

FCAT 2.0 Science State and District Reports of Results

Readers should have one of the following FCAT 2.0 Science reports when reviewing and interpreting information provided in this section: *District Report of Schools*, *District Summary*, *State Report of Districts*, and/or *State Summary*. These reports are formatted similarly.

- ❶ **Top of Reports:** The title of the report is printed here identifying the **subject area** of the report; the *District Report of Schools* and *State Report of Districts* provide the grade level of the data included in the report. The name and number of the district are also printed in this area on district-level reports.
- ❷ **Left Side of Reports:** Identifying information for the district or school is provided in the first column. On the *District Summary* and *State Summary*, the grade level for the data is provided in this column. The number of students tested appears in the second column of all reports. The **Mean Scale Score** is provided in the third column.
- ❸ **Percentage in Each Achievement Level:** This section of the report indicates the percentage of students who scored within each **Achievement Level**, as well as the percentage of students scoring in Achievement Levels 3 – 5, since the percentage of students scoring at or above satisfactory is necessary for accountability reporting. The FCAT 2.0 **Scale Score** range for each Achievement Level is provided in the header of the *District Report of Schools* and *State Report of Districts*. Tables providing the FCAT 2.0 Scale Score ranges for the Achievement Levels for each grade are provided at the bottom of the *District Summary* and *State Summary*.
- ❹ **Mean Points Earned by Content Area:** The first row of information shown in this section provides the “**Points Possible**” for each **content area**, or **reporting category**, which varies by grade level. The other information in this section varies depending on the report:
 - The *District Report of Schools* displays **mean points earned** by school.
 - The *State Report of Districts* displays mean points earned by district.
 - The *District Summary* displays district- and state-level mean points earned, grouped by grade level.
 - The *State Summary* displays state-level mean points earned, grouped by grade level.

FCAT 2.0 Writing State and District Reports of Results

Readers should have one of the following FCAT 2.0 Writing reports when reviewing and interpreting information provided in this section: *District Report of Schools*, *District Summary*, *State Report of Districts*, and/or *State Summary*. These reports are formatted similarly.

- 1 Top of Reports:** The title of the report is printed here identifying the **subject area** of the report; the *District Report of Schools* and *State Report of Districts* provide the grade level of the data included in the report. The name and number of the district are also printed in this area on district-level reports.
- 2 Left Side of Reports:** Identifying information for the district or school is provided in the first column. On the *District Summary* and *State Summary*, the grade level for the data is provided in this column as well. The number of students tested appears in the second column. The **mode of writing (narrative, expository, or persuasive)** appears in the third column of the District Summary and State Summary. The **Mean FCAT 2.0 Score** is provided in the next column.
- 3 Percentage and Number of Students Earning Each Score Point:** This section of the report indicates the percentage and number of students who scored at each score point on the 1.0 through 6.0 **score scale**, including the percentage and number of students scoring half-point scores. Two trained scorers score each response using the FCAT 2.0 Writing holistic **rubric**. Although only whole number scores (1 through 6) are assigned, scores from two scorers are averaged and half points can occur. For example, when a response receives scores of 3 and 4, the final score is 3.5. Very few responses (less than one percent) are identified as unscorable on this report.
- 4 Right Side of Reports:** The “Percentage and Number Earning Score Points” section provides the percentage and number of students scoring at 3.0 and above, 3.5 and above, and 4.0 and above.

FCAT 2.0 Content Areas

The content of each FCAT 2.0 Reading, Mathematics, and Science assessment is organized by **reporting categories** that are used for test design, scoring, and reporting purposes. Reporting categories group the assessed student knowledge and skills, or **benchmarks**, into broad **content areas**. In reading, students build upon fundamental reading skills as they progress from grade to grade; therefore, the same reporting categories organize the reading skills assessed by FCAT 2.0 Reading for all grade levels. The difficulty of the concepts assessed on FCAT 2.0 Science progresses systematically from grade 5 to grade 8. In mathematics, because students are introduced to new skill sets as they progress from grade to grade, reporting categories vary by grade level. The content assessed by FCAT 2.0 Writing is not organized by reporting categories; see page 9 for information about the four writing elements (focus, organization, support, and conventions) and criteria used to evaluate FCAT 2.0 Writing responses.

FCAT 2.0 Reading Reporting Categories

FCAT 2.0 Reading measures student achievement of the ***Next Generation Sunshine State Standards*** in reading and literature. For grades 3-10, FCAT 2.0 Reading consists of **selected-response items** that assess students' comprehension of various types of reading selections.

For all grade levels tested, FCAT 2.0 Reading assesses what students know and are able to do in the broad **reporting categories** listed below. The difficulty of the concepts assessed on FCAT 2.0 Reading progresses systematically from grade to grade, as does the complexity of the text presented to the student at each grade level.

Grades 3-10

- **Vocabulary**
Students use multiple strategies to determine the meaning of grade-appropriate vocabulary words.
- **Reading Application**
Students use a variety of strategies to comprehend text suitable for the grade level.
- **Literary Analysis: Fiction and Nonfiction**
Students identify, analyze, and apply knowledge of the elements of a variety of literary texts, both fiction and nonfiction.
- **Informational Text and Research Process**
Students comprehend and interpret informational text from a variety of sources.

FCAT 2.0 Mathematics Reporting Categories

FCAT 2.0 Mathematics measures student achievement of the *Next Generation Sunshine State Standards* in mathematics. For grade 3, FCAT 2.0 Mathematics includes only **selected-response items**; for grades 4, 6, 7, and 8, FCAT 2.0 Mathematics includes both **gridded-response** and selected-response items; and for grade 5, FCAT 2.0 Mathematics includes both **fill-in response** and selected-response items.

For all grade levels tested, FCAT 2.0 Mathematics assesses what students know and are able to do in the broad **reporting categories** listed below. The difficulty of the concepts assessed on FCAT 2.0 Mathematics progresses systematically from grade to grade, as does the complexity of the numerals and mathematical operations included at each grade level.

Grade 3

- **Number: Operations, Problems, and Statistics**

Students use number concepts and computation skills to solve real-world problems; create, analyze, and represent patterns and relationships; and construct and analyze data displays and graphs.

- **Geometry and Measurement**

Students describe and analyze properties of two-dimensional shapes, including symmetry and congruence; solve problems related to perimeter; and measure objects and tell time.

- **Number: Fractions**

Students use models to represent fractions and equivalent fractions, including fractions greater than one; and compare and order fractions.

Grade 4

- **Number: Operations and Problems**

Students use number concepts and computation skills to solve real-world problems; and analyze patterns and relationships using expressions, equations, and visual representations.

- **Geometry and Measurement**

Students determine the area of two-dimensional shapes; classify angles and identify the results of transformations; and use spatial reasoning to solve geometric problems.

- **Number: Base 10 and Fractions**

Students identify and estimate decimals; relate fractions, decimals, and percents; and compare and order fractions and decimals.

Grade 5

- **Number: Base Ten and Fractions**

Students divide multi-digit whole numbers, including solving real-world problems; and add and subtract decimals, fractions, and mixed numbers.

- **Geometry and Measurement**

Students analyze shapes and solve problems related to area, surface area, and volume; compare units of measure within the same system of measurement; and identify ordered pairs on a coordinate plane.

- **Expressions, Equations, and Statistics**

Students simplify expressions and use properties of equality to solve equations and real-world problems; and analyze graphs appropriate to the context of the situation.

Grade 6

- **Fractions, Ratios, Proportional Relationships, and Statistics**

Students multiply and divide fractions and decimals, and solve real-world problems involving percents, ratios, and rates; and analyze and determine measures of central tendency and variability.

- **Expressions and Equations**

Students evaluate expressions, equations, and inequalities; and use algebraic notation to describe linear functions and simple relations.

- **Geometry and Measurement**

Students analyze and solve problems involving perimeter, area of two-dimensional composite figures, and the volume of prisms.

Grade 7

- **Geometry and Measurement**

Students solve problems involving the transformation of figures on a coordinate plane; determine the volume and surface area of three-dimensional figures; and compare and convert units of measure.

- **Ratios and Proportional Relationships**

Students solve problems using ratios and apply proportional relationships to real-world and mathematical situations.

- **Number: Base Ten**

Students solve real-world problems using operations on all rational numbers and use different strategies to solve linear equations.

- **Statistics and Probability**

Students analyze graphs and make generalizations from population samples; and determine and use probability to make predictions.

Grade 8

- **Expressions, Equations, and Functions**

Students analyze and represent linear functions to solve linear equations and systems of linear equations; and solve and graph inequalities.

- **Geometry and Measurement**

Students analyze two- and three-dimensional figures by using distance and angle; and compare and convert units of measure.

- **Number: Operations, Problems, and Statistics**

Students solve real-world problems using operations on real numbers; and analyze and summarize data sets.

FCAT 2.0 Science Reporting Categories

FCAT 2.0 Science measures student achievement of the *Next Generation Sunshine State Standards* in science. For grades 5 and 8, the FCAT 2.0 Science assessment includes only **selected-response items**.

For both grade levels tested, FCAT 2.0 Science assesses what students know and are able to do in the broad **reporting categories** listed below. The difficulty of the concepts assessed on FCAT 2.0 Science progresses systematically from grade 5 to grade 8.

Grade 5

- **Nature of Science**
Students evaluate investigations and experiments; organize data; identify the control group in an experiment; interpret data and analyze information; and distinguish between observations and opinions.
- **Earth and Space Science**
Students distinguish among objects in our Solar System; identify categories of rocks and characteristics of minerals; differentiate between physical weathering and erosion; identify characteristics associated with different climate zones; and identify factors that affect weather.
- **Physical Science**
Students identify basic forms of energy; identify familiar forces; trace the conversion of electric energy into other forms of energy; and distinguish relationships among mass, force, and motion.
- **Life Science**
Students identify the function of human body organs; compare life cycles of Florida plants and animals; identify adaptations in animals and plants that allow them to survive; and trace energy through a food chain.

Grade 8

- **Nature of Science**
Students identify test and outcome variables in an experiment; differentiate between experiments and investigations; analyze information to make inferences or predictions; differentiate between replication and repetition; and distinguish between theories and laws.
- **Earth and Space Science**
Students relate the positions of the Sun, Moon, and Earth that result in tides, moon phases, and eclipses; identify Earth changes due to weathering, erosion, and plate tectonics; and recognize that the Sun's energy influences global atmospheric patterns.
- **Physical Science**
Students classify substances by physical properties; differentiate between physical and chemical change; distinguish between kinetic and potential energy; and differentiate contact forces and forces acting at a distance.
- **Life Science**
Students identify functions of the human body systems; classify organisms; identify ways genetic variation contributes to the scientific theory of evolution; determine probabilities for genotypic and phenotypic combinations; and distinguish relationships among organisms in a food web.

Glossary

Note: Terms defined in this glossary that have been cross-referenced appear in **bold text** the first time they are referenced in a definition other than their own.

Achievement Levels—Five categories of achievement that represent the success students demonstrate with the content assessed. The Achievement Levels are helpful in interpreting what a student’s score represents. Achievement Levels range from 1 to 5, with Level 1 being the lowest and Level 5 being the highest. Achieving a score in Level 3 or higher is considered satisfactory.

Benchmark—A specific statement that describes what students should know and be able to do. The benchmarks are part of the **Next Generation Sunshine State Standards**.

CBT Tools—Tools available to students in the **computer-based testing** platform. CBT tools vary slightly depending on the **subject area**. The FCAT 2.0 CBT tools provided on all computer-based tests are as follows: highlighter, eraser, eliminate-choice, review, and help. FCAT 2.0 Reading also has a notepad, and FCAT 2.0 Mathematics has a straightedge and reference sheet. Students may use these tools at any time during the assessment.

Computer-Based Practice Test—Students participate in a practice test session at school that demonstrates the tools and **item** types they will see on the actual assessment. The practice test is delivered through an **Electronic Practice Assessment Tool (ePAT)**, which mimics the software the students will use on the day of testing. This practice test is not intended to be a predictor of performance on the assessment. Students may practice on their own by accessing the appropriate ePAT at www.FLAssessments.com/ePAT.

Computer-Based Testing (CBT)—Several Florida statewide assessments are now being administered using a computer-based format. In 2013, Grades 6, 7, 9, and 10 FCAT 2.0 Reading, Grade 5 FCAT 2.0 Mathematics, and the FCAT 2.0 Reading Retake are given in a computer-based format, with paper-based accommodations offered for eligible students. When testing on the computer, students make their answer choices using the mouse or keyboard, and they may use various **CBT tools**, such as the eliminate-choice tool or the review tool, as they work. Once they have completed the test, they submit their answers electronically. Before exiting the test and submitting their responses, students are taken to a screen that identifies questions that are answered, unanswered, and marked for review.

Content Area—See **Reporting Category**.

Content Area Scores—The actual number of questions answered correctly within each **reporting category** of FCAT 2.0 Reading, Mathematics, and Science. For example, the content area scores are reported for the following reporting categories for Grade 3 FCAT 2.0 Mathematics: *Number: Operations, Problems, and Statistics; Geometry and Measurement; and Number: Fractions*. Content area scores are also referred to as raw scores.

Developmental Scale Score (DSS)—A type of **scale score** used to determine a student’s annual progress from grade to grade. During the fall of 2011, a vertical scaling study was conducted so that performance can be compared across all grade levels as it was for the FCAT. The DSS scale for FCAT 2.0 Reading ranges from 140 to 302 across grades 3-10, and the DSS scale for FCAT 2.0 Mathematics ranges from 140 to 298 across grades 3-8. On the *FCAT 2.0 Reading and Mathematics Parent and Student Reports*, the DSS is called the **FCAT 2.0 Score**.

DSS Change—A calculation made by the subtraction of two years’ **Developmental Scale Scores (DSS)**, which yields the amount of change across the two years, e.g., 2013 DSS – 2012 DSS = DSS Change. This number can be large for students who move from a low **Achievement Level 1** score to a low Achievement Level 2 score, or it may be small for a student who maintains a high score in Achievement Level 4. The DSS Change can be understood best when also considering the Achievement Level scores for the two years.

Electronic Practice Assessment Tool (ePAT) —See **Computer-Based Practice Test**.

Equipercentile Linking Method—For the first year administered, **FCAT 2.0 scores** were linked to the existing FCAT **score scale** through the equipercentile linking method. By this method, 2011 FCAT 2.0 Reading and Mathematics scores were linked to 2010 FCAT Reading and Mathematics scores and 2012 FCAT 2.0 Science scores were linked to 2011 FCAT Science scores at the same **percentile rank**. During the transition year to FCAT 2.0 for each assessment, this linking method allowed FCAT 2.0 scores to be reported as **FCAT Equivalent Scores (FCAT Equivalent Scale Scores)**, which range from 100–500, and **FCAT Equivalent DSS**, which range from 86–3008 across grades 3–10 and show a student’s annual progress from grade to grade).

Expository Writing—Writing that gives information, explains why or how, clarifies a process, or defines a concept. In FCAT 2.0 Writing, students in grades 4, 8, and 10 may be assigned **prompts** that are intended to result in expository writing.

FCAT 2.0 Score—The FCAT 2.0 Scores reported for Science are **scale scores**, and the FCAT 2.0 Scores for Reading and Mathematics are **Developmental Scale Scores (DSS)** that provide a way for parents to track their student’s annual academic progress from grade to grade. The FCAT 2.0 Scores reported for Writing are scores points reported on a scale of 1 to 6.

FCAT Equivalent Developmental Scale Score (DSS)—A type of **scale score** used in 2011 to determine a student’s annual progress from grade to grade. The FCAT Equivalent DSS scale for the 2011 FCAT 2.0 Reading and Mathematics assessments used the existing FCAT scale and ranges from 86–3008 across grades 3–10. These scores were linked to the existing FCAT **score scale** through the **equipercentile linking method**. The 2011 FCAT Equivalent DSS have been converted to the FCAT 2.0 **DSS** on the 2013 FCAT 2.0 reports that provide historical scores so that student performance can be shown on the new scale.

FCAT Equivalent Scale Score—The 2012 FCAT 2.0 Science and 2011 FCAT 2.0 Reading and Mathematics **scale scores** reported on the existing FCAT scale which ranges from 100–500 for each grade level and **subject area**. These scores are linked to the existing FCAT **score scale** through the **equipercentile linking method**. The scores are being reported in this way to maintain consistent student expectations during the transition year.

Fill-In Response—Test questions that require students to solve a problem for which the answer is numerical. Students will use the keyboard or number pad to type the digits 0-9 or the symbols for a decimal point, fraction bar, or negative sign in the answer boxes. The fill-in response format is used on computer-based tests only. In 2013, Grade 5 FCAT 2.0 Mathematics and the FCAT Mathematics Retake included fill-in response questions.

Gridded-Response—Test questions that require students to solve a problem for which the answer is numerical. Answers must be written and bubbled into a number grid. The gridded-response question format is used in paper-based FCAT 2.0 Mathematics assessments (grades 4, 6, 7, and 8).

Holistic Scoring—A method of scoring written work that considers the overall quality of the entire work. Rather than focusing on any one aspect of writing, trained scorers consider the integration of the four writing elements (focus, organization, support, and conventions). The FCAT 2.0 Writing **rubrics** for grades 4, 8, and 10 describe the predefined scoring criteria for each score point on a scale of 1 (lowest) to 6 (highest).

Items—Test questions that students are required to answer.

Mean—An average of the individual scores that describes the performance of a group of students. The mean is computed by finding the sum of all scores and dividing by the number of scores.

Median—A score that identifies the middle value of a group of data. The median is the point at which a group of numbers (scores) is divided in half (50 percent above and below).

Mode—The most frequently occurring score in a set of scores. If a distribution of scores is statistically normal, the **mean, median, and mode** are the same score.

Mode of Writing—The characteristics of written work that describe the purpose of the writing. FCAT 2.0 Writing assesses three modes of writing: **narrative**, **expository**, and **persuasive**.

Multiple-Choice—See **Selected-Response**.

Narrative Writing—Writing that recounts a personal or fictional experience or tells a story based on a real or imagined event. In FCAT 2.0 Writing, only students in grade 4 may be assigned a **prompt** that is intended to result in narrative writing.

Next Generation Sunshine State Standards (NGSSS)—The core content of the curricula taught in Florida. The NGSSS specify the core content knowledge and skills that K-12 public school students are expected to acquire in the **subject areas** of language arts, mathematics, science, social studies, visual and performing arts, physical education, health, and foreign languages. The NGSSS **benchmarks** identify what a student should know and be able to do at each grade level for each subject area.

Percentile Rank—The percentile rank is the percentage of scores that fall at or below a given score.

Persuasive Writing—Writing that attempts to convince the reader that a point of view is valid or that the reader should take a specific action. In FCAT 2.0 Writing, students in Grades 8 and 10 may be assigned **prompts** that are intended to result in persuasive writing.

Points Earned— See **Content Area Scores**.

Points Possible—The number of “Points Possible” shows the total number of test questions for a **content area**, or **reporting category**, on a test. Each question counts as one point. The number of points possible in a content area may change slightly each year.

Prompt— For FCAT 2.0 Writing the student is given an assignment that states the writer’s task, including the topic and purpose of the writing. The prompt has two parts: the *writing situation* (presents and clarifies the topic) and the *directions for writing* (guides the student to think about ways to address the topic and achieve the intended purpose for writing).

Reporting Category—The assessed student knowledge and skills, or **benchmarks**, are grouped into broad **content areas** called reporting categories. In reading, students build upon fundamental reading skills as they progress from grade to grade; therefore, the same reporting categories organize the reading skills assessed by FCAT 2.0 Reading for all grade levels. The difficulty of the concepts assessed on FCAT 2.0 Science progresses systematically from grade 5 to grade 8. In mathematics, because students are introduced to new skill sets as they progress from grade to grade, reporting categories vary by grade level.

Rubric—The scoring guidelines or criteria used to evaluate FCAT 2.0 Writing responses. The rubric describes what is required for each score point on a scale of 1 (lowest) to 6 (highest).

Scale Score—A score used to report results on the entire test. When a student takes FCAT 2.0 Reading, Mathematics, or Science, the student’s **content area scores**, which are also called raw scores, are converted to a scale score through an **equating** process. The equating process ensures that the scale scores represent the same level of difficulty each year.

Score Scale—The score range used for reporting scores on the entire test for FCAT 2.0 Reading, Mathematics, and Science. For FCAT 2.0 Reading and Mathematics, it is called a developmental score scale because it shows a student’s annual progress from grade to grade. The FCAT 2.0 Reading developmental score scale across grades 3 through 10 ranges from 140 to 302; the FCAT 2.0 Mathematics developmental score scale across grades 3 through 8 ranges from 140 to 298; and the FCAT 2.0 Science score scale range for both grades 5 and 8 is 140 to 260.

Selected-Response—Test questions that present students with several options from which to choose the correct answer. FCAT 2.0 Reading, Mathematics, and Science assessments use selected-response **items** in which four choices are given, only one of which is correct.

State Mean—The average score for each grade used for comparison purposes. Individual student scores, school **mean** scores, or district mean scores can be compared to the state mean.

Subject Area—The information or skills contained in an area of study. The subject areas assessed on the 2013 FCAT 2.0 are reading, mathematics, science, and writing.