

Grades 5 and 8 FCAT 2.0 Science
Biology 1 End-of-Course Assessment
Geometry End-of-Course Assessment
Standard Setting

Rule Development Workshops

October 15, 16, and 18, 2012

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Florida Department of Education

FCAT 2.0

EOC

Purpose of this Rule Development Workshop

- Express the Department's intent:
 - To develop a rule for consideration by the State Board of Education
 - To establish Achievement Levels for FCAT 2.0 Science, Biology 1 End-of-Course (EOC) Assessment, and Geometry EOC Assessment

- Obtain input from interested audiences:
 - General input about setting the Achievement Levels
 - Specific feedback on Achievement Level recommendations

Today's Topics

- Background on the assessments
- Review the standard-setting process
- Review the recommendations
- Review the impact data
- Request feedback from you

Transition Schedule

Type of Assessment	Assessment Area	Year Administered to Students			
		2011-12	2012-13	2013-14	2014-15
FCAT	FCAT Writing	Gr 4, 8, 10			
FCAT 2.0	FCAT 2.0 Writing		Gr 4, 8, 10	Gr 4, 8, 10	
	FCAT 2.0 Reading	Gr 3-10	Gr 3-10	Gr 3-10	
	FCAT 2.0 Mathematics	Gr 3-8	Gr 3-8	Gr 3-8	
	FCAT 2.0 Science	Gr 5, 8	Gr 5, 8	Gr 5, 8	Gr 5, 8
End-of-Course Assessments	Algebra 1	In Course	In Course	In Course	
	Geometry	In Course	In Course	In Course	
	Biology 1	In Course	In Course	In Course	In Course
	US History		In Course	In Course	In Course
	Civics (Middle School)			In Course	In Course
Partnership for Assessment of Readiness for College and Careers (PARCC)	English Language Arts				Gr 3-11
	Mathematics				Gr 3-8
	High School Math EOCs (Algebra, Geometry, Algebra 2)				In Course

FCAT 2.0 Science Overview

- Grades 5 and 8
- Increased content rigor — aligned to the Next Generation Sunshine State Standards (NGSSS)
- Paper-based administration
- Administered in two 80-minute sessions
 - Grade 5 students take the first session one day and the second session the following day
 - Grade 8 students take both sessions on the same day
- Up to 66 multiple-choice items

FCAT 2.0 Science: Examples of Increased Rigor

- Students are asked more often to:
 - build on knowledge and vocabulary from previous years.
 - be able to think critically and extend their understanding to novel situations in science.
 - completely understand the concepts in the benchmarks and master skills, such as predicting, citing evidence, selecting models, analyzing, and concluding.

Biology 1 EOC Assessment Overview

- Aligned to the Next Generation Sunshine State Standards Biology 1 course description
- Computer-based test with paper-based test accommodations
- Administered in one 160-minute session with a scheduled 10-minute break after 80 minutes. Students can continue working after the time allotted for testing but cannot exceed the length of a normal school day.
- Up to 66 multiple-choice items
- Students participate in a practice test to become familiar with the test platform
- Periodic table of elements provided

Geometry EOC Assessment Overview

- Aligned to the Next Generation Sunshine State Standards Geometry course description
- Computer-based test with paper-based test accommodations
- Administered in one 160-minute session with a scheduled 10-minute break after 80 minutes. Students can continue working after the time allotted for testing but cannot exceed the length of a normal school day.
- Up to 65 items:
 - Multiple-choice and fill-in response items
 - No performance tasks
- Students participate in a practice test to become familiar with the test platform
- Reference sheet provided

FCAT 2.0/EOC are Standards-Based Tests

- Based on Florida's content standards (Next Generation Sunshine State Standards)
- Students' scores are in comparison to achievement standards – the criteria (Criterion-Referenced Test)
- Used to measure how well students have learned the content assessed
- Used to measure the teaching and learning of important content in Florida's schools

When is Standard Setting Necessary?

- Standard setting becomes necessary whenever any of the following occur:
 - New test
 - Curriculum updates
 - Blueprint changes
 - Achievement Level Description changes
- Next Generation Sunshine State Standards – new content standards

Why Have Standards?

- To define what students should know and be able to do
- To clearly communicate to parents and teachers what students should know and be able to do
- To improve teaching and learning
- To develop a society able to compete in a global economy
- Important!
 - Standards define what we want to achieve.
 - Standards do not describe our current status.

Types of Standards

- Content Standards - Define the “what”
 - Next Generation Sunshine State Standards
 - Common Core State Standards
- **Performance Standards** - Define how much
 - **Achievement-Level Standards**
 - **Graduation Requirement**
- Accountability Standards
 - School Grading Criteria

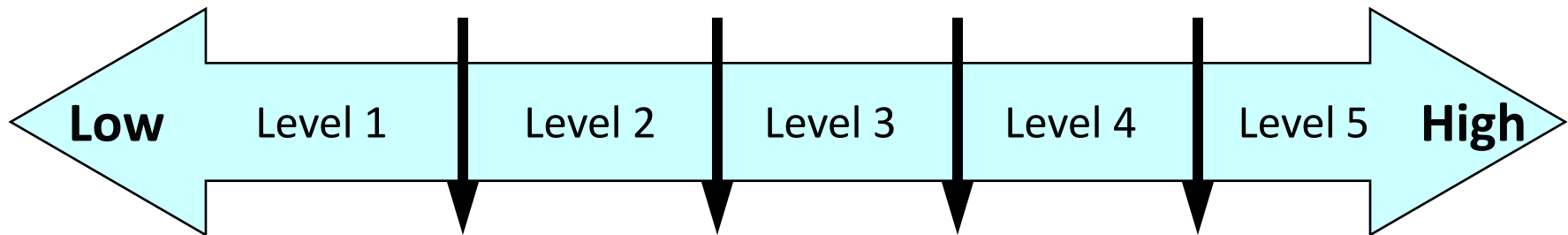
Setting Achievement Standards - or “Cut Scores”

- A process that helps provide meaning to test scores
 - Provides a frame of reference for interpreting test scores
 - Most relevant when applied to tests based on defined content standards (criterion-referenced tests)
- The process includes: Deriving levels of performance on educational ... assessments, by which decisions or classifications ... will be made. (Cizek, 2007)
 - Mapping content to student achievement
 - Making judgments that are both qualitative (content) and quantitative (test scores)
 - Relating the NGSSS to FCAT 2.0/EOC scores

Achievement Levels

- There are five Achievement Levels
- Requires the setting of four Achievement Level cuts

Five Achievement Levels, Four Cut Points



We've Done This Before...

1998:

- Reading and Mathematics Achievement Standards approved for grades 4, 5, 8, and 10

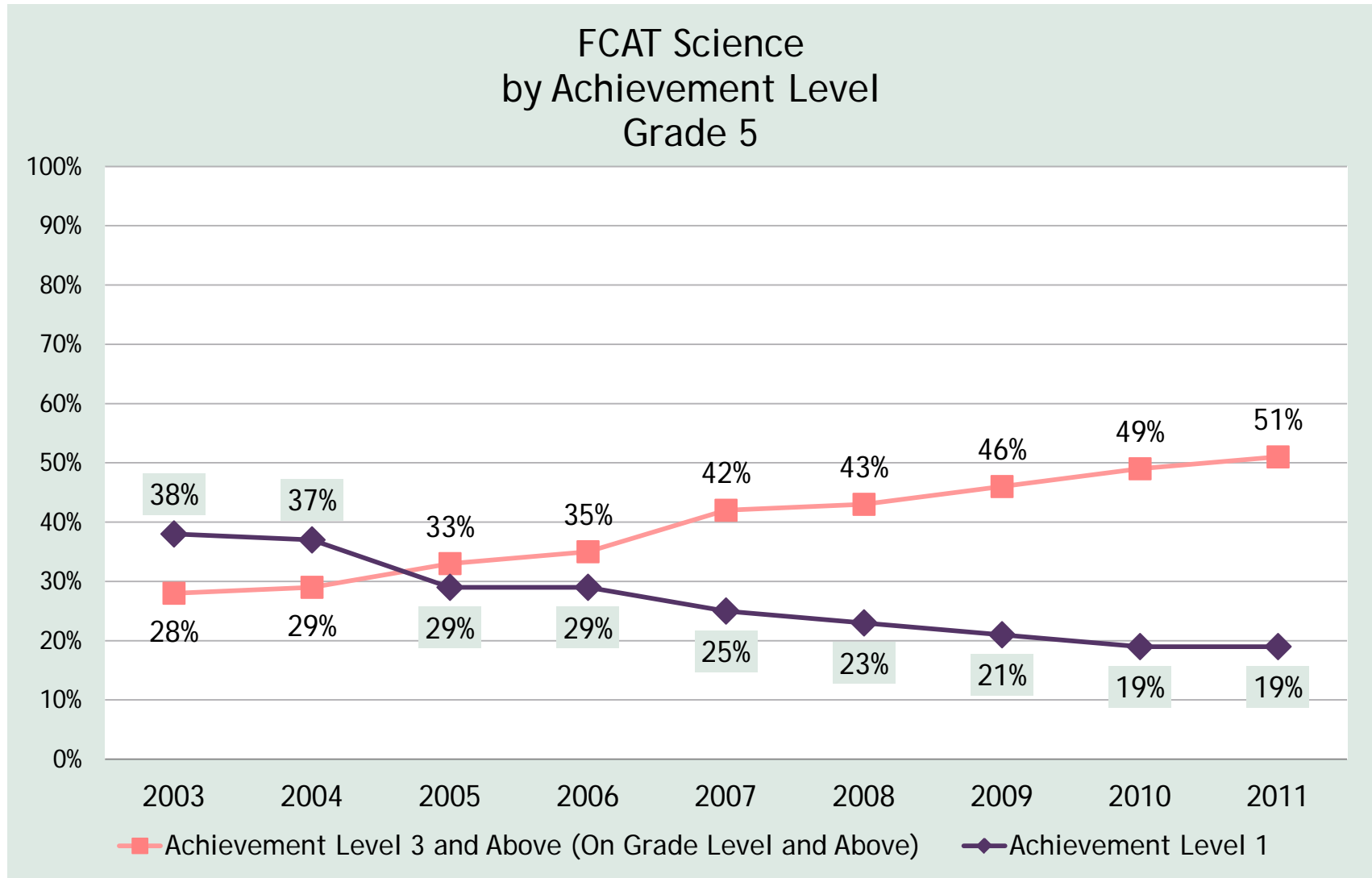
2001:

- Reading and Mathematics Achievement Standards approved for grades 3-10
- Grade 10 passing scores established

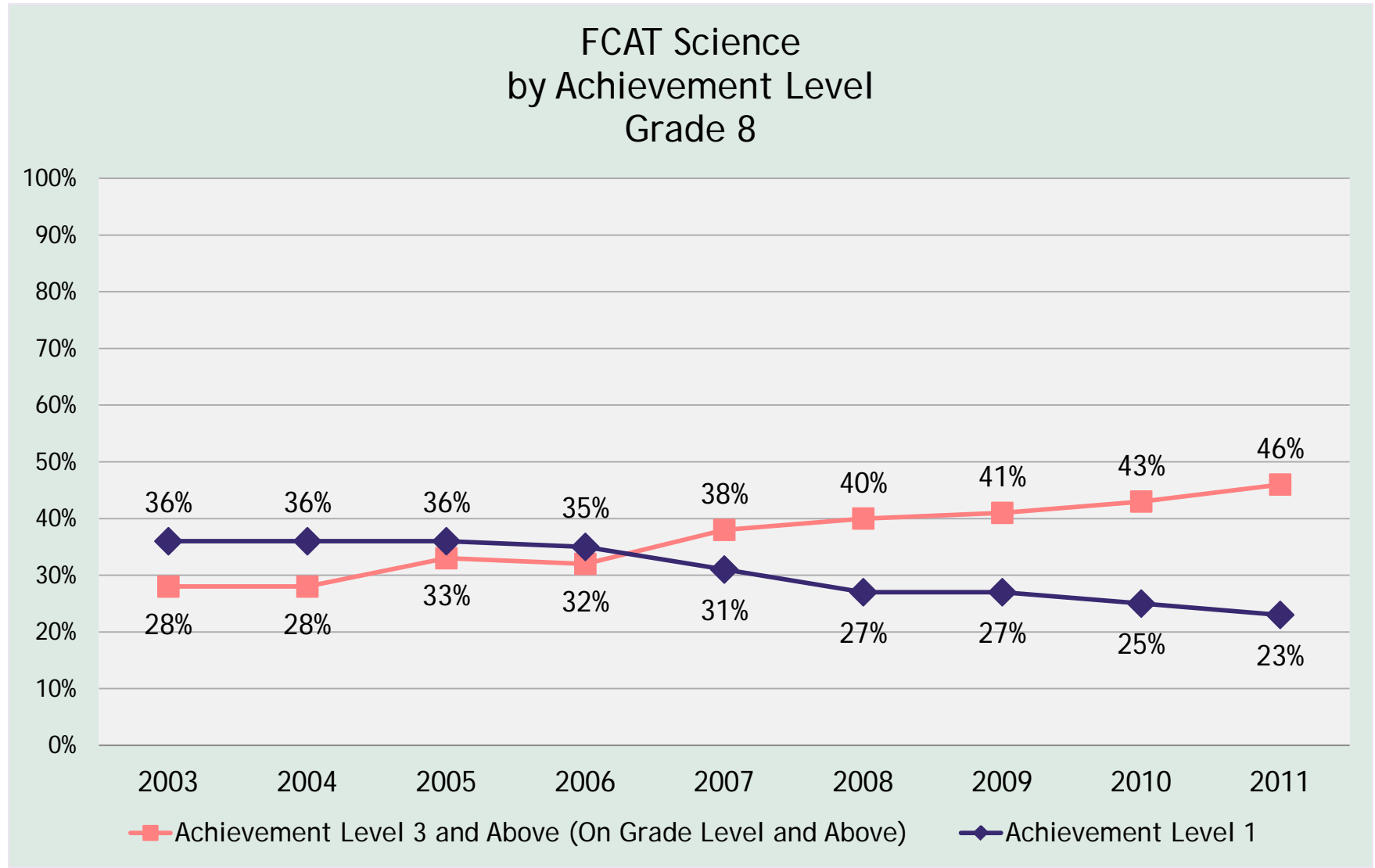
2011:

- FCAT 2.0 Reading (grades 3-10) and Mathematics (3-8) Achievement Standards approved
- Algebra 1 EOC Achievement Standards approved

Past Experience - FCAT Science Standards



Past Experience - FCAT Science Standards



Standard-Setting Process

1. Develop a policy definition describing the meaning of each Achievement Level
2. Develop Achievement Level Descriptions
3. Convene a standard-setting panel composed of educators to recommend cut scores
4. Convene a business and policy leader reactor panel to review the recommended cut scores
5. Conduct rule development workshops and collect public feedback
6. Obtain State Board of Education approval of cut scores with public input

FCAT 2.0/EOC Assessment Policy Definitions

Achievement Level	Policy Definition
Level 5	Students at this level demonstrate mastery of the most challenging content of the <i>Next Generation Sunshine State Standards</i> .
Level 4	Students at this level demonstrate an above satisfactory level of success with the challenging content of the <i>Next Generation Sunshine State Standards</i> .
Level 3	Students at this level demonstrate a satisfactory level of success with the challenging content of the <i>Next Generation Sunshine State Standards</i> .
Level 2	Students at this level demonstrate a below satisfactory level of success with the challenging content of the <i>Next Generation Sunshine State Standards</i> .
Level 1	Students at this level demonstrate an inadequate level of success with the challenging content of the <i>Next Generation Sunshine State Standards</i> .

Achievement Level Descriptions (ALDs)

- Explain what a typical student at each Achievement Level should know and be able to do for every grade level and subject
- Developed by committees of educators and then posted for public review and comment

Educator Panel: September 18-21

- Approximately 80 teachers and district-level administrators with subject-area expertise and expertise with special populations
- Panel represented Florida's diversity, including:
 - Gender
 - Ethnicity
 - District Size

Standard-Setting Process - Educator Panel

- Reviewed and discussed Achievement Level Descriptions (ALDs)
- Panelists “took the test”
- Participated in standard-setting training
- Practiced judgmental procedure
- Provided independent judgments in multiple rounds

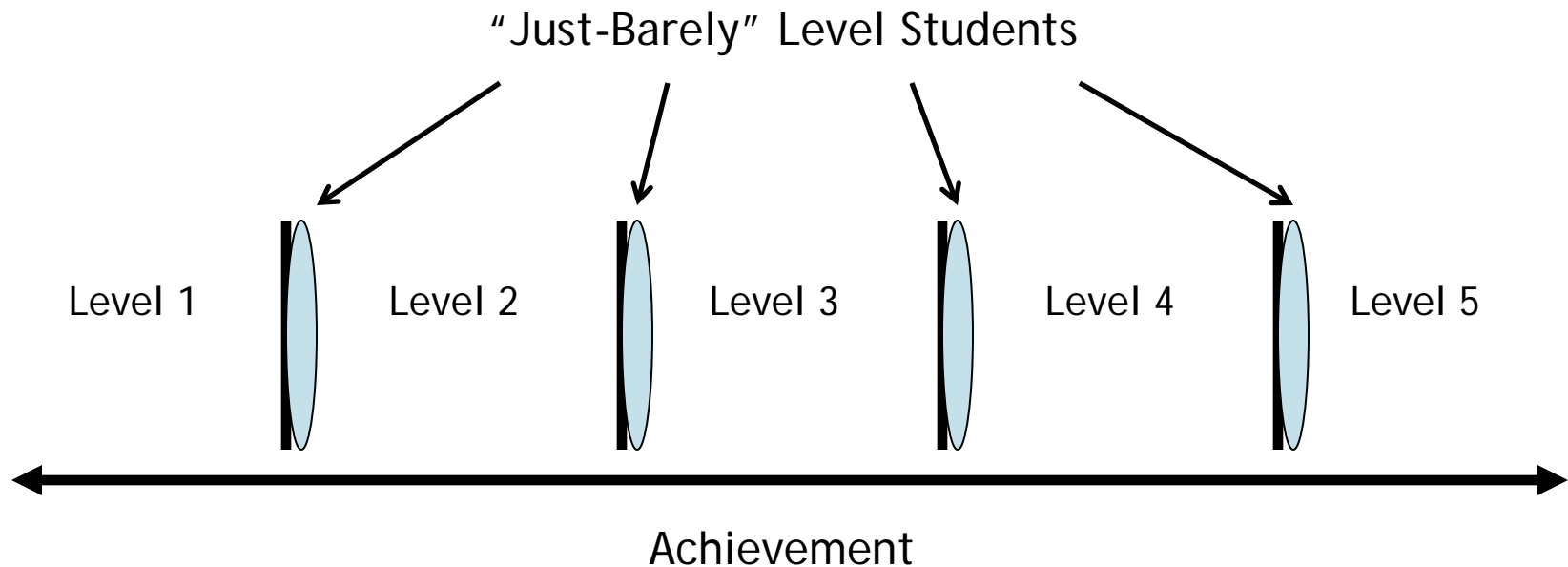
Modified Angoff Method

The judgmental process (by item)

- Review the Achievement Level Descriptions
- Evaluate the knowledge and skills needed to respond correctly to the item
- Judge the percentage of students expected to respond correctly

The “Just-Barely” Test Taker

- Borderline in terms of Achievement Level
- Just barely meets criteria to be classified into the Achievement Level



Reactor Panel: September 27-28

- Convened a group of diverse stakeholders from across Florida
- Provided feedback to the Department on the outcomes of the Educator Panel

2012 Standard Setting Reactor Panel Committee List

Name	Company/District/Employer	County
Lisa Chutjian	Take Stock in Children	Dade
Kamela Patton	Collier County Public Schools	Collier
Sasha Jarrell	Northwest Florida State College	Okaloosa
Paul Cottle	Florida State University	Leon
Nyleen Rodriguez	George Jenkins High School	Polk
Rosanne Arvin	Clay County District Schools	Clay
Ted Willard	National Science Teachers Association	Virginia
Mike Vitale	Daytona State College	Volusia
Joie Cadle	Orange County School Board	Orange
Lisa Kunze	St. Johns County School Board	St. Johns
Denisse R. Thompson	University of South Florida	Hillsborough
Allan Phipps	FAU Laboratory School District	Broward
Melissa Kicklighter	Parent of Duval County Public School Student	Duval
Morgan Pearson	2012 Graduate-Matanzas High School	Flagler
Pam Burtnett	Florida Education Association	Lake
Susan Moxley	Lake County Schools	Lake
Deborah Leach-Scampavia	The Scripps Research Institute	Palm Beach
Scott Southwell	Boeing Corporation	Brevard
David Arnold	Big Brothers Big Sisters Association of Florida	Hillsborough
Lynn Erickson	Gulf Power Company	Escambia

Reactor Panel Review

Considered the following:

- Information and materials from the standard-setting meeting
- Achievement Level Descriptions
- External tests that are commonly administered to Florida students outside of the FCAT 2.0 and EOC Assessment system
 - NAEP, PSAT, SAT, PLAN, and ACT
- Impact data
 - By subject/grade
 - By gender
 - By ethnicity

Reactor Panel: Key Questions

The Reactor Panel considered the following questions:

- Do the impact data for this assessment look reasonable?
- Is this the expected pattern of impact data across grades and between subjects?
- How does the impact data compare to external data?
- Would you move the cut scores higher (higher expectation) or lower (lower expectation)? Why?

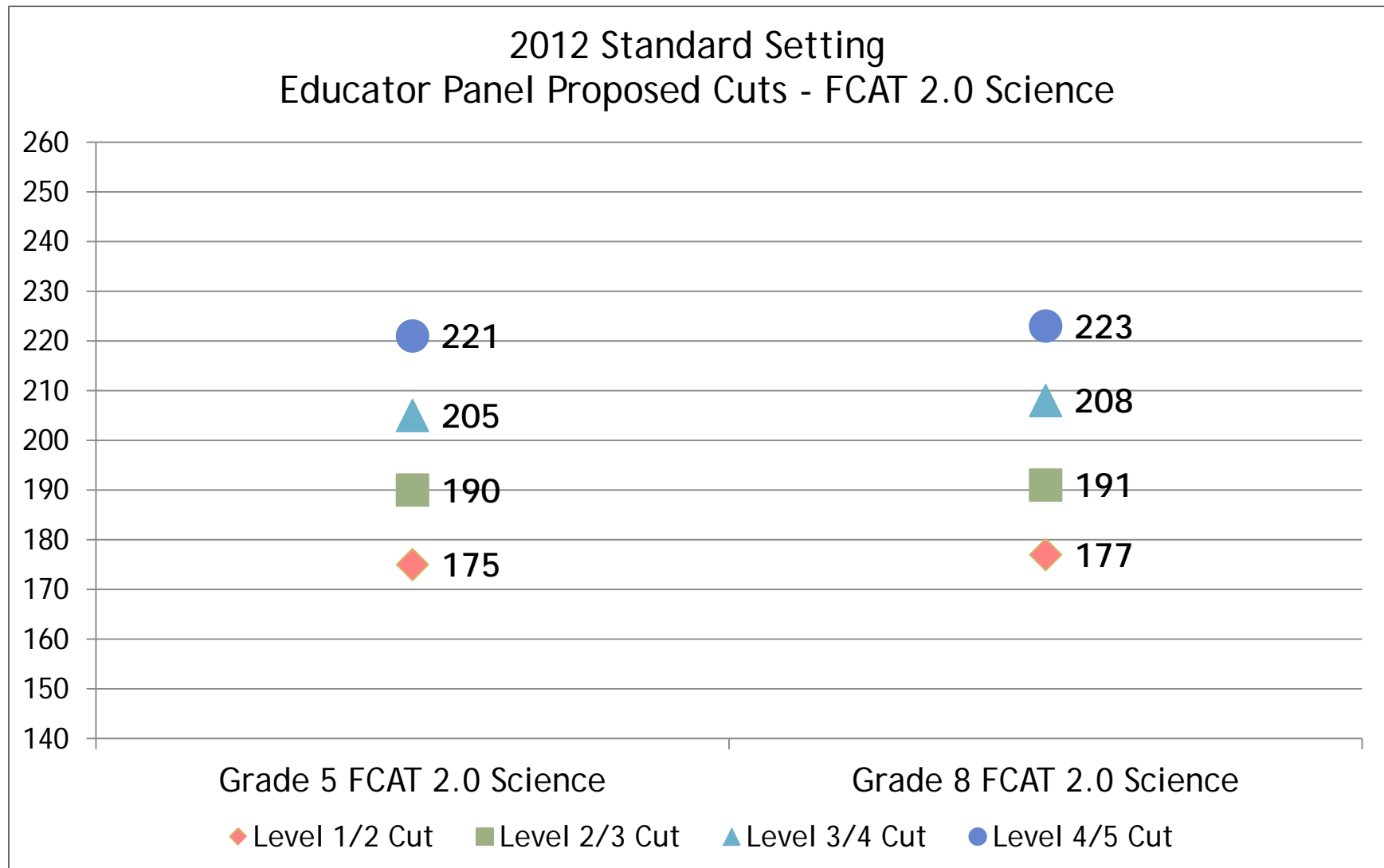
FCAT 2.0 Science and EOC Assessment Scale Score Ranges

Assessments	Scale
FCAT 2.0 Science	140-260
EOC Assessments	325-475

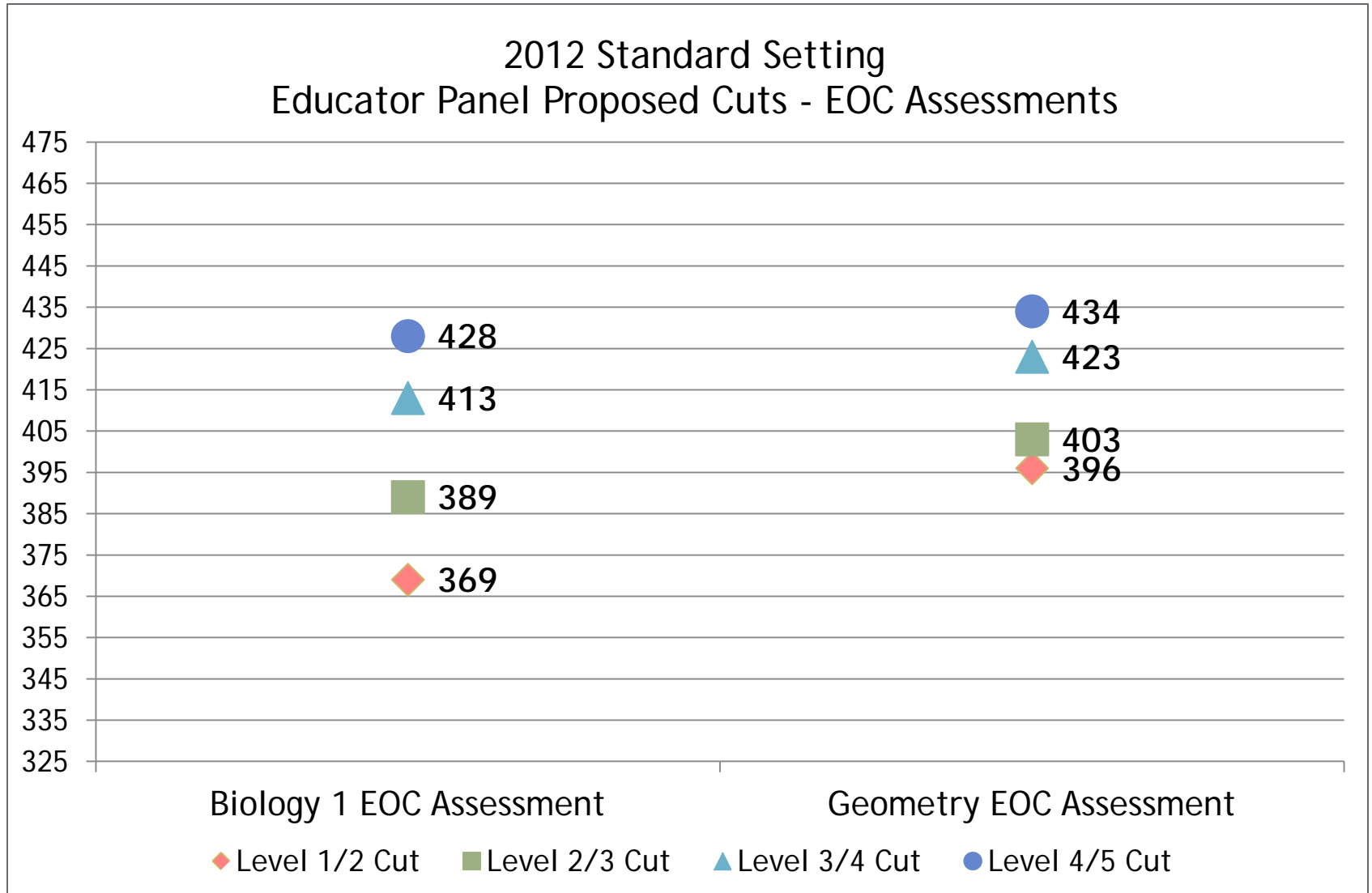
Educator Panel Recommendations and Impact Data

The following slides represent recommendations from the Educator Panel. This panel was asked to make **content-based judgments**.

Educator Panel Proposed Scale Score Cuts, 9/21/2012



Educator Panel Proposed Scale Score Cuts, 9/21/2012



Educator Panel Proposed Scale Score Cuts, 9/21/2012

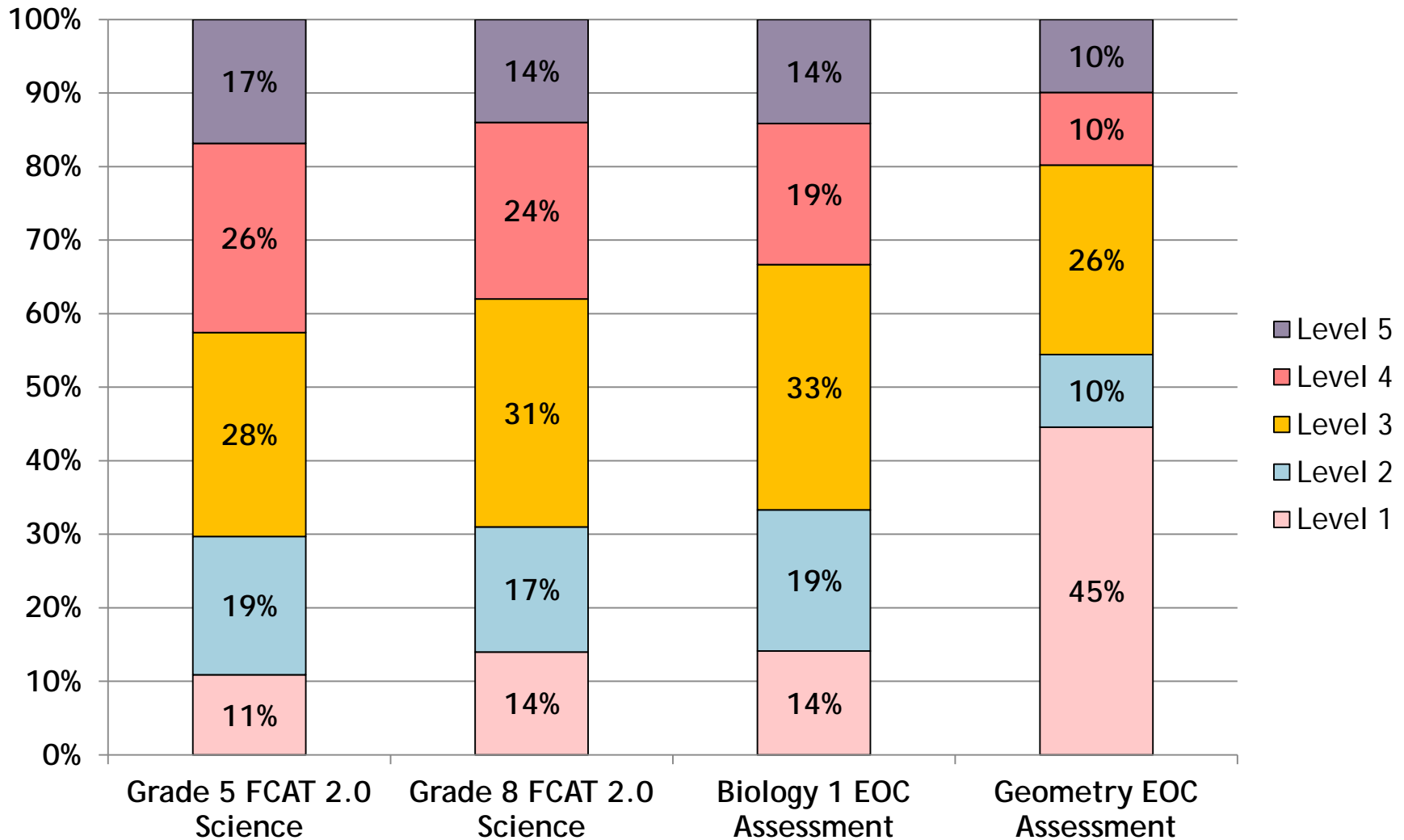
Cut Point	Grade 5 FCAT 2.0 Science		Grade 8 FCAT 2.0 Science		Biology 1 EOC Assessment		Geometry EOC Assessment	
	Scale Score Cuts	Judgment Variation* +/- 2 SE	Scale Score Cuts	Judgment Variation* +/- 2 SE	Scale Score Cuts	Judgment Variation* +/- 2 SE	Scale Score Cuts	Judgment Variation* +/- 2 SE
Level 1/2 Cut	175	163-187	177	163-191	369	341-397	396	384-408
Level 2/3 Cut	190	178-202	191	179-203	389	369-409	403	391-415
Level 3/4 Cut	205	193-217	208	198-218	413	399-427	423	413-433
Level 4/5 Cut	221	207-235	223	211-235	428	414-442	434	420-448

*Judgment Variation is also referred to as Standard Error of Judgment (SE). These bands were provided to the Reactor Panel as a recommended boundary for their modifications based on standard-setting research and best practices.

Impact Data

- Generated by applying the proposed cut scores to actual student performance from the spring 2012 administration
- Provided to the Educator Panel prior to their final round of judgment
- Used by the Reactor Panel to model scenarios prior to making all judgments

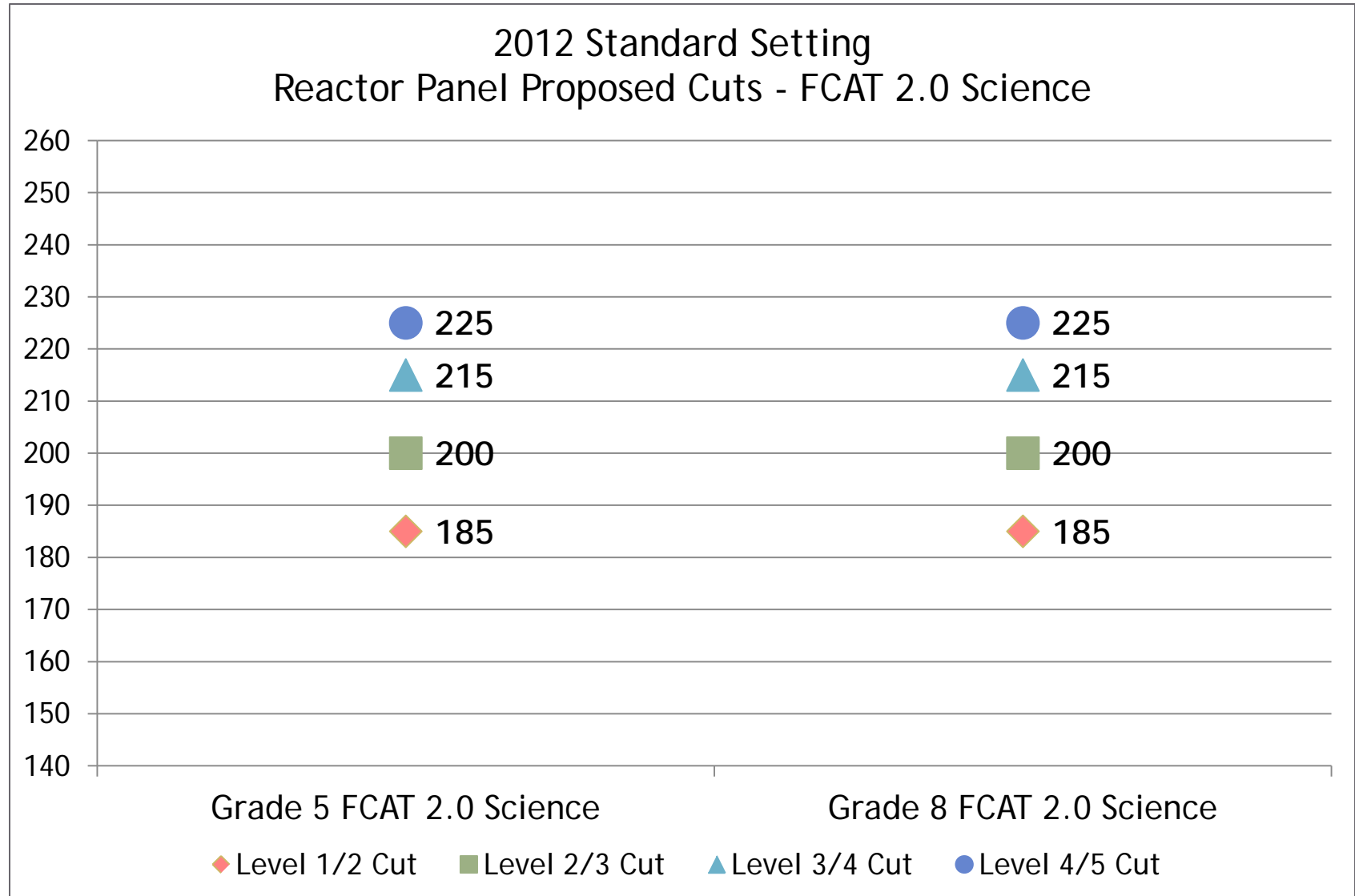
EDUCATOR PANEL: All Students
 Percentage in each Achievement Level
 Impact Data (Based on 2012 Student Performance)



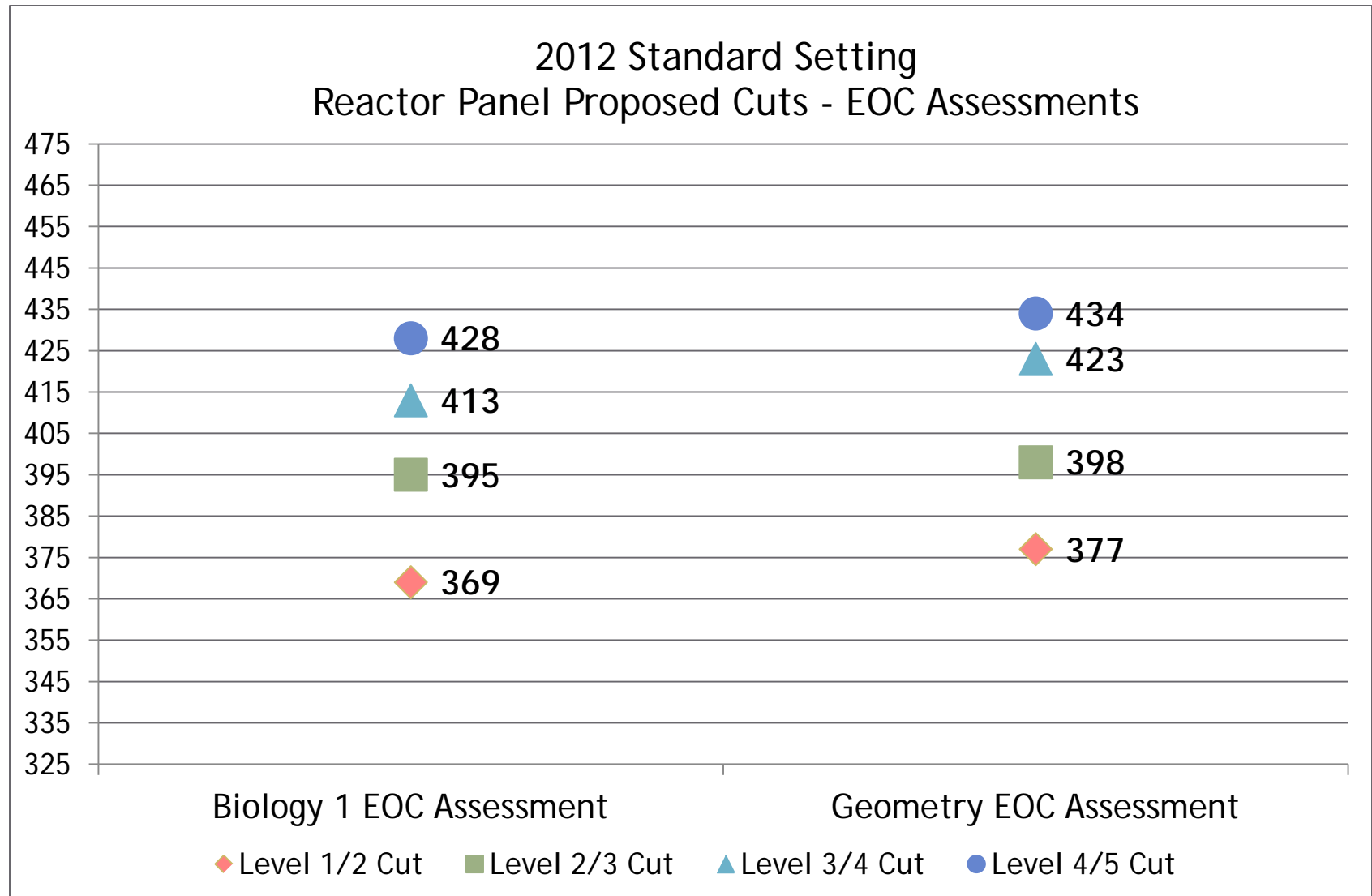
Reactor Panel Recommendations and Impact Data

The following slides represent recommendations from the Reactor Panel. This panel was asked to make judgments based on the **impact data** and on data from **external assessments**.

Reactor Panel Proposed Scale Score Cuts, 9/28/2012



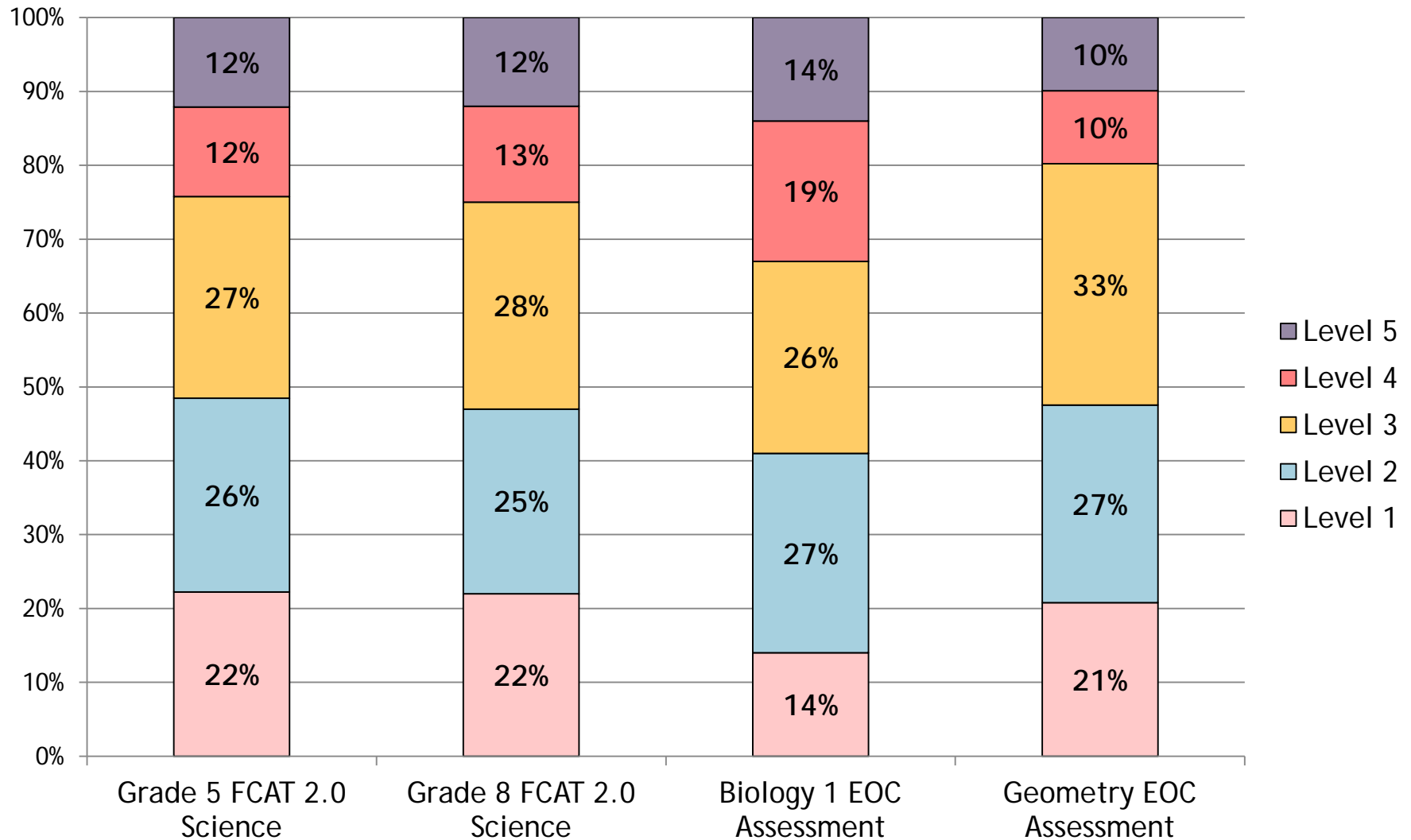
Reactor Panel Proposed Scale Score Cuts, 9/28/2012



Reactor Panel Proposed Scale Score Cuts, 9/28/2012

Cut Point	Committee	Grade 5 FCAT 2.0 Science		Grade 8 FCAT 2.0 Science		Biology 1 EOC Assessment		Geometry EOC Assessment	
		Scale Score Cuts	Judgment Variation +/- 2 SE	Scale Score Cuts	Judgment Variation +/- 2 SE	Scale Score Cuts	Judgment Variation +/- 2 SE	Scale Score Cuts	Judgment Variation +/- 2 SE
Level 1/2 Cut	Educator Panel	175	163-187	177	163-191	369	341-397	396	384-408
	Reactor Panel	185	N/A	185	N/A	369	N/A	377	N/A
Level 2/3 Cut	Educator Panel	190	178-202	191	179-203	389	369-409	403	391-415
	Reactor Panel	200	N/A	200	N/A	395	N/A	398	N/A
Level 3/4 Cut	Educator Panel	205	193-217	208	198-218	413	399-427	423	413-433
	Reactor Panel	215	N/A	215	N/A	413	N/A	423	N/A
Level 4/5 Cut	Educator Panel	221	207-235	223	211-235	428	414-442	434	420-448
	Reactor Panel	225	N/A	225	N/A	428	N/A	434	N/A

REACTOR PANEL: All Students
Percentage in each Achievement Level
Impact Data (Based on 2012 Student Performance)

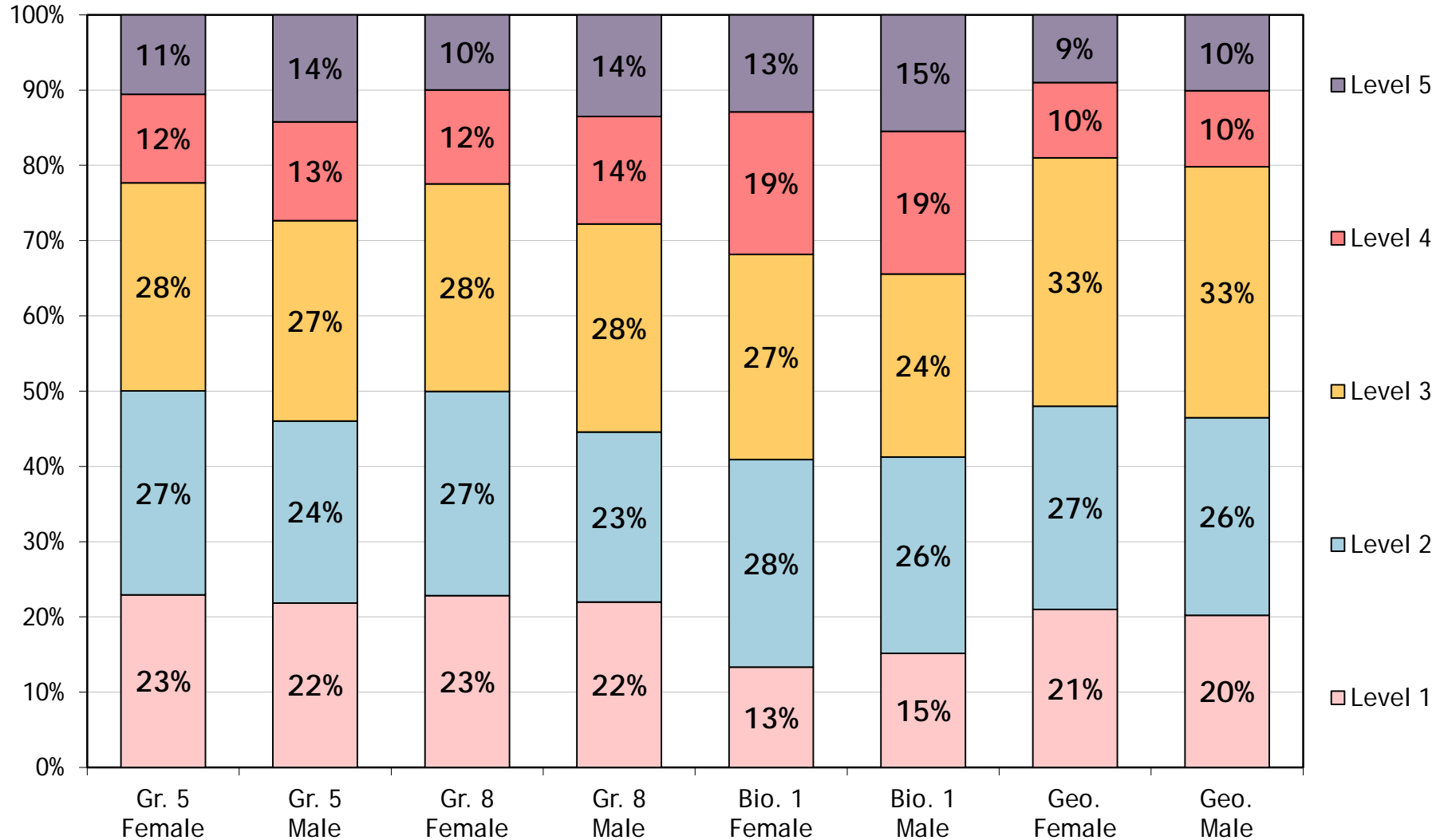


Educator Panel and Reactor Panel Proposed Cuts Reported/ Impact Data: Percentage of Students in each Achievement Level

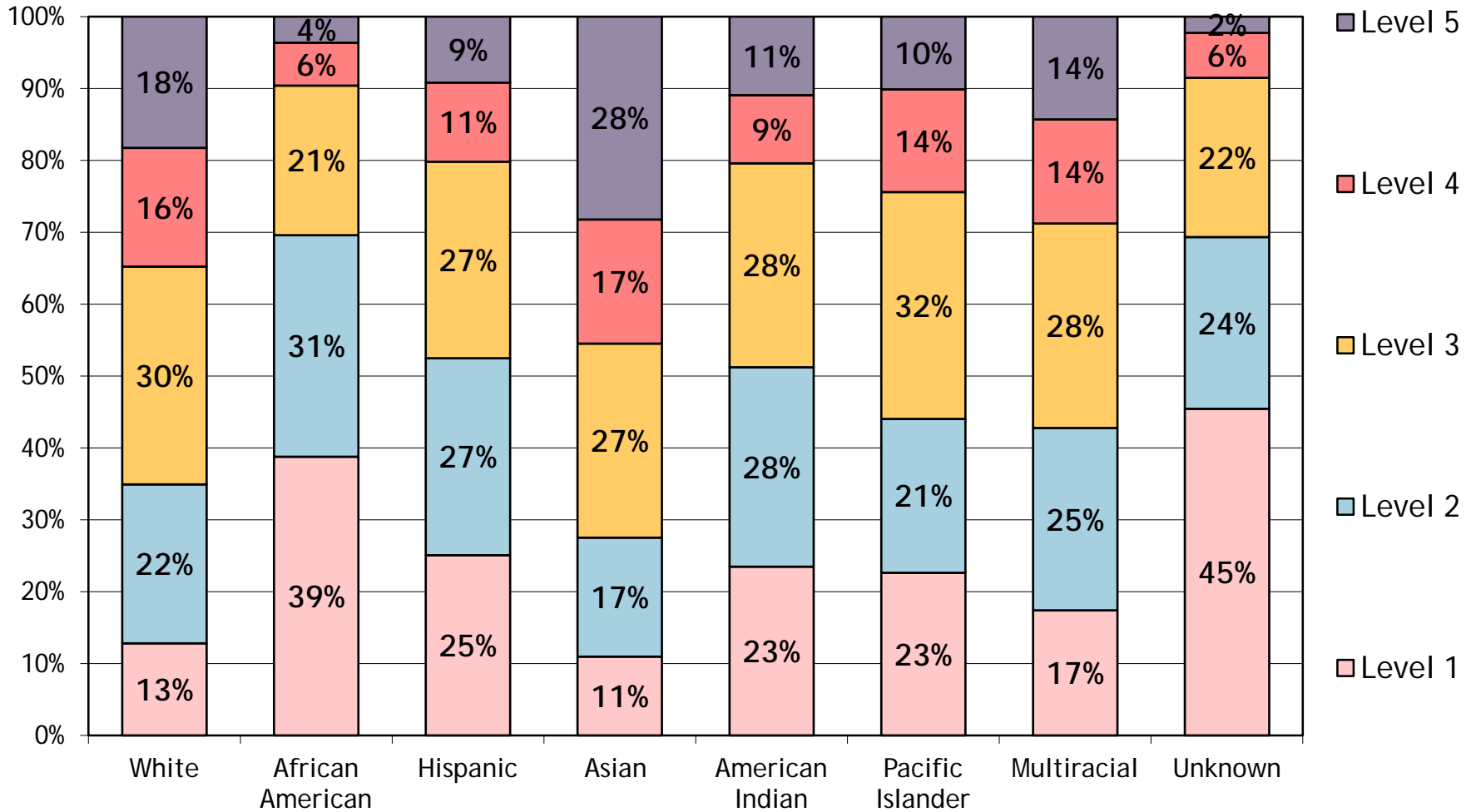
Assessment	Source	Percentage of 2012 Test Takers in Each Achievement Level					
		1	2	3	4	5	≥3
Grade 5 FCAT 2.0 Science	Reported**	20%	29%	33%	12%	6%	51%
	Educator Panel	11%	19%	28%	26%	17%	70%
	Reactor Panel	22%	26%	27%	12%	12%	52%
	Final Rule	TBD					
Grade 8 FCAT 2.0 Science	Reported**	22%	31%	34%	9%	3%	46%
	Educator Panel	14%	17%	31%	24%	14%	69%
	Reactor Panel	22%	25%	28%	13%	12%	53%
	Final Rule	TBD					
Biology 1 EOC Assessment	Reported**	TBD					
	Educator Panel	14%	19%	33%	19%	14%	67%
	Reactor Panel	14%	27%	26%	19%	14%	59%
	Final Rule	TBD					
Geometry EOC Assessment	Reported**	TBD					
	Educator Panel	45%	10%	26%	10%	10%	46%
	Reactor Panel	21%	27%	33%	10%	10%	53%
	Final Rule	TBD					

**Reported in 2012 on the 2011 FCAT Science Scale using equipercntile linking

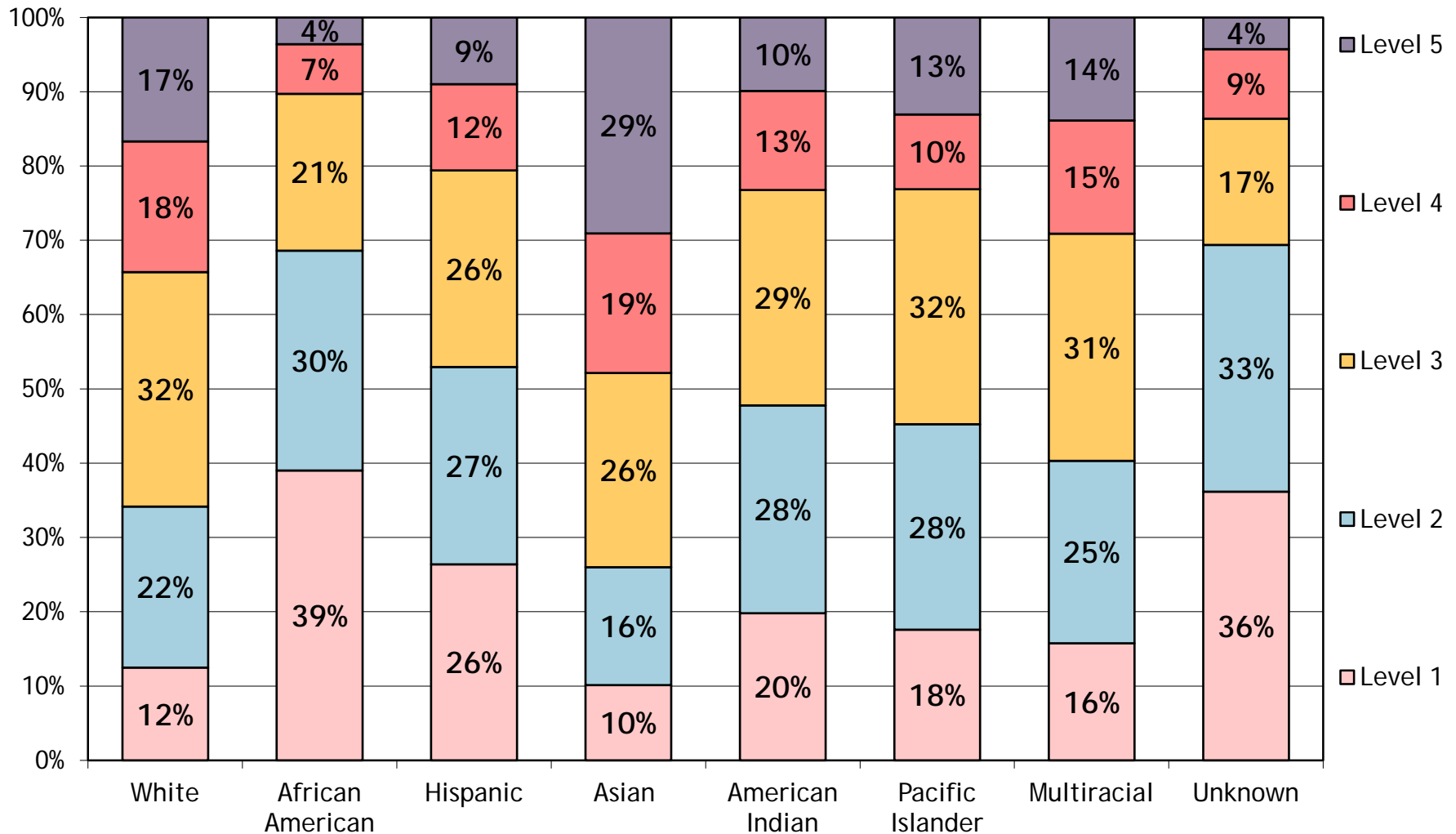
REACTOR PANEL: Female and Male Students
 Percentage in each Achievement Level
 Impact Data: Based on 2012 Student Performance



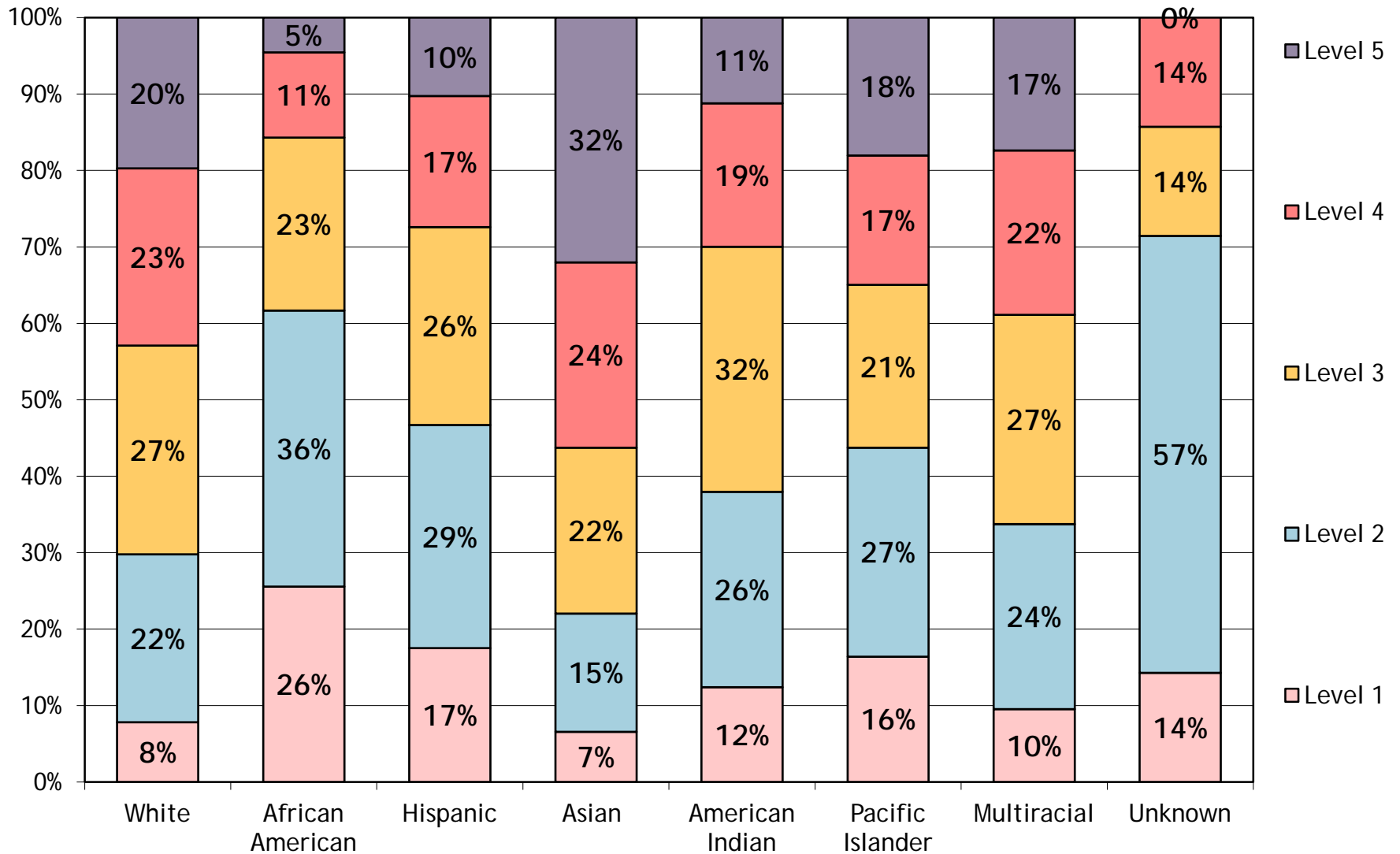
REACTOR PANEL: Grade 5 FCAT 2.0 Science Students by Ethnicity
 Percentage in each Achievement Level
 Impact Data: Based on 2012 Student Performance



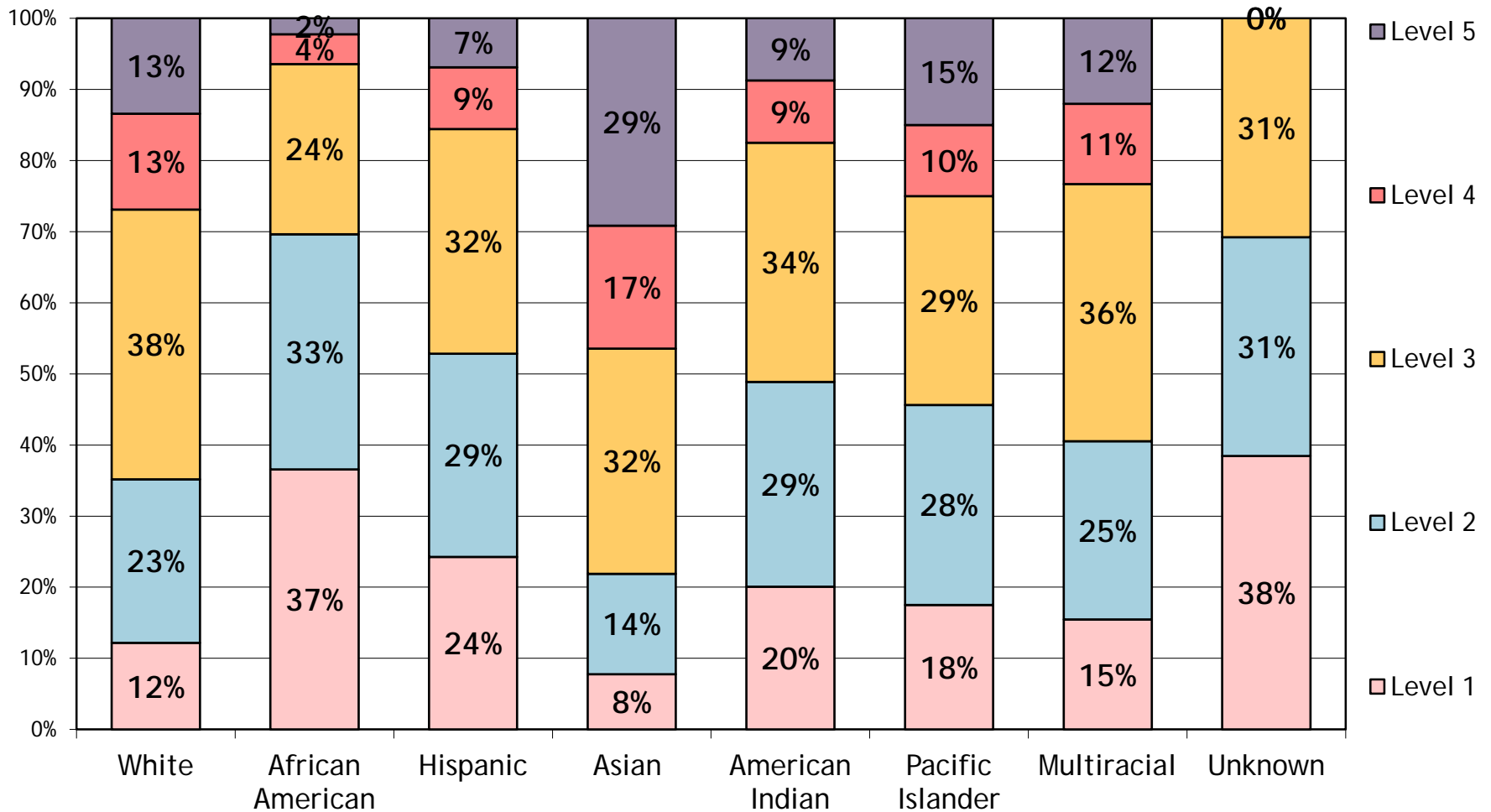
REACTOR PANEL: Grade 8 FCAT 2.0 Science Students by Ethnicity
 Percentage in each Achievement Level
 Impact Data: Based on 2012 Student Performance



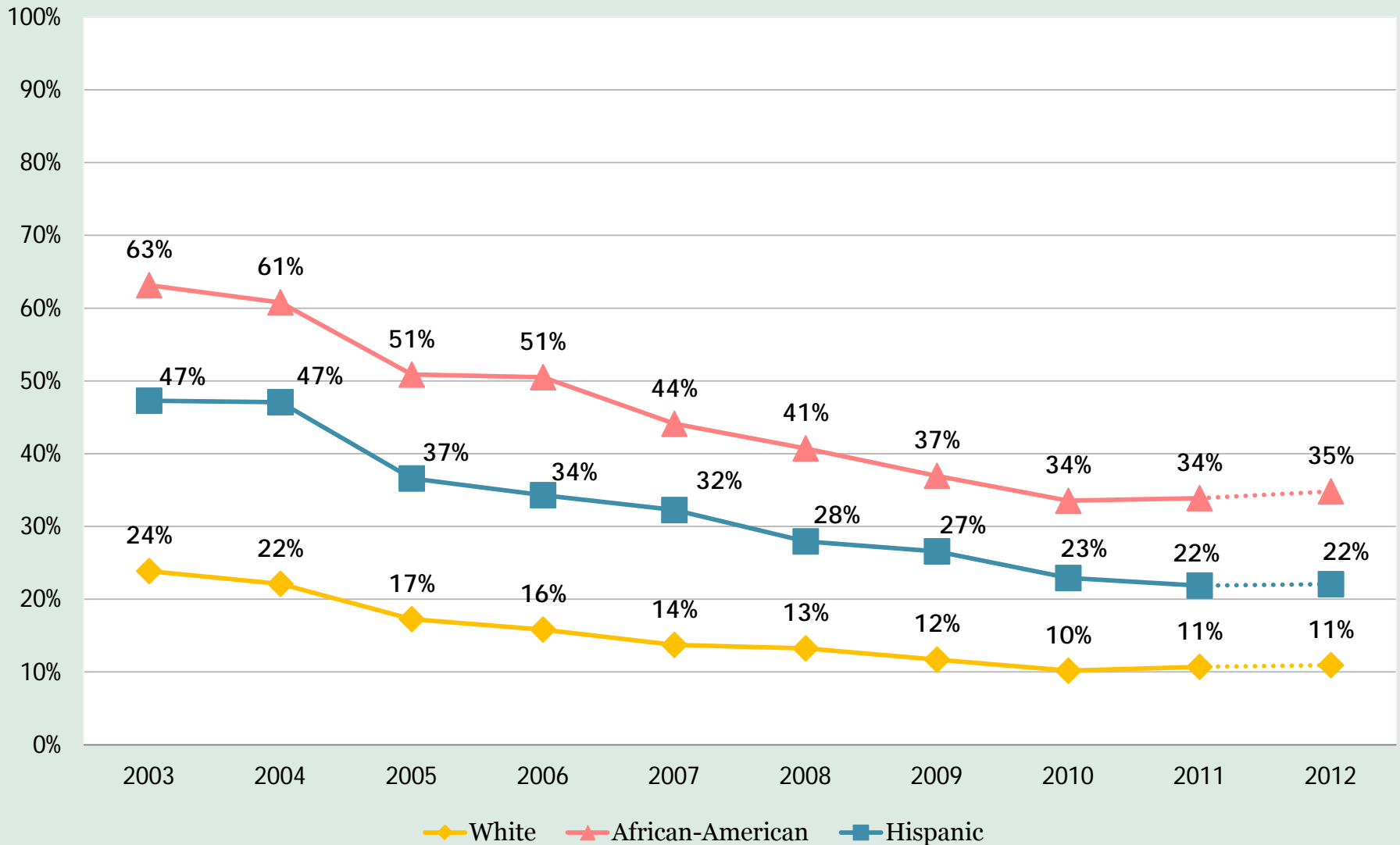
REACTOR PANEL: Biology 1 EOC Students by Ethnicity
 Percentage in each Achievement Level
 Impact Data: Based on 2012 Student Performance



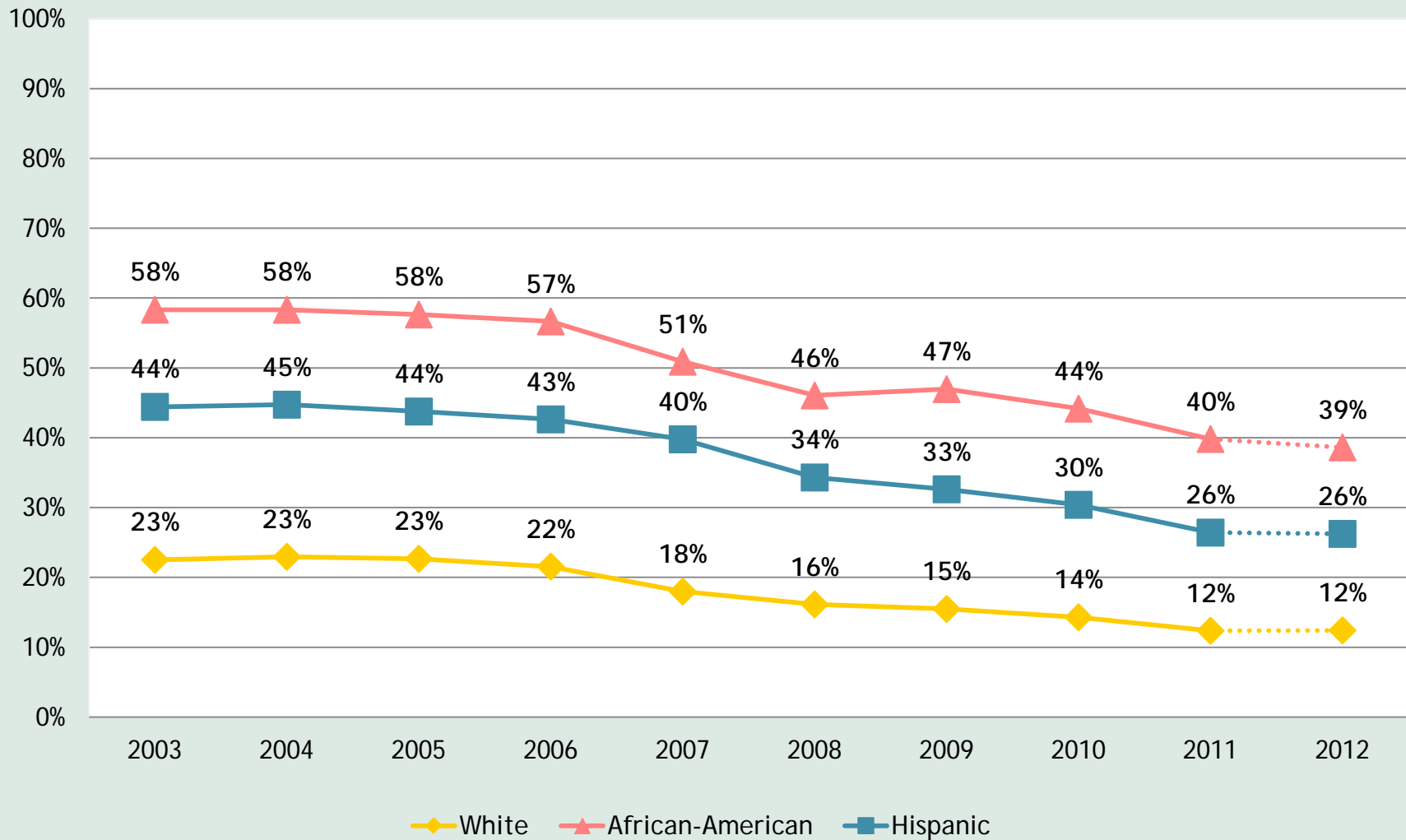
REACTOR PANEL: Geometry EOC Students by Ethnicity
 Percentage in each Achievement Level
 Impact Data: Based on 2012 Student Performance



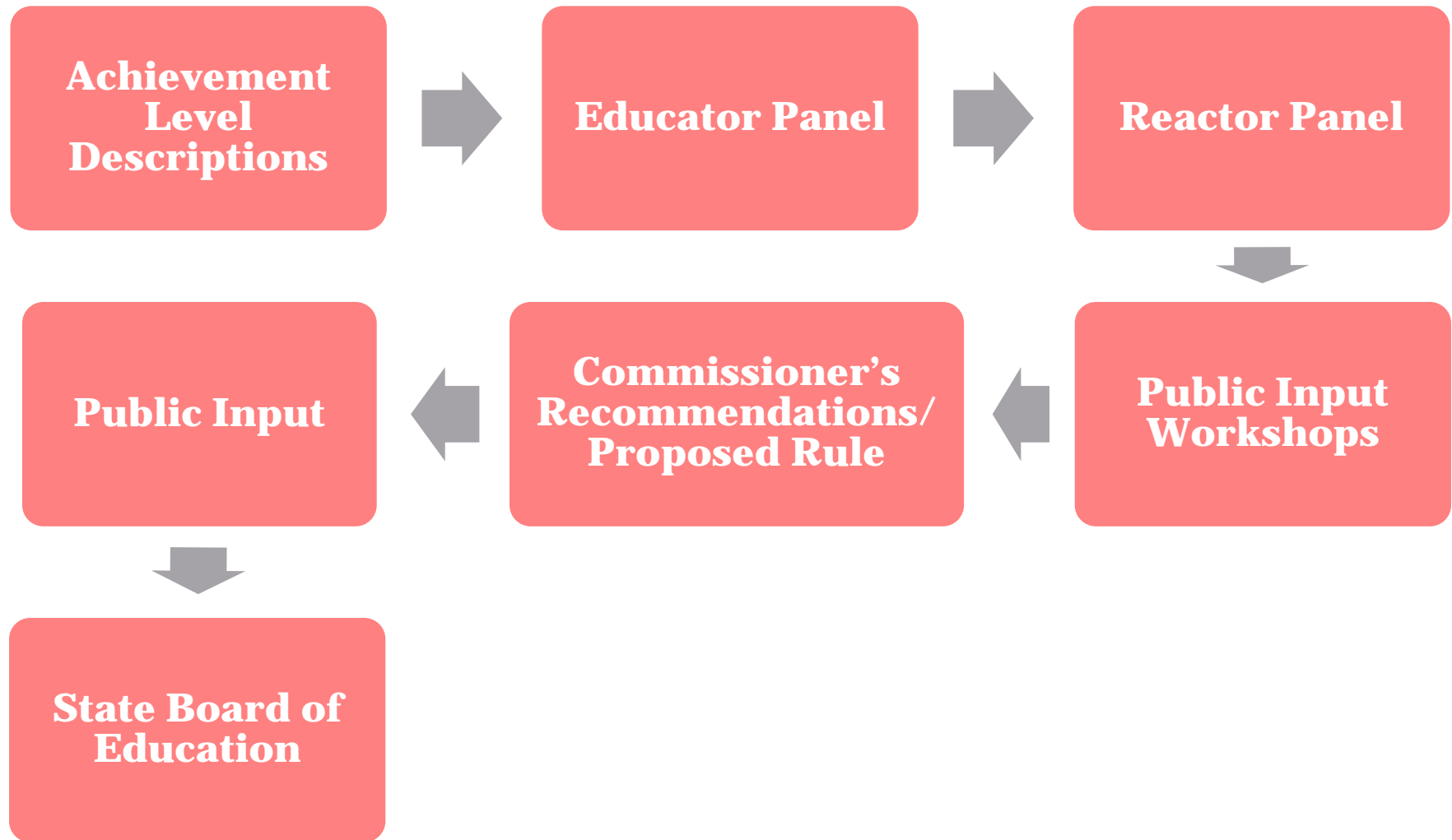
Historical Data - Grade 5, Achievement Level 1 FCAT Science (2003-2011) and FCAT 2.0 Science (2012)



Historical Data - Grade 8, Achievement Level 1 FCAT Science (2003-2011) and FCAT 2.0 Science (2012)



Setting Standards is a Multi-Stage Process



Standard-Setting Timeline

Month/Year	Task
September 2012	Advertise Intent to Revise FCAT Rule
September 18-21, 2012	Conduct Standard-Setting Meetings - Tallahassee, FL 15-20 Educators per Subject/Grade (4 panels)
September 27-28, 2012	Conduct Reactor Panel Meeting - Tallahassee, FL 20-25 Superintendents and Community Leaders (1 panel)
October 15, 16, and 18, 2012	Conduct Rule-Development Workshops and Advertise Proposed State Board of Education FCAT Rule
December 2012	State Board of Education Rule Adoption - New Achievement Levels for FCAT 2.0 Science, and Biology 1 EOC, and Geometry EOC Assessments

Your Turn to Provide Input...

For each assessment:

- Review recommendations and impact data (See the standard setting reference sheet)
- Reflect
- Options to provide input on the Reactor Panel's proposed cut scores:
 - Higher – Move the cut score **higher** to increase expectations (**fewer** students classified as proficient)
 - No Change – Maintain cut scores
 - Lower – Move the cut score **lower** to decrease expectations (**more** students classified as proficient)
- Provide written comments as desired

Respond to the Reactor Panel's Proposed Cuts

FCAT 2.0
Florida Comprehensive Assessment Test®

Rule Development Workshops

Florida
EOC
Assessments

Public Input

Grades 5 and 8 FCAT 2.0 Science, Biology 1 End-of-Course Assessment, and
Geometry End-of-Course Assessment Standard Setting

State Board of Education Rule 6A-1.09422:
Florida Comprehensive Assessment Test and End-of-Course Assessment Requirements

Please select the appropriate rule development workshop:

- October 15, 2012—Tampa, Florida
- October 16, 2011—Tallahassee, Florida
- October 18, 2011—Palm Beach, Florida

Required Information

Name Please print.	
Affiliation Check all that apply.	<input type="checkbox"/> Teacher <input type="checkbox"/> School/District Representative <input type="checkbox"/> Parent <input type="checkbox"/> Student <input type="checkbox"/> Business Leader <input type="checkbox"/> Other _____
Organization, if applicable (e.g. School, District, Business)	
Contact Information (i.e. email, phone)	
Signature	

If you were able to change the Reactor Panel's proposed cut scores (provided in the table below) for any of the following assessments, which cut scores would you change, and in which direction would you recommend changes in the cut scores? Please select one answer for each cut point for each assessment.

Assessment	Cut Score			
	Level 1/2 Cut	Level 2/3 Cut	Level 3/4 Cut	Level 4/5 Cut
FCAT 2.0 Grade 5 Science	Reactor Panel (185) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (200) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (215) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (225) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change
FCAT 2.0 Grade 8 Science	Reactor Panel (185) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (200) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (215) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (225) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change
Biology 1 EOC Assessment	Reactor Panel (369) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (395) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (413) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (428) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change
Geometry EOC Assessment	Reactor Panel (377) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (398) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (423) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change	Reactor Panel (434) <input type="checkbox"/> Higher <input type="checkbox"/> Lower <input type="checkbox"/> No Change

Thank you for
participating in the 2012
standard-setting process.

Updated information will be posted to:
<http://fcats.fldoe.org/standardsetting.asp>