	2.284	0.058	-5.655	6.527
Total	73,525	0.556	2.007	-0.538	0.009	0.207	0.018	-5.655	6.544

NPR and Scale Score Conversion Tables

Math Fall 2002 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
1	1784	1869	1938	2026	2090	2107	2150	2151
2	1796	1896	1978	2064	2137	2157	2203	2207
3	1809	1918	2009	2098	2165	2204	2242	2246
4	1818	1937	2033	2127	2188	2235	2269	2275
5	1827	1953	2053	2146	2212	2259	2293	2305
6	1837	1969	2072	2162	2233	2277	2318	2327
7	1844	1981	2088	2178	2249	2293	2337	2348
8	1851	1989	2104	2189	2264	2310	2355	2368
9	1858	1999	2116	2204	2275	2322	2373	2387
10	1865	2010	2126	2220	2289	2335	2388	2404
11	1870	2020	2136	2233	2301	2348	2399	2415
12	1875	2027	2146	2244	2311	2360	2409	2433
13	1881	2035	2154	2250	2321	2371	2420	2446
14	1885	2043	2163	2257	2329	2381	2431	2460
15	1891	2049	2171	2264	2337	2392	2440	2473
16	1897	2056	2179	2271	2344	2399	2451	2485
17	1903	2062	2187	2277	2352	2409	2460	2496
18	1909	2069	2193	2286	2360	2417	2468	2509
19	1915	2074	2200	2293	2368	2423	2475	2519
20	1919	2080	2207	2299	2375	2431	2482	2530
21	1923	2084	2213	2303	2382	2438	2489	2540
22	1927	2089	2218	2309	2389	2444	2495	2551
23	1932	2094	2224	2314	2395	2452	2503	2561
24	1937	2100	2228	2319	2401	2458	2510	2572
25	1941	2106	2234	2325	2407	2465	2515	2582
26	1945	2111	2239	2329	2412	2470	2521	2591
27	1949	2116	2244	2333	2416	2475	2528	2600
28	1952	2120	2248	2336	2421	2480	2535	2608
29	1956	2125	2252	2342	2426	2486	2541	2615
30	1960	2129	2255	2348	2430	2492	2548	2623
31	1963	2133	2259	2352	2435	2497	2553	2632
32	1966	2138	2262	2356	2439	2501	2559	2642
33	1969	2142	2267	2360	2443	2506	2564	2650

Math Fall 2002 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
34	1973	2145	2271	2365	2448	2511	2570	2659
35	1977	2149	2274	2369	2453	2516	2576	2666
36	1980	2153	2278	2373	2456	2520	2581	2672
37	1983	2157	2282	2377	2460	2526	2588	2679
38	1986	2160	2287	2381	2464	2531	2593	2687
39	1990	2164	2291	2385	2468	2537	2599	2693
40	1994	2168	2295	2390	2472	2541	2604	2699
41	1998	2171	2299	2394	2475	2547	2609	2704
42	2001	2175	2303	2398	2479	2551	2614	2709
43	2005	2179	2306	2401	2482	2556	2620	2715
44	2008	2183	2309	2405	2486	2560	2625	2722
45	2011	2187	2312	2408	2489	2565	2629	2728
46	2014	2191	2316	2412	2492	2569	2634	2735
47	2018	2195	2320	2414	2496	2572	2639	2742
48	2023	2199	2323	2417	2499	2577	2644	2748
49	2027	2202	2326	2421	2503	2582	2649	2755
50	2030	2206	2330	2424	2507	2585	2654	2760
51	2033	2209	2332	2427	2511	2590	2658	2766
52	2037	2213	2336	2429	2515	2594	2663	2772
53	2041	2217	2339	2433	2519	2599	2668	2778
54	2044	2221	2343	2436	2522	2603	2673	2784
55	2048	2225	2347	2439	2527	2606	2677	2789
56	2052	2228	2350	2443	2531	2611	2682	2793
57	2056	2231	2354	2447	2535	2615	2687	2798
58	2060	2234	2357	2451	2539	2620	2692	2804
59	2065	2238	2361	2454	2542	2625	2697	2809
60	2068	2241	2365	2458	2546	2630	2702	2815
61	2072	2245	2368	2461	2550	2633	2708	2820
62	2075	2249	2372	2465	2552	2637	2713	2826
63	2078	2252	2375	2468	2556	2642	2717	2831
64	2083	2254	2379	2472	2560	2648	2723	2836
65	2088	2258	2383	2475	2564	2652	2729	2842
66	2092	2261	2387	2478	2566	2656	2734	2848
67	2096	2264	2391	2481	2570	2661	2740	2854
68	2100	2268	2395	2485	2574	2667	2745	2860

Math Fall 2002 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
69	2105	2272	2398	2489	2578	2671	2751	2867
70	2110	2275	2403	2492	2582	2676	2755	2872
71	2115	2280	2406	2495	2586	2682	2760	2878
72	2120	2286	2411	2499	2590	2687	2765	2883
73	2124	2290	2414	2503	2593	2693	2772	2889
74	2128	2293	2418	2508	2598	2698	2779	2897
75	2133	2297	2422	2513	2602	2703	2784	2902
76	2138	2301	2425	2517	2607	2709	2789	2908
77	2142	2305	2428	2521	2612	2715	2795	2916
78	2147	2309	2432	2527	2617	2722	2802	2922
79	2154	2313	2436	2533	2622	2728	2807	2929
80	2159	2317	2441	2538	2627	2734	2813	2936
81	2164	2321	2446	2543	2632	2742	2820	2942
82	2168	2326	2452	2550	2638	2749	2827	2947
83	2174	2330	2456	2555	2644	2755	2837	2956
84	2180	2336	2461	2562	2649	2762	2845	2964
85	2189	2343	2467	2567	2657	2769	2855	2972
86	2197	2349	2474	2573	2664	2776	2864	2981
87	2203	2355	2480	2581	2671	2784	2873	2992
88	2210	2363	2484	2588	2678	2792	2882	3000
89	2218	2371	2491	2596	2686	2801	2893	3010
90	2226	2378	2497	2602	2694	2808	2903	3019
91	2237	2385	2505	2611	2705	2820	2915	3031
92	2245	2393	2515	2620	2718	2833	2930	3043
93	2255	2402	2527	2632	2730	2848	2944	3057
94	2268	2414	2539	2647	2743	2866	2959	3069
95	2286	2424	2551	2657	2762	2886	2981	3087
96	2304	2440	2567	2677	2784	2908	3002	3110
97	2325	2464	2592	2707	2813	2947	3033	3136
98	2374	2501	2629	2757	2863	3007	3089	3174
99	>2374	>2501	>2629	>2757	>2863	>3007	>3089	>3174

Math Spring 2003 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
1	1811	1918	2020	2065	2129	2186	2177	2133
2	1838	1956	2064	2111	2182	2235	2221	2203
3	1866	1979	2097	2148	2216	2268	2264	2244
4	1883	2009	2127	2178	2243	2294	2299	2276
5	1900	2026	2148	2200	2270	2318	2324	2301
6	1914	2041	2164	2219	2288	2337	2354	2329
7	1930	2055	2179	2240	2305	2354	2376	2355
8	1944	2068	2195	2254	2321	2370	2392	2377
9	1953	2081	2207	2267	2338	2385	2409	2397
10	1962	2093	2219	2280	2351	2399	2421	2418
11	1973	2101	2229	2293	2364	2411	2434	2431
12	1983	2109	2238	2306	2376	2423	2446	2449
13	1991	2119	2248	2317	2388	2436	2458	2463
14	2000	2128	2255	2325	2397	2446	2471	2474
15	2007	2135	2263	2334	2407	2453	2479	2489
16	2012	2143	2271	2342	2415	2462	2491	2501
17	2020	2151	2278	2350	2423	2469	2501	2516
18	2026	2158	2284	2357	2431	2478	2510	2527
19	2032	2164	2290	2365	2438	2487	2519	2536
20	2039	2171	2295	2372	2446	2495	2528	2547
21	2046	2178	2302	2378	2454	2503	2536	2557
22	2051	2184	2308	2383	2459	2509	2546	2569
23	2055	2189	2314	2389	2467	2516	2553	2577
24	2059	2195	2320	2395	2474	2524	2562	2587
25	2064	2200	2325	2401	2480	2530	2571	2595
26	2070	2205	2329	2406	2487	2538	2579	2605
27	2075	2213	2334	2411	2492	2544	2586	2614
28	2080	2219	2339	2416	2499	2550	2592	2622
29	2084	2223	2344	2421	2504	2556	2599	2634
30	2089	2227	2349	2427	2511	2563	2606	2641
31	2095	2233	2355	2431	2516	2570	2613	2649
32	2100	2238	2359	2437	2521	2576	2619	2656
33	2104	2243	2363	2441	2527	2582	2625	2664
34	2108	2247	2368	2446	2532	2589	2632	2674

Math Spring 2003 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
35	2113	2252	2372	2450	2538	2594	2637	2681
36	2117	2256	2375	2456	2543	2599	2643	2688
37	2121	2260	2379	2460	2547	2604	2649	2694
38	2126	2264	2383	2464	2553	2610	2657	2701
39	2131	2268	2387	2468	2558	2616	2663	2709
40	2135	2272	2390	2472	2563	2621	2670	2714
41	2140	2276	2394	2476	2568	2626	2675	2720
42	2143	2280	2398	2480	2572	2631	2681	2725
43	2147	2284	2401	2484	2577	2636	2687	2733
44	2152	2287	2405	2489	2582	2642	2692	2740
45	2155	2292	2408	2492	2586	2646	2697	2747
46	2158	2296	2412	2496	2591	2651	2702	2752
47	2162	2299	2416	2500	2597	2656	2708	2759
48	2166	2303	2419	2504	2603	2661	2714	2766
49	2171	2306	2423	2508	2608	2666	2719	2772
50	2174	2310	2426	2511	2612	2671	2725	2777
51	2178	2314	2429	2515	2618	2676	2730	2784
52	2181	2318	2433	2519	2624	2681	2735	2789
53	2185	2322	2437	2523	2629	2686	2740	2795
54	2189	2325	2441	2527	2634	2692	2745	2802
55	2192	2328	2445	2531	2638	2696	2750	2808
56	2196	2332	2449	2534	2644	2702	2754	2813
57	2199	2335	2452	2538	2649	2706	2760	2818
58	2203	2339	2455	2543	2654	2712	2765	2827
59	2205	2343	2458	2547	2658	2717	2771	2833
60	2210	2347	2462	2551	2663	2722	2778	2838
61	2213	2351	2467	2556	2668	2727	2784	2844
62	2217	2355	2470	2560	2673	2732	2789	2850
63	2220	2358	2473	2564	2678	2738	2794	2857
64	2225	2361	2476	2568	2683	2743	2799	2863
65	2229	2365	2480	2572	2688	2749	2806	2867
66	2233	2369	2483	2577	2692	2755	2812	2874
67	2237	2372	2487	2582	2697	2760	2818	2879
68	2241	2376	2491	2586	2703	2766	2824	2885
69	2244	2381	2496	2591	2708	2772	2831	2891

Math Spring 2003 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
70	2248	2384	2500	2595	2713	2778	2836	2899
71	2252	2388	2504	2599	2718	2783	2843	2905
72	2255	2392	2509	2604	2723	2789	2848	2912
73	2260	2395	2513	2609	2728	2795	2855	2919
74	2264	2399	2518	2615	2734	2802	2860	2926
75	2268	2403	2523	2621	2740	2808	2866	2933
76	2273	2407	2527	2626	2746	2815	2872	2940
77	2278	2411	2532	2632	2752	2822	2878	2947
78	2282	2415	2537	2636	2757	2828	2885	2954
79	2287	2420	2543	2641	2762	2835	2891	2961
80	2291	2425	2548	2648	2769	2842	2899	2970
81	2296	2429	2554	2654	2775	2848	2906	2977
82	2301	2434	2559	2661	2782	2855	2915	2986
83	2307	2439	2565	2667	2788	2863	2923	2997
84	2311	2444	2571	2674	2797	2872	2932	3005
85	2316	2450	2576	2680	2805	2881	2941	3014
86	2322	2455	2581	2688	2812	2891	2949	3026
87	2328	2462	2588	2695	2820	2899	2957	3036
88	2335	2468	2595	2704	2829	2909	2967	3049
89	2343	2474	2604	2714	2838	2921	2979	3061
90	2352	2480	2614	2725	2848	2931	2990	3075
91	2358	2489	2623	2736	2859	2944	3003	3093
92	2367	2498	2635	2746	2870	2959	3021	3104
93	2376	2506	2648	2756	2884	2976	3039	3120
94	2388	2517	2663	2769	2899	2993	3057	3140
95	2398	2532	2678	2784	2915	3014	3081	3163
96	2413	2553	2697	2802	2938	3047	3112	3206
97	2437	2572	2724	2830	2972	3086	3157	3244
98	2475	2619	2769	2881	3025	3160	3225	3308
99	>2475	>2619	>2769	>2881	>3025	>3160	>3225	>3308

Reading Fall 2002 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
1	1763	1802	1841	1889	1967	1970	1987	2051
2	1775	1821	1869	1932	2021	2041	2065	2122
3	1784	1837	1891	1969	2064	2097	2118	2181
4	1792	1852	1911	2002	2095	2143	2166	2232
5	1797	1864	1932	2030	2130	2189	2209	2266
6	1807	1876	1952	2055	2162	2218	2242	2305
7	1812	1887	1969	2079	2187	2245	2276	2337
8	1819	1900	1985	2103	2214	2273	2310	2370
9	1825	1910	1999	2123	2238	2293	2329	2396
10	1830	1922	2016	2141	2255	2315	2353	2428
11	1835	1934	2031	2158	2273	2334	2378	2452
12	1841	1945	2042	2176	2288	2353	2398	2478
13	1848	1955	2054	2191	2306	2371	2419	2500
14	1853	1964	2067	2207	2319	2385	2438	2522
15	1858	1972	2078	2218	2332	2402	2459	2541
16	1862	1980	2090	2230	2344	2420	2474	2559
17	1867	1989	2101	2241	2358	2433	2490	2575
18	1872	1998	2111	2253	2369	2446	2507	2588
19	1877	2007	2120	2264	2379	2458	2522	2602
20	1884	2016	2130	2275	2390	2473	2536	2614
21	1889	2025	2140	2287	2405	2485	2551	2628
22	1893	2033	2150	2296	2415	2498	2563	2640
23	1900	2040	2159	2305	2427	2513	2573	2652
24	1906	2048	2169	2315	2440	2525	2584	2663
25	1910	2055	2177	2328	2452	2536	2593	2675
26	1914	2063	2190	2337	2466	2545	2603	2688
27	1919	2070	2200	2346	2478	2556	2614	2697
28	1925	2077	2210	2354	2491	2565	2622	2709
29	1930	2083	2219	2362	2501	2574	2632	2718
30	1935	2089	2228	2371	2512	2582	2641	2727
31	1942	2096	2236	2377	2521	2590	2649	2735
32	1947	2104	2245	2385	2531	2596	2656	2743
33	1952	2111	2254	2393	2540	2604	2665	2750
34	1958	2118	2264	2401	2549	2611	2673	2757

Reading Fall 2002 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
35	1965	2126	2271	2408	2556	2618	2682	2765
36	1969	2132	2278	2415	2563	2626	2690	2771
37	1974	2140	2286	2425	2571	2633	2697	2778
38	1980	2146	2293	2433	2579	2640	2706	2785
39	1986	2153	2302	2442	2586	2648	2712	2792
40	1992	2160	2308	2449	2593	2655	2719	2797
41	1997	2166	2316	2458	2600	2662	2726	2804
42	2003	2172	2323	2467	2607	2671	2732	2812
43	2008	2178	2330	2475	2614	2679	2738	2818
44	2015	2186	2338	2484	2622	2687	2742	2825
45	2019	2193	2343	2492	2630	2692	2749	2831
46	2024	2202	2350	2499	2637	2702	2756	2837
47	2029	2209	2357	2506	2644	2710	2762	2844
48	2034	2217	2364	2516	2651	2716	2768	2850
49	2040	2224	2370	2523	2657	2723	2774	2856
50	2045	2231	2376	2530	2664	2729	2779	2861
51	2048	2239	2382	2539	2670	2735	2786	2867
52	2053	2246	2389	2547	2679	2741	2791	2874
53	2057	2255	2395	2554	2686	2747	2796	2880
54	2063	2262	2405	2562	2692	2753	2802	2886
55	2068	2269	2410	2569	2700	2758	2807	2891
56	2073	2277	2417	2576	2707	2764	2813	2898
57	2077	2284	2426	2582	2713	2770	2820	2903
58	2085	2290	2433	2588	2717	2776	2826	2909
59	2089	2297	2442	2594	2725	2781	2832	2915
60	2094	2304	2451	2601	2731	2787	2838	2921
61	2099	2311	2459	2608	2737	2792	2845	2925
62	2103	2317	2467	2616	2742	2798	2851	2930
63	2109	2325	2476	2623	2748	2803	2858	2936
64	2116	2331	2482	2632	2754	2809	2865	2941
65	2126	2337	2489	2640	2759	2816	2872	2946
66	2130	2344	2497	2648	2766	2823	2879	2951
67	2138	2351	2504	2655	2772	2830	2886	2956
68	2144	2357	2515	2663	2779	2837	2893	2962
69	2150	2362	2522	2671	2785	2844	2899	2968

Reading Fall 2002 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
70	2154	2369	2531	2678	2791	2851	2907	2973
71	2160	2376	2540	2686	2798	2857	2913	2979
72	2168	2383	2550	2693	2804	2865	2919	2985
73	2176	2390	2559	2701	2810	2873	2924	2990
74	2183	2397	2568	2709	2818	2881	2931	2996
75	2192	2404	2577	2717	2824	2888	2937	3003
76	2201	2411	2585	2725	2831	2896	2943	3010
77	2209	2419	2593	2734	2839	2903	2951	3018
78	2216	2427	2601	2741	2846	2911	2958	3026
79	2226	2436	2610	2748	2854	2919	2963	3034
80	2239	2446	2618	2756	2864	2927	2970	3041
81	2253	2455	2628	2764	2874	2935	2978	3048
82	2261	2465	2637	2772	2883	2944	2986	3054
83	2272	2476	2649	2779	2892	2952	2993	3062
84	2283	2487	2661	2789	2902	2962	3001	3070
85	2294	2498	2671	2798	2911	2970	3012	3078
86	2306	2510	2683	2807	2920	2980	3022	3086
87	2319	2525	2696	2817	2930	2990	3034	3092
88	2334	2541	2710	2827	2943	3000	3044	3099
89	2349	2557	2723	2837	2954	3015	3054	3108
90	2359	2574	2735	2850	2967	3028	3066	3116
91	2374	2588	2745	2864	2978	3041	3079	3125
92	2391	2602	2757	2879	2994	3055	3088	3135
93	2407	2617	2770	2896	3011	3071	3100	3143
94	2424	2641	2789	2919	3030	3087	3112	3154
95	2452	2664	2811	2946	3050	3106	3131	3165
96	2473	2702	2838	2975	3078	3125	3147	3178
97	2518	2736	2878	3012	3110	3149	3165	3194
98	2601	2792	2937	3064	3153	3177	3194	3217
99	>2601	>2792	>2937	>3064	>3153	>3177	>3194	>3217

Reading Spring 2003 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
1	1397	1432	1704	1736	1917	2032	2002	1950
2	1414	1525	1802	1872	2023	2108	2089	2065
3	1434	1622	1879	1959	2089	2176	2170	2165
4	1452	1704	1921	2015	2140	2227	2223	2235
5	1476	1761	1976	2059	2186	2263	2269	2285
6	1501	1809	2010	2093	2222	2297	2321	2341
7	1525	1842	2039	2124	2247	2325	2359	2395
8	1577	1867	2061	2151	2272	2354	2391	2442
9	1622	1896	2082	2181	2296	2378	2421	2482
10	1655	1917	2101	2202	2314	2402	2440	2519
11	1704	1942	2119	2226	2335	2429	2464	2549
12	1719	1960	2137	2245	2354	2450	2486	2572
13	1733	1978	2153	2263	2373	2471	2514	2590
14	1761	1995	2167	2279	2390	2489	2538	2607
15	1787	2011	2181	2297	2408	2510	2558	2628
16	1809	2025	2198	2310	2426	2528	2578	2645
17	1826	2039	2212	2323	2440	2543	2593	2661
18	1842	2053	2224	2336	2458	2559	2608	2680
19	1853	2063	2235	2349	2471	2571	2622	2702
20	1868	2074	2248	2361	2484	2584	2633	2716
21	1882	2084	2259	2375	2498	2597	2644	2727
22	1893	2095	2273	2387	2512	2609	2655	2739
23	1904	2105	2283	2400	2529	2617	2668	2749
24	1917	2118	2294	2412	2540	2630	2677	2760
25	1933	2128	2304	2422	2553	2639	2686	2769
26	1944	2138	2315	2431	2564	2651	2696	2781
27	1959	2148	2325	2441	2575	2659	2706	2793
28	1968	2157	2334	2453	2585	2669	2717	2802
29	1979	2167	2343	2461	2596	2680	2727	2812
30	1990	2176	2353	2472	2605	2688	2737	2821
31	1999	2184	2362	2481	2615	2698	2745	2829
32	2008	2194	2372	2490	2622	2707	2752	2839
33	2018	2202	2382	2499	2631	2717	2760	2846
34	2025	2213	2392	2509	2639	2723	2767	2855

Reading Spring 2003 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
35	2034	2220	2401	2520	2647	2731	2775	2863
36	2042	2229	2411	2531	2656	2738	2782	2870
37	2049	2236	2420	2539	2664	2745	2791	2879
38	2058	2243	2429	2548	2671	2752	2800	2888
39	2066	2251	2439	2557	2678	2758	2807	2898
40	2074	2260	2446	2565	2685	2766	2816	2906
41	2082	2270	2456	2574	2694	2771	2823	2914
42	2089	2277	2464	2582	2701	2779	2829	2922
43	2096	2286	2473	2590	2708	2784	2837	2927
44	2103	2293	2480	2598	2716	2790	2845	2936
45	2110	2299	2488	2604	2722	2797	2853	2944
46	2119	2305	2498	2614	2730	2804	2860	2951
47	2126	2314	2506	2621	2736	2810	2866	2959
48	2132	2322	2515	2628	2741	2817	2874	2967
49	2141	2329	2526	2636	2747	2823	2881	2972
50	2149	2336	2534	2643	2755	2830	2888	2980
51	2155	2344	2541	2652	2761	2838	2896	2987
52	2165	2350	2550	2660	2768	2845	2905	2994
53	2172	2356	2557	2666	2774	2853	2911	3001
54	2177	2362	2566	2672	2780	2860	2918	3009
55	2185	2370	2574	2679	2785	2866	2926	3018
56	2192	2376	2581	2685	2791	2875	2932	3028
57	2200	2384	2588	2692	2797	2882	2940	3035
58	2209	2393	2597	2700	2803	2890	2945	3042
59	2217	2400	2605	2707	2809	2897	2951	3051
60	2224	2409	2612	2713	2816	2905	2956	3059
61	2231	2417	2620	2720	2823	2912	2963	3069
62	2240	2426	2628	2728	2828	2920	2970	3077
63	2248	2435	2636	2735	2837	2928	2977	3084
64	2258	2444	2643	2742	2845	2934	2983	3091
65	2270	2453	2650	2748	2852	2942	2991	3099
66	2278	2462	2657	2755	2862	2949	2998	3106
67	2286	2472	2663	2761	2870	2957	3007	3113
68	2293	2480	2671	2767	2878	2965	3016	3120
69	2299	2487	2680	2773	2886	2972	3024	3131

Reading Spring 2003 Norm Sample

Percentile Conversion Table from Scale Score

	Grade Level							
NPR	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9 - 12**
70	2307	2496	2688	2778	2892	2979	3034	3138
71	2314	2506	2696	2784	2899	2985	3042	3144
72	2321	2515	2702	2791	2908	2995	3051	3151
73	2329	2524	2711	2797	2916	3003	3058	3158
74	2338	2533	2719	2803	2923	3013	3067	3165
75	2344	2542	2727	2809	2930	3022	3076	3173
76	2352	2554	2734	2817	2938	3033	3084	3180
77	2361	2562	2741	2823	2947	3042	3094	3188
78	2368	2572	2747	2831	2956	3050	3102	3195
79	2377	2583	2754	2839	2963	3060	3111	3204
80	2385	2591	2761	2848	2972	3070	3120	3213
81	2394	2606	2768	2858	2981	3080	3130	3220
82	2402	2618	2776	2868	2989	3090	3139	3227
83	2412	2632	2784	2880	3001	3100	3147	3237
84	2423	2644	2792	2889	3014	3108	3158	3247
85	2435	2657	2802	2899	3028	3118	3168	3255
86	2446	2667	2811	2910	3040	3129	3178	3263
87	2460	2679	2820	2921	3051	3140	3187	3272
88	2475	2692	2831	2933	3066	3151	3200	3282
89	2485	2706	2845	2948	3080	3163	3212	3291
90	2503	2722	2860	2965	3092	3178	3224	3301
91	2521	2737	2876	2980	3109	3193	3238	3312
92	2543	2751	2892	2998	3125	3209	3250	3322
93	2568	2770	2913	3021	3143	3228	3266	3337
94	2590	2788	2932	3043	3166	3246	3286	3355
95	2620	2810	2957	3065	3192	3264	3304	3377
96	2653	2839	2984	3091	3221	3289	3325	3404
97	2702	2877	3031	3129	3256	3325	3357	3439
98	2763	2941	3094	3182	3302	3373	3425	3518
99	>2763	>2941	>3094	>3182	>3302	>3373	>3425	>3518

G. - Calibration Participant Schools

The following list of schools are those that participated in either the mathematics and reading calibration stages, science and language arts calibrations stages, or both.

School	City	State
Alaska Gateway School District	Tok	AK
Dot Lake	Dot Lake	AK
Maudrey J. Sommer School	Tanana	AK
Altheimer Unified School	Altheimer	AR
Anne Watson Elementary	Bigelow	AR
Arkadelphia Senior High School	Arkadelphia	AR
Bigelow High School	Bigelow	AR
Central Primary School	Arkadelphia	AR
Center Valley Elementary	Russellville	AR
Crossett School District	Crossett	AR
Dardanelle Elementary School	Dardanelle	AR
Dwight Elementary School	Russellville	AR
Earle School District	Earle	AR
Gardner Junior High School	Russellville	AR
Goza Junior High School	Arkadelphia	AR
Heber Springs Elementary	Heber Springs	AR
London Elementary School	London	AR
McNeil School District	McNeil	AR
Mountain Pine School District	Mountain Pine	AR
Oakland Heights	Russellville	AR
Peake Elementary School	Arkadelphia	AR
Perry-Casa Public School	Casa	AR
Pottsville School District	Pottsville	AR
Poyen Public School District	Poyen	AR
Russellville Middle School	Russellville	AR
Scotland School District	Scotland	AR
Siloam Springs Middle School	Siloam Springs	AR
Siloam Springs Senior High School	Siloam Springs	AR
Southside East Elementary School	Siloam Springs	AR
Southside West Elementary School	Siloam Springs	AR
Upper Elementary	Russellville	AR

School	City	State
Van Buren School District	Van Buren	AR
Coolidge Unified Schools	Coolidge	AZ
J.O.Combs Elementary School	Queen Creek	AZ
Mesa Public Schools	Mesa	AZ
Smith Middle School	Fort Huachuca	AZ
All Hallows Academy San Diego Diocese	La Jolla	CA
Anna Yates	Emeryville	CA
April Lane School	Yubba City	CA
Capitola Elementary School	Capitola	CA
Chaparral Elementary School	Poway	CA
Clifton Middle School	Monrovia	CA
Creekside Elementary	San Diego	CA
Cuddeback	Cuddeback	CA
Deer Canyon	San Diego	CA
Frank Wright Intermediate	Imperial	CA
Harborside School	San Diego	CA
Harrington School	Oxnard	CA
Holy Names College Upward Bound	Oakland	CA
Hueneme School District	Oxnard	CA
Indian Creek School	Placerville	CA
La Granada Elementary School	Riverside	CA
Lemonwood School	Oxnard	CA
Loma Vista Intermediate	Riverside	CA
Los Penasquitos Elementary School	San Diego	CA
Main Street Elementary School	Santa Cruz	CA
Mayflower Elementary	Monrovia	CA
McAuliffe School	Oxnard	CA
McKinna Elementary	Oxnard	CA
Meridian Elementary School	Meridian	CA
New Brighton Middle School	Capitola	CA
New Directions	Poway	CA
Park Village Elementary School	San Diego	CA
Perris Union High School District	Perris	CA
Ramona Lutheran	Ramona	CA
Rim of the World	Lake Arrowhead	CA
Rolling Hills Elementary	Poway	CA
Rosa Parks Elementary	San Diego	CA

School	City	State
Rosemary Kennedy Elementary	Riverside	CA
San Juan Unified	Carmichael	CA
Santa Cruz Gardens Elementary School	Santa Cruz	CA
Soquel Elementary School	Soquel	CA
Stella Maris Academy	San Diego	CA
Sunset High School	Crescent City	CA
The Preuss School UCSD	La Jolla	CA
Vallecitos	Rainbow	CA
Washington Colony	Fresno	CA
Washington Elementary	Covina	CA
Westwood Elementary	San Diego	CA
Yuba County Career Preparatory	Marysville	CA
Adams County School District	Commerce City	CO
Holyoke High School	Holyoke	CO
Pueblo School of the Arts and Sciences	Pueblo	CO
Strasburg Elementary School	Strasburg	CO
Strasburg Junior High School	Strasburg	CO
Explorations	Winsted	CT
KIMA-PCS	Washington	DC
Upward Bound/George Washington Univ.	Washington	DC
Bay County School District	Panama City	FL
Ernest R Graham Elementary	Hialeah	FL
Flagler School District	Flagler	FL
James A. Elementary School	Palatka	FL
St. Mary School	Fort Walton Beach	FL
West Riverside Elementary School	Jacksonville	FL
Atlanta New Century School	Atlanta	GA
Davis Elementary School	Milledgeville	GA
Fort Stewart School Systems	Fort Stewart	GA
J. W. Arnold Elementary School	Jonesboro	GA
Morrow Elementary	Morrow	GA
Saint Mark Lutheran School	Kaneohe	HI
South Pacific Academy	Pago Pago	HI
Arco Elementary School	Arco	ID
Beach Park School District #3	Beach Park	IL
Buffalo Grove High School	Buffalo Grove	IL
Chicago Public Schools	Chicago	IL

School	City	State
District 214	Arlington Heights	IL
Elk Grove High School	Elk Grove	IL
Frankfort District 157-C	Frankfort	IL
Glenside Middle School	Glendale Heights	IL
Immaculate Conception	Monmouth	IL
John Hersey High School	Arlington Heights	IL
Lincoln Trail Elementary	Mahomet	IL
Lyons Elementary District 103	Lyons	IL
Medinah School District 11	Roselle	IL
Office of Accountability	Chicago	IL
Potomac CUSD #10	Potomac	IL
Prospect High School	Mount Prospect	IL
Rolling Meadows High School	Rolling Meadows	IL
St. Matthew School	Champaign	IL
St. Philomena School	Peoria	IL
Thornridge High School	Dolton	IL
Thornton Township High School	Harvey	IL
Thornwood High School	South Holland	IL
Township High School District	Arlington Heights	IL
Westville Community Schools	Westville	IL
Wheeling High School	Wheeling	IL
Woodstock Community School District	Woodstock	IL
Baugo Community School Corporation	Elkhart	IN
Chapelwood Elementary	Indianapolis	IN
Glenwood Park	Fort Wayne	IN
Hartford City	Hartford City	IN
Kekionga Middle School	Fort Wayne	IN
Kingsbury Elementary School	LaPorte	IN
Mary Daly Elementary	Elkhart	IN
Menominee	Plymouth	IN
Miami Middle School	Fort Wayne	IN
Roosevelt Elementary School	Elkhart	IN
South Wayne Junior High School	Indianapolis	IN
South Vermillion Community Schools	Clinton	IN
Washington Elementary	Fort Wayne	IN
Barkley Elementary School	Fort Campbell	KY
Belfry High School	Belfry	KY

School	City	State
Bevins Elementary School	Sidney	KY
Blackberry Elementary School	McCarr	KY
Boone County School District	Booneville	KY
Dorton Elementary School	Dorton	KY
Elkhorn City Elementary School	Elkhorn City	KY
Elkhorn Senior High School	Elkhorn	KY
Feds Creek Junior/Senior High School	Feds Creek	KY
Fort Campbell High School	Fort Campbell	KY
George F Johnson Elementary School	Virgie	KY
Grapevine Elementary School	Glenna Sue	KY
Greasy Creek Elementary School	Shelbiana	KY
Jackson Rowe Elementary School	Steele	KY
Johns Creek Elementary School	Pikeville	KY
Kimper Elementary School	Kimper	KY
Lincoln Elementary School	Fort Campbell	KY
Lookout Elementary School	Lookout	KY
Lucas Elementary School	Fort Campbell	KY
Mahaffey Middle School	Fort Campbell	KY
Majestic Knox Creek Elementary School	Majestic	KY
Marshall Elementary School	Fort Campbell	KY
Millard Elementary School	Pikesville	KY
Millard Junior/Senior High School	Pikesville	KY
Mullins Elementary School	Pikesville	KY
Phelps Elementary School	Phelps	KY
Phelps Junior/Senior High School	Phelps	KY
Pike County Central High School	Pikesville	KY
Raceland Independent School District	Raceland	KY
Robinson Creek Elementary School	Robinson Creek	KY
Runyon Elementary School	Pinsonfork	KY
Shannon Johnson Elementary	Berea	KY
Shelby Valley High School	Shelbyville	KY
Southside Elementary School	Toler	KY
Turkey Creek Middle School	Turkey Creek	KY
Wassom Middle School	Fort Campbell	KY
Caddo Parish	Shreveport	LA
Diocese of Shreveport Schools	Shreveport	LA
Napoleonville Primary School	Napoleonville	LA

School	City	State
NSU Middle Lab School	Natchitoches	LA
Parks Elementary	Natchitoches	LA
Joseph Martin Elementary School	North Attleborough	MA
Acton School District	Acton	ME
Capital Area Academy	Lansing	MI
Carrollton Public Schools	Saginaw	MI
Central Montcalm Public School District	Stanton	MI
Chapelle Elementary School	Ypsilanti	MI
Dowagiac Union School District	Dowagiac	MI
Quincy Community Schools	Quincy	MI
Union City Community School	Union City	MI
Ypsilanti School District	Ypsilanti	MI
Blue Hills Elementary School	Independence	MO
Fire Prairie Middle School	Independence	MO
Fort Osage High School	Independence	MO
Lesterville R-4	Lesterville	MO
Osage Trail Middle School	Independence	MO
Saint Elizabeth School	Saint Elizabeth	MO
South Callaway R-2	Mokane	MO
St. James School District	St. James	MO
Wentzville School District	Wentzville	MO
George County School District	George County	MO
Jefferson Middle School	Columbia	MS
Oxford School District	Oxford	MS
Wayne County School District	Waynesboro	MS
Western Line School District	Avon	MS
S. W. Snowden Elementary	Aurora	NC
Vance County Schools	Henderson	NC
CP Squires	North Las Vegas	NV
Hebrew Academy	Las Vegas	NV
Amare School	Brooklyn	NY
Freeport Public Schools	Freeport	NY
Lafayette Intermediate School	Waterloo	NY
Purchase School	Purchase	NY
Princeton City School District	Princeton City	OH
Brink Junior High School	Oklahoma City	OK
Bryant Elementary School	Oklahoma City	OK

School	City	State
Central Junior High School	Moore	OK
Highland East Junior High School	Moore	OK
Highland West Junior High School	Moore	OK
Inola Elementary School	Inola	OK
Lawton Public Schools	Lawton	OK
Moore Alternative School	Moore	OK
Moore High School	Moore	OK
Red Oak Elementary School	Oklahoma City	OK
Sooner Elementary School	Oklahoma City	OK
Victory Christian School	Tulsa	OK
West Junior High School	Oklahoma City	OK
Westmoore High School	Moore	OK
Cambria Heights Elementary School	Patton	PA
Cambria Heights High School	Patton	PA
Cambria Heights Middle School	Patton	PA
Chester County Intermediate	Phoenixville	PA
Fairfield Area School District	Fairfield	PA
Fairview Elementary School	Industry	PA
Freeport Public Schools	Freeport	PA
Johnstown Career and Tech Center	Johnstown	PA
Lenape Technical School	Lenape	PA
Midland Borough School District	Midland	PA
Penn Cambria School District	Cresson	PA
Penn Trafford High School	Harrison City	PA
Ray W Snyder Middle School	Industry	PA
Rockwood Area School District	Rockwood	PA
Shenandoah Valley	Shenandoah	PA
W Snyder Middle School	Industry	PA
Western Beaver Junior/Senior High School	Industry	PA
Batesburg-Leesville Elementary School	Batesburg-Leesville	SC
Batesburg-Leesville High School	Batesburg-Leesville	SC
Batesburg-Leesville Middle School	Batesburg-Leesville	SC
Dakota Valley	North Sioux City	SD
DeSmet Public School	DeSmet	SD
Elk Point Jefferson	Elk Point	SD
Great Plains Lutheran High School	Watertown	SD
Marion High School	Marion	SD

School	City	State
New Underwood	New Underwood	SD
O.M. Tiffany Elementary School	Aberdeen	SD
Plankinton	Plankinton	SD
West MS-Rapid City	Rapid City	SD
Sullivan County School District	Blountville	TN
Spencer Elementary School	Spencer	TN
Westwood Elementary	Manchester	TN
Van Buren County Schools	Spencer	TN
Bandera Independent School District	Bandera	TX
Bassett Middle School	El Paso	TX
Hooks Independent School District	Hooks	TX
Prestonwood Christian Academy	Dallas	TX
San Antonio Independent School District	San Antonio	TX
Hamilton-Holmes Middle School	King William	VA
King William County Public Schools	King William	VA
Lee County Schools	St. Charles	VA
Cherrydale Primary School	Steilacoom	WA
North River School District	Cosmopolis	WA
Discovery Primary School	Milton	WA
Eagle High School	Toppenish	WA
Endeavour Intermediate School	Milton	WA
Fife High School	Tacoma	WA
Garfield Elementary	Toppenish	WA
Highland Elementary	Clarkston	WA
Kirkwood Elementary	Toppenish	WA
Lincoln Elementary	Toppenish	WA
Lincoln Middle School	Clarkston	WA
Pioneer Middle School	Steilacoom	WA
Puget Sound School District	Seattle	WA
Saltar's Point Elementary	Steilacoom	WA
Steilacoom High School	Steilacoom	WA
Surprise Lake Middle School	Milton	WA
Toppenish School District	Toppenish	WA
Calhoun County School District	Grantsville	WV
Riverside Elementary	Williamson	WV
Fremont County School District 112	Shoshoni	WY

H. - Suggested Learning Objectives Report Explained

The foundation for the Suggested Learning Objectives report in the PERFORMANCE Series is based on the unidimensionality of the item pools. Unidimensionality allows the items (or skills) to be rank ordered to form a hierarchical continuum of items (or skills). Using the outcome measure estimated during the test, probability inferences can be made on successfully answering any of the items within the pool. One can also determine the position of the outcome measure on the hierarchical continuum of items (or skills).

SLO Report Detailed

The goal in the Suggested Learning Objectives report is to list the skills within the PERFORMANCE Series item pool where the student most likely has attained (*Successfully Attained*) as well as those skills where the student most likely did not attain (*Suggested Learning Objectives*). This can be determined using the ability estimate *M* measured by the test and the difficulties of the skills. Skills are made up of several items with a variety of difficulties *B*. There are several options available in representing the difficulty of a skill. One of the central tendency statistics (as mean, median, or mode) is a reasonable choice. The approach used in the PERFORMANCE Series is a more conservative one. The difficulty of the skill is defined as the difficulty of the item within that skill for which its difficulty is greater than or equal to 75% of the other items within that skill. For example, if a skill is composed of 100 items all ordered by difficulty (item 1 is the easiest, item 100 is the hardest), then the difficulty of the skill is equal to the difficulty of item 75. Since we are going to make statements about skills that the student most likely attained, the 75^{th} item more than likely will have a larger difficulty than the calculated mean, median, or mode of the items in that skill. This will make our interpretation of *Successfully Attained* skills more conservative.

Given an ability estimate *M* and an item of difficulty *B*, the Rasch probability of answering that item correct is $\frac{e^{M-B}}{1+e^{M-B}}$. Items with difficulty *B* equal to *M* have a 0.50 probability of being answered correctly. Items with difficulty *B* less than *M* have a greater than 0.50 probability of being answered correctly, and similarly, items with difficulty *B* greater than *M* have a less than 0.50 probability of being

answered correctly. The Suggested Learning Objectives report positions the outcome measure M on the continuum by partitioning the list of skills into the *Successfully Attained* column by selecting those skills with difficulty estimates less than the student ability estimate *M*; and into the *Suggested Learning Objectives* column are the remaining skills, those with difficulty estimates greater than or equal to the student ability estimate *M*.

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