

# TEST DESIGN SUMMARY

## 2012 OPERATIONAL ASSESSMENTS

### FCAT/FCAT 2.0/ END-OF-COURSE

#### I. Purpose of the FCAT, FCAT 2.0, and EOC Assessments

The Florida Comprehensive Assessment Test<sup>®</sup> (FCAT), Florida Comprehensive Assessment Test<sup>®</sup> 2.0 (FCAT 2.0), and Florida End-of-Course (EOC) Assessments are part of Florida's Next Generation Strategic Plan for the purpose of increasing student achievement and improving college and career readiness. The statewide assessment program is transitioning to assessing student achievement of the Next Generation Sunshine State Standards (NGSSS) through the implementation of the FCAT 2.0 and Florida EOC Assessments. Until this transition is complete, selected grades and subjects will continue to participate in the FCAT assessments, which measure student achievement of the Sunshine State Standards (SSS).

#### II. Tests Administered in Grades 3–11

**Table 1: Types of FCAT and FCAT 2.0 Assessments**

*This table provides an overview of the subjects assessed by the FCAT and FCAT 2.0 as well as a listing of the types of tests administered at each grade.*

Grade	Subjects				Tests
	R	M	S	W	
<b>3</b>	✓	✓			<ul style="list-style-type: none"> <li>◆ FCAT 2.0 Reading</li> <li>◆ FCAT 2.0 Mathematics</li> </ul>
<b>4</b>	✓	✓		✓	<ul style="list-style-type: none"> <li>◆ FCAT 2.0 Reading</li> <li>◆ FCAT 2.0 Mathematics</li> <li>◆ FCAT Writing</li> </ul>
<b>5</b>	✓	✓	✓		<ul style="list-style-type: none"> <li>◆ FCAT 2.0 Reading</li> <li>◆ FCAT 2.0 Mathematics</li> <li>◆ FCAT 2.0 Science</li> </ul>
<b>6</b>	✓	✓			<ul style="list-style-type: none"> <li>◆ FCAT 2.0 Reading</li> <li>◆ FCAT 2.0 Mathematics</li> </ul>
<b>7</b>	✓	✓			<ul style="list-style-type: none"> <li>◆ FCAT 2.0 Reading</li> <li>◆ FCAT 2.0 Mathematics</li> </ul>
<b>8</b>	✓	✓	✓	✓	<ul style="list-style-type: none"> <li>◆ FCAT 2.0 Reading</li> <li>◆ FCAT 2.0 Mathematics</li> <li>◆ FCAT 2.0 Science</li> <li>◆ FCAT Writing</li> </ul>
<b>9</b>	✓				<ul style="list-style-type: none"> <li>◆ FCAT 2.0 Reading</li> </ul>
<b>10</b>	✓			✓	<ul style="list-style-type: none"> <li>◆ FCAT 2.0 Reading</li> <li>◆ FCAT Writing</li> </ul>
<b>11 – Adult</b>	✓	✓			<ul style="list-style-type: none"> <li>◆ FCAT 2.0 Reading Retake*</li> <li>◆ FCAT Reading Retake**</li> <li>◆ FCAT Mathematics Retake**</li> </ul>
<p>* The FCAT 2.0 Reading Retake is based on the 2007 NGSSS.  ** The FCAT Reading and Mathematics Retakes are based on the 1996 SSS.</p>					

**Table 2: Types of Florida EOC Assessments**

*This table provides an overview of the subjects assessed by the EOC assessments. \* Florida EOC Assessments are not grade-level specific; rather, they are designed to measure student achievement of the NGSSS for specific courses and their equivalents, as outlined in the course descriptions.*

Courses	Tests
Algebra 1, Course Number 1200310	Algebra 1 EOC Assessment
Geometry, Course Number 1206310	Geometry EOC Assessment
Biology 1, Course Number 2000310	Biology 1 EOC Assessment
* The U.S. History EOC Assessment will be field tested during the spring semester in selected schools. Operational testing will begin in 2013.	

**III. Content Categories**

Tables 3–7 present the content categories for FCAT 2.0 Reading, Mathematics, and Science, Algebra 1, Geometry, and Biology 1 EOC Assessments, and FCAT Writing, along with the approximate percentage of raw-score points that will be derived from each content category.

**Table 3: FCAT 2.0 Reading**

Grade	Vocabulary	Reading Application	Literary Analysis: Fiction & Nonfiction	Informational Text & Research Process
3–7	15-25%	25-35%	25-35%	15-25%
8-10	15-25%	20-30%	20-30%	25-35%

**Table 4: FCAT 2.0 Mathematics**

Grade	Category	Percentage
3	Number: Operations, Problems, and Statistics	50
	Number: Fractions	20
	Geometry and Measurement	30
4	Number: Operations and Problems	45
	Number: Base Ten and Fractions	25
	Geometry and Measurement	30
5	Number: Base Ten and Fractions	50
	Expressions, Equations, and Statistics	20
	Geometry and Measurement	30
6	Fractions, Ratios, Proportional Relationships, and Statistics	40
	Expressions and Equations	40
	Geometry and Measurement	20
7	Number: Base Ten	25
	Ratios and Proportional Relationships	25
	Geometry and Measurement	30
	Statistics and Probability	20
8	Number: Operations, Problems, and Statistics	25
	Expressions, Equations, and Functions	40
	Geometry and Measurement	35

**Table 5: FCAT 2.0 Science**

Grade	Nature of Science	Earth and Space Science	Physical Science	Life Science
5	17%	29%	29%	25%
8	19%	27%	27%	27%

**Table 6: Florida EOC Assessments**

Assessment	Category	Percentage
<b>Algebra 1</b>	Functions, Linear Equations, and Inequalities	55
	Polynomials	20
	Rationals, Radicals, Quadratics, and Discrete Mathematics	25
<b>Geometry</b>	Two-Dimensional Geometry	65
	Three-Dimensional Geometry	20
	Trigonometry and Discrete Mathematics	15
<b>Biology 1</b>	Molecular and Cellular Biology	35
	Classification, Heredity, and Evolution	25
	Organisms, Populations, and Ecosystems	40

**Table 7: FCAT Writing**

The writing assessment is administered to students in grades 4, 8, and 10. It provides one prompt for each grade to which students are expected to draft a response according to a specific purpose (mode). The student response should integrate the writing elements of **focus**, **organization**, **support**, and **conventions**. The possible modes of writing used at each grade are presented in the table below.

Grade	Narrative <i>Writing to tell a story</i>	Expository <i>Writing to explain</i>	Persuasive <i>Writing to convince</i>
4	✓	✓	
8		✓	✓
10		✓	✓

#### IV. Reading Passages

Proposed reading passages are reviewed by Florida educators for quality and grade-level appropriateness. Criteria for this review can be found in the *FCAT 2.0 Reading Test Item Specifications*. A review is also conducted by a committee of Florida citizens to ensure that the passages are free of bias or cultural insensitivity.

**Table 8: Length of FCAT 2.0 Reading Passages**

Grade	Number of Words per Passage	
	Range	Average
3	100–700	500
4	100–900	500
5	200–1000	600
6	200–1100	700
7	300–1100	700
8	300–1200	700
9	300–1400	900
10	300–1500	1000

**Table 9: Reading Passage Types and Percentage for FCAT 2.0 Reading**

**Literary passages** provide entertainment or inspiration and include fiction, nonfiction, poetry, and drama.

**Informational passages** are subject-matter centered and the language may be used to solve problems, raise questions, provide information, or present new ideas. The context of these passages includes everyday life outside of the classroom.

Grade	Literary Text	Informational Text
3	60%	40%
4-6	50%	50%
7-8	40%	60%
9-10	30%	70%

## V. Cognitive Complexity

FCAT, FCAT 2.0, and EOC assessment items are classified using a model with origins in the works of Dr. Norman Webb<sup>1</sup> on depth of knowledge and the cognitive classification system used for the National Assessment of Educational Progress (NAEP). With this system, items are classified on the cognitive demand inherent in the test item, not on assumptions about the student's approach to the item.

Low-complexity items rely heavily on recall and recognition. Moderate-complexity items require more flexible thinking and may require informal reasoning or problem solving. High-complexity items are written to elicit analysis and abstract reasoning. Tables 10-12 and 19 present the range for the percentage of raw-score points by cognitive complexity level on each FCAT, FCAT 2.0, and EOC assessment.

**Note:** Although a table is not included for FCAT Writing, the FCAT Writing prompt is a high cognitive complexity performance task administered at grades 4, 8, and 10.

**Table 10: Percentage of Points by Cognitive Complexity Level for FCAT 2.0 Reading Assessments**

Grade	Low	Moderate	High
3	25–35	50–70	5–15
4	20–30	50–70	10–20
5-7	15–25	50–70	15–25
8-9	10–20	50–70	20–30
10	10–20	45–65	25–35

<sup>1</sup> Webb, Norman L. and others. "Web Alignment Tool" 24 July 2005. Wisconsin Center of Educational Research. University of Wisconsin-Madison. 2 Feb. 2006. <http://www.wcer.wisc.edu/WAT/index.aspx>.

**Table 11: Percentage of Points by Cognitive Complexity Level for FCAT 2.0 and EOC Mathematics Assessments**

Grade	Low	Moderate	High
3-4	25-35	50-70	5-15
5-8	10-20	60-80	10-20
Algebra 1	10-20	60-80	10-20
Geometry	10-20	60-80	10-20

**Table 12: Percentage of Points by Cognitive Complexity Level for FCAT 2.0 Science and EOC Assessments**

Grade	Low	Moderate	High
5	10-20	60-80	10-20
8	10-20	60-80	10-20
Biology 1	10-20	60-80	10-20

## VI. Test Length and Item/Prompt Types

**Table 13: Duration of Test**

*The table below displays the number of minutes allowed for the 2012 regular test takers. With the exception of FCAT Writing, which is administered in one session, all tests are administered in two sessions.*

Grade	Reading	Mathematics	Science	Writing
3	140	140		
4	140	140		45
5	140	140	160	
6	140	140		
7	140	140		
8	140	140	160	45
9	140			
10	140			45
Algebra 1		160		
Geometry		160		
Biology 1			160	

**Table 14: Length of Tests**

*This table provides an approximate range for the number of items on each test.*

Grade	Reading	Mathematics	Science	Writing
3	50–55	50–55		
4	50–55	50–55		1 prompt
5	50–55	50–55	60–66	
6	50–55	50–55		
7	50–55	50–55		
8	50–55	60–65	60–66	1 prompt
9	50–55			
10	50–55			1 prompt
<b>Algebra 1</b>		60–65		
<b>Geometry</b>		60–65		
<b>Biology 1</b>			60–66	

Note: Approximately 6–10 items on all of the tests listed above are experimental (field test) and are included in the ranges above but are not included in students' scores.

**Table 15: Item Types and Numbers**

*This table gives ranges for the approximate number of items by item type.*

Grade	Reading	Mathematics	Science	Writing
3	50–55 MC	50–55 MC		
4	50–55 MC	35–40 MC 10–15 GR		1 prompt
5	50–55 MC	35–40 MC 10–15 GR	60–66 MC	
6	50–55 MC	35–40 MC 10–15 GR		
7	50–55 MC	35–40 MC 10–15 GR		
8	50–55 MC	35–40 MC 20–25 GR	60–66 MC	1 prompt
9	50–55 MC			
10	50–55 MC			1 prompt
<b>Algebra 1</b>		35–40 MC 20–25 FR		
<b>Geometry</b>		35–40 MC 20–25 FR		
<b>Biology 1</b>			60–66 MC	

**Key**

GR – Gridded-Response  
MC – Multiple-Choice  
FR – Fill-in Response

## VII. Test Design Information for Retake Assessments

FCAT/FCAT 2.0 Retake assessments are administered to students and adults who have not passed the grade 10 assessments required for graduation. Students may also retake Florida EOC Assessments if they need to earn a passing score for course credit. Retake test administrations occur in the spring and fall for the FCAT and FCAT 2.0 each year. Tables 16-22 provide test design information for the FCAT 2.0 Reading and FCAT Reading and Mathematics Retake assessments.

**Table 16: Content Categories for Reading and Mathematics Retakes**

Grade	Test	Category	Percentage
11 - Adult	FCAT 2.0 Reading	Vocabulary	15-25
		Reading Application	20-30
		Literary Analysis: Fiction and Nonfiction	20-30
		Informational Text and Research Process	25-35
11 – Adult	FCAT Reading	Words and Phrases in Context	15-20
		Main Idea, Plot, and Purpose	20-50
		Comparisons and Cause/Effect	10-25
		Reference and Research	20-40
11 – Adult	FCAT Mathematics	Number Sense, Concepts, and Operations	17
		Measurement	17
		Geometry and Spatial Sense	25
		Algebraic Thinking	25
		Data Analysis and Probability	17

**Table 17: Length of Reading Retake Passages**

Number of Words per Passage		
Test	Range	Average
FCAT 2.0 Reading	300-1500	1000
FCAT Reading	300-1700	1000

**Table 18: Reading Passage Types and Percentages for the Reading Retakes**

**Literary passages** provide entertainment or inspiration and include fiction, nonfiction, poetry, and drama.

**Informational passages** are subject-matter centered and the language may be used to solve problems, raise questions, provide information, or present new ideas. The context of these passages includes everyday life outside of the classroom.

Test	Literary Text	Informational Text
FCAT 2.0 Reading	30%	70%
FCAT Reading	30%	70%

**Table 19: Percentage of Points by Cognitive Complexity Level for Retakes**

Test	Low	Moderate	High
FCAT 2.0 Reading Retake	10-20	45-65	25-35
FCAT Reading Retake	10-20	45-65	25-35
FCAT Mathematics Retake	10-20	50-70	20-30

**Table 20: Duration of Test for Retakes**

Test	Duration
FCAT 2.0 Reading Retake	2 sessions; each session up to one-half of one school day
FCAT Reading Retake	Up to one school day
FCAT Mathematics Retake	Up to one school day

**Table 21: Length of Retakes**

Test	Reading	Mathematics
FCAT 2.0 Retake	50-55	
FCAT Retake	50-55	55-60

Note: All items on the FCAT Mathematics Retake and FCAT Reading Retake assessments contribute to students' scores. Approximately 6-10 items on the FCAT 2.0 Reading Retake are experimental (field test) and are included in the range above but are not included in students' scores.

**Table 22: Item Types and Numbers**

Test	Reading	Mathematics
FCAT 2.0 Retake	50-55 MC	
FCAT Retake	50-55 MC	30-35 MC 20-25 GR

Key
GR – Gridded-Response
MC – Multiple-Choice