

FCAT 2.0 Reading, Mathematics, and Algebra 1 End-of-Course Assessment Standard Setting



Rule Development Workshops
October 10-12, 2011

Office of Assessment
Florida Department of Education

FCAT 2.0

EOC

Purpose of this Rule Development Workshop

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- 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 Reading, Mathematics, and Algebra 1 End-of-Course Assessments
- Obtain input from interested audiences:
 - General input about setting the achievement levels
 - Specific feedback on achievement level recommendations

Today's Topics

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

Type of Assessment	Assessment Area	Year Administered to Students			
		2011-12	2012-13	2013-14	2014-15
FCAT	FCAT Writing	Gr 4, 8, 10	Gr 4, 8, 10	Gr 4, 8, 10	
FCAT 2.0	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	Middle School
Partnership for Assessment of Readiness for College and Careers (PARCC)	English language Arts				Gr 3-11
	Mathematics				Gr 3-8
	High School Math EOCs (3 subjects)				In course
Postsecondary Education Readiness Test (PERT)	Reading, Writing, Mathematics	Gr 11	Gr 11	Gr 11	Gr 11

FCAT 2.0 Reading

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- Grades 3-10
- All multiple-choice items
- Increased content rigor — aligned to the Next Generation Sunshine State Standards (NGSSS).

FCAT 2.0 Reading: Examples of Increased Rigor

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- Students are asked more often to:
 - use reasonable prior knowledge, such as grade-appropriate vocabulary.
 - make reasonable inferences that are not explicitly text-based.
 - analyze information across a pair of texts, such as making comparisons of main ideas.

FCAT 2.0 Mathematics



- Grades 3-8
- Multiple-choice and gridded-response items
- Increased content rigor — aligned to the 2007 Next Generation Sunshine State Standards (NGSSS).

FCAT 2.0 Mathematics: Examples of Increased Rigor

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- FCAT 2.0 will more often require students to use information learned in an earlier grade and apply it to a current problem.
 - On FCAT, for example, students responded to items related to mean, median, and mode at several consecutive grades. On FCAT 2.0, this concept is assessed primarily in grade 6, but may be incorporated in test items assessing other benchmarks at grades 7 and 8.
- Before, students at a certain grade level were asked to make conversions within a measurement system such as converting feet to inches. Now, students will be asked to make conversions across measurement systems such as converting feet to meters.

Algebra 1 EOC Assessment

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- Aligned to the 2007 Next Generation Sunshine State Standards Algebra 1 course description
- Computer-based test with paper-based test accommodations
- Online reference sheet and straightedge
- Up to 65 items:
 - Multiple-choice and fill-in response items
 - No performance tasks

FCAT 2.0/EOC are Standards-Based Tests

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- 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?

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- 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?

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- To define what students should know and be able to do
- To identify clear expectations for students, parents, and teachers
- 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

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- 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
 - Adequate Yearly Progress

Setting Achievement Standards – or “Cut Scores”

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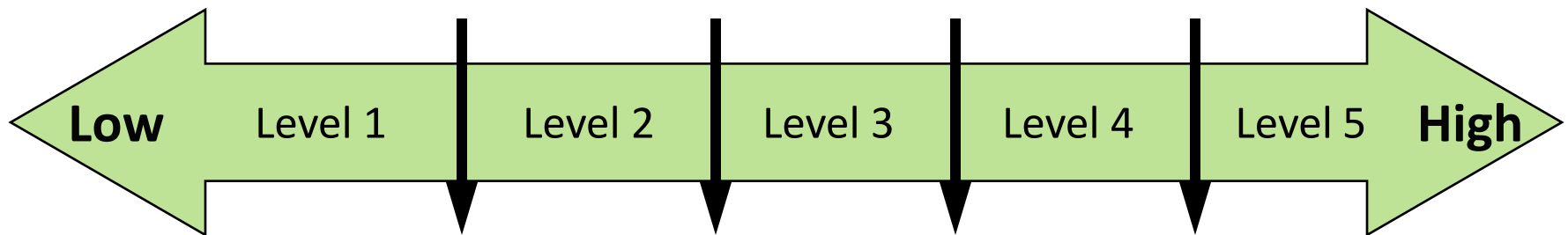
- A process that helps provide meaning to test scores
 - Provides a frame of reference for interpreting test scores
 - Most relevant when applied to tests based on defined content standards (criterion-referenced tests)
- The process includes: Deriving levels of performance on educational ... assessments,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

Achievement Levels

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

Five Achievement Levels, Four Cut Points



We've done this before...

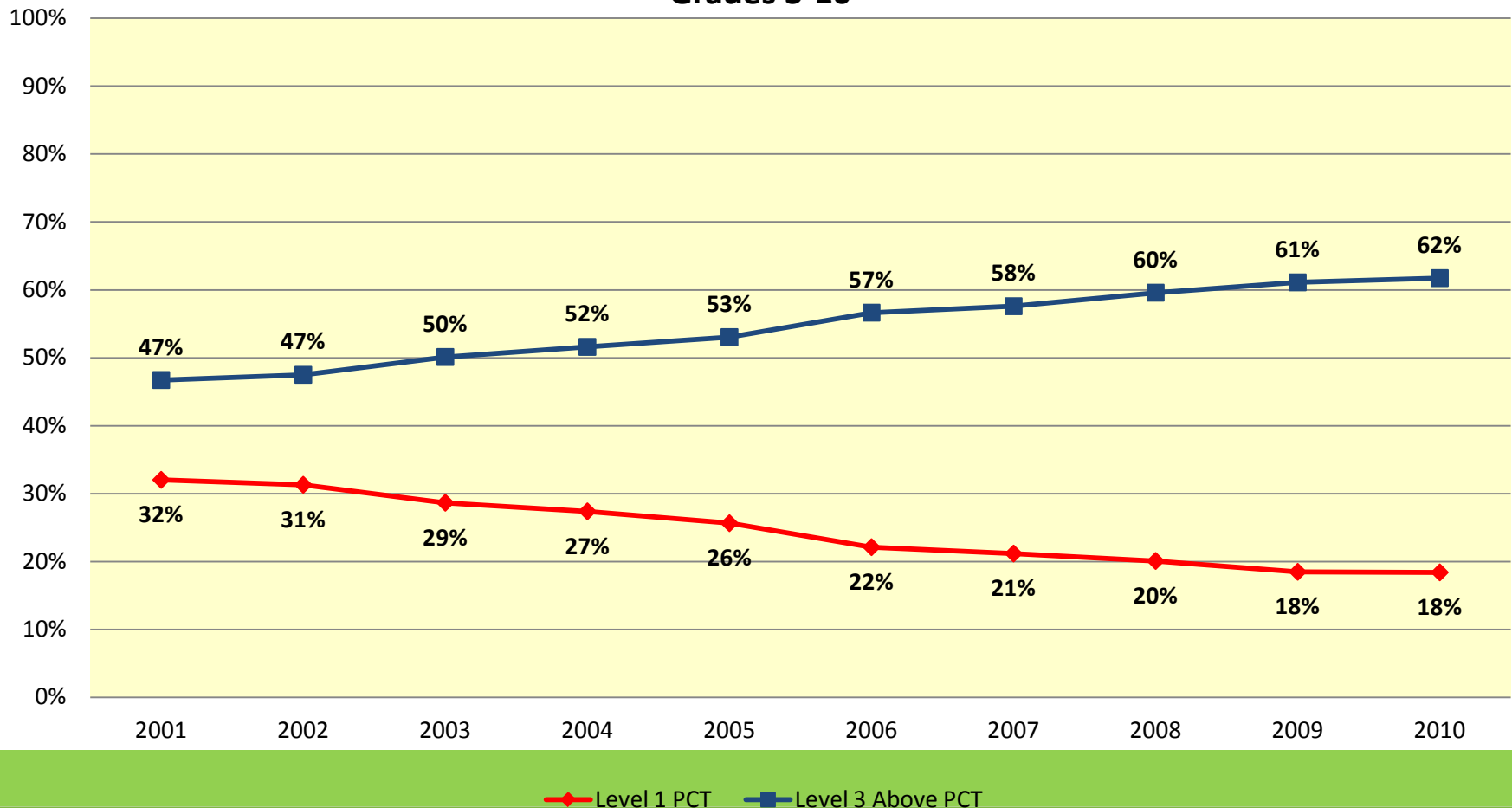
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- **1998:**
 - Reading and Mathematics Achievement Standards approved for grades 4, 5, 8, and 10.
- **2001:**
 - Reading and Mathematics Achievement Standards approved for grades 3-10.
 - Grade 10 passing scores established.

Past Experience - FCAT Reading Standards

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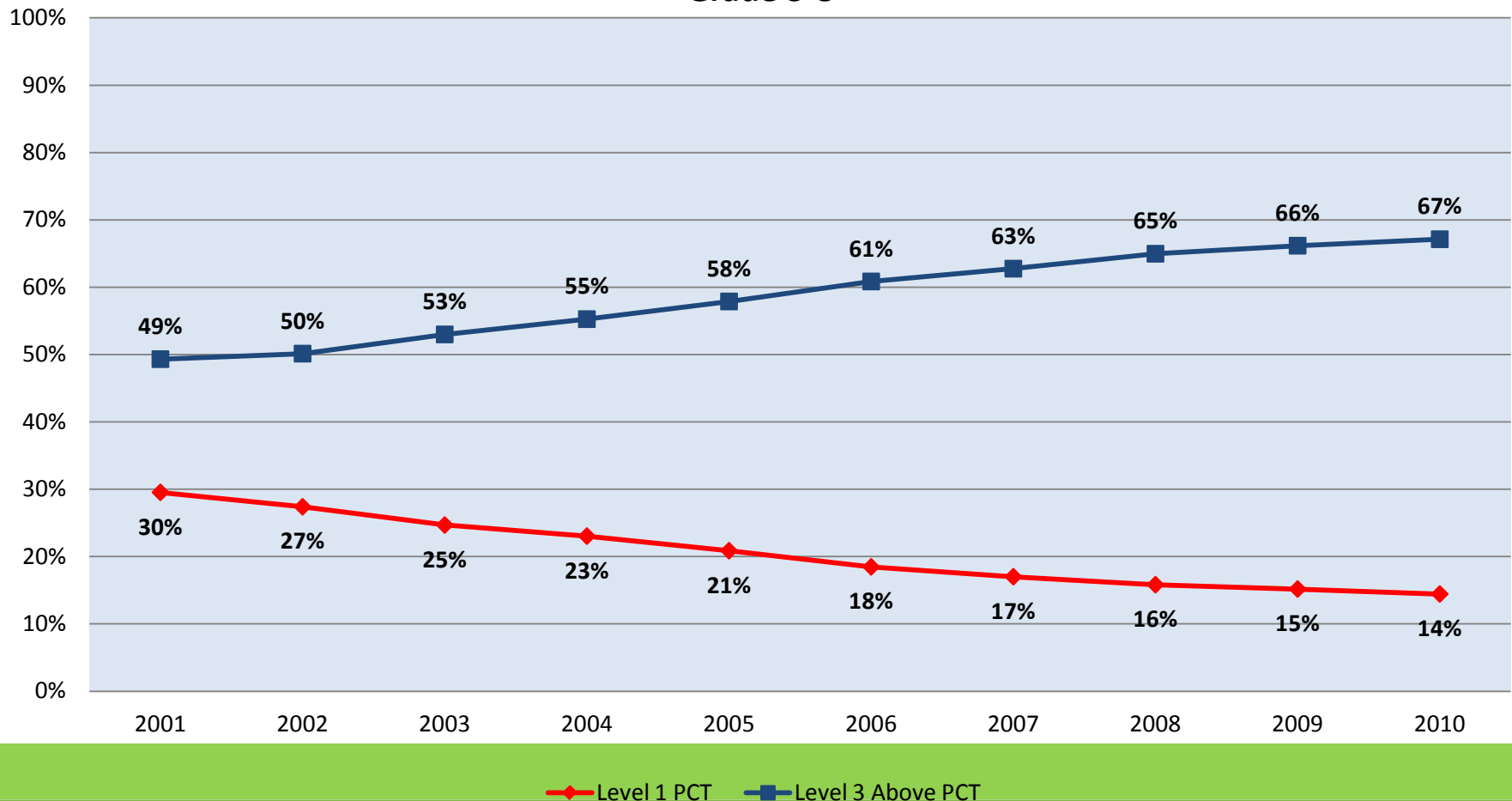
**FCAT Reading
by Achievement Level
Grades 3-10**



Past Experience - FCAT Mathematics Standards

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**FCAT Mathematics
By Achievement Level
Grade 3-8**



Standard-Setting Steps

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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
4. Conduct the standard-setting process to propose cut scores
5. Convene a business and policy leader reactor panel to review the proposed cut scores
6. Obtain State Board of Education approval of cut scores with public input

FCAT 2.0 and Algebra 1 EOC Achievement Level Descriptions – Policy Definitions

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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

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- 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 committee of educators and then posted for public review and comment.

Educator Panels: September 20-23

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- Approximately 300 teachers and district-level administrators with subject-area expertise and expertise with special populations.
- Panels represented Florida's diversity, including:
 - Gender
 - Ethnicity
 - District Size

Standard-Setting Procedure - Educator Panel

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- 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

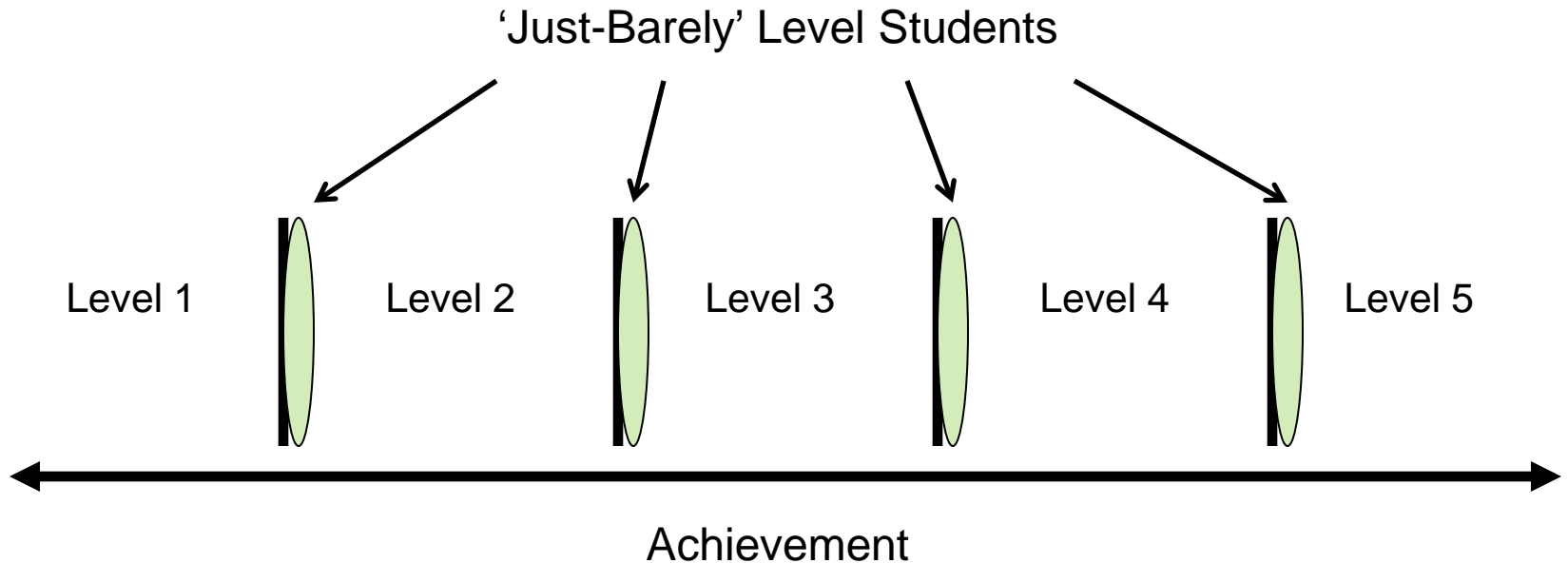
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- The judgmental process (by item)
 - Review the Achievement Level Description
 - Evaluate the knowledge & skills needed to respond correctly to the item
 - Judge the percentage of students expected to respond correctly

The 'Just-Barely' Test Taker

25

- Borderline in terms of achievement level
- Just barely meets criteria to be classified into the achievement level



College Readiness

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- According to Florida Law
 - “In addition to designating a passing score under subparagraph 6., the State Board of Education shall also designate, by rule, a score for each statewide, standardized end-of-course assessment which indicates that a student is high achieving and has the potential to meet college-readiness standards by the time the student graduates from high school.”¹
- Question: Which achievement level cut represents a level of student achievement that indicates the student is high achieving AND has the potential to meet college-readiness standards by the time he/she graduates from high school?
 - Why?

¹Florida Statutes: Title XLVIII, Chapter 1008, Section 1008.22, (3) (c) 7

Reactor Panel Meeting – September 29-30

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

2011 FCAT 2.0 Reading and Mathematics/Algebra 1 End-of-Course (EOC) Assessment Reactor Panel Committee List

Last Name	First Name	Organization
Benjamin	Michael	Step Up For Students
Biemesderfer	David	Florida's Philanthropic Network
Birnholz	Steven	Florida Council of 100
Blocker	Ronald	Orange County Schools
Boyd	Dan	Alachua County Schools
Bragg	Mary Laura	Foundation for Florida's Future
Burke	Joseph	Lee County Schools
Cox	Wally	Highlands County Schools
Finney	Janice	Florida State University
Fiorentino	Heather	Pasco County Schools
Hovey	Jean	Florida PTA
Howdyshell	Linda	Broward College
Joyner	Joseph	St. Johns County Schools
Moxley	Susan	Lake County Schools
Pratt-Dannals	William E.	Duval County Schools
Rodriguez	Ed	Hispanic CREO
Smith	Margaret (Peg)	Volusia County Schools
Thomas	Malcolm	Escambia County Schools
Tibbetts	Alexis	Okaloosa County Schools
Vogel	Bill	Seminole County Schools
West	Ryan	Florida Chamber of Commerce

Reactor Panel Review

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- Considered the following:
 - Information and materials from the standard-setting meeting
 - Next Generation Sunshine State Standards
 - Achievement Level Descriptions
 - External tests that are commonly administered to Florida students outside of the FCAT 2.0 and Algebra 1 EOC Assessment system
 - ✦ NAEP, Stanford 10, PSAT, SAT, PLAN, ACT
 - Impact data
 - ✦ By subject/grade
 - ✦ By gender
 - ✦ By ethnicity
 - ✦ Across subjects and grades (“vertical articulation”)

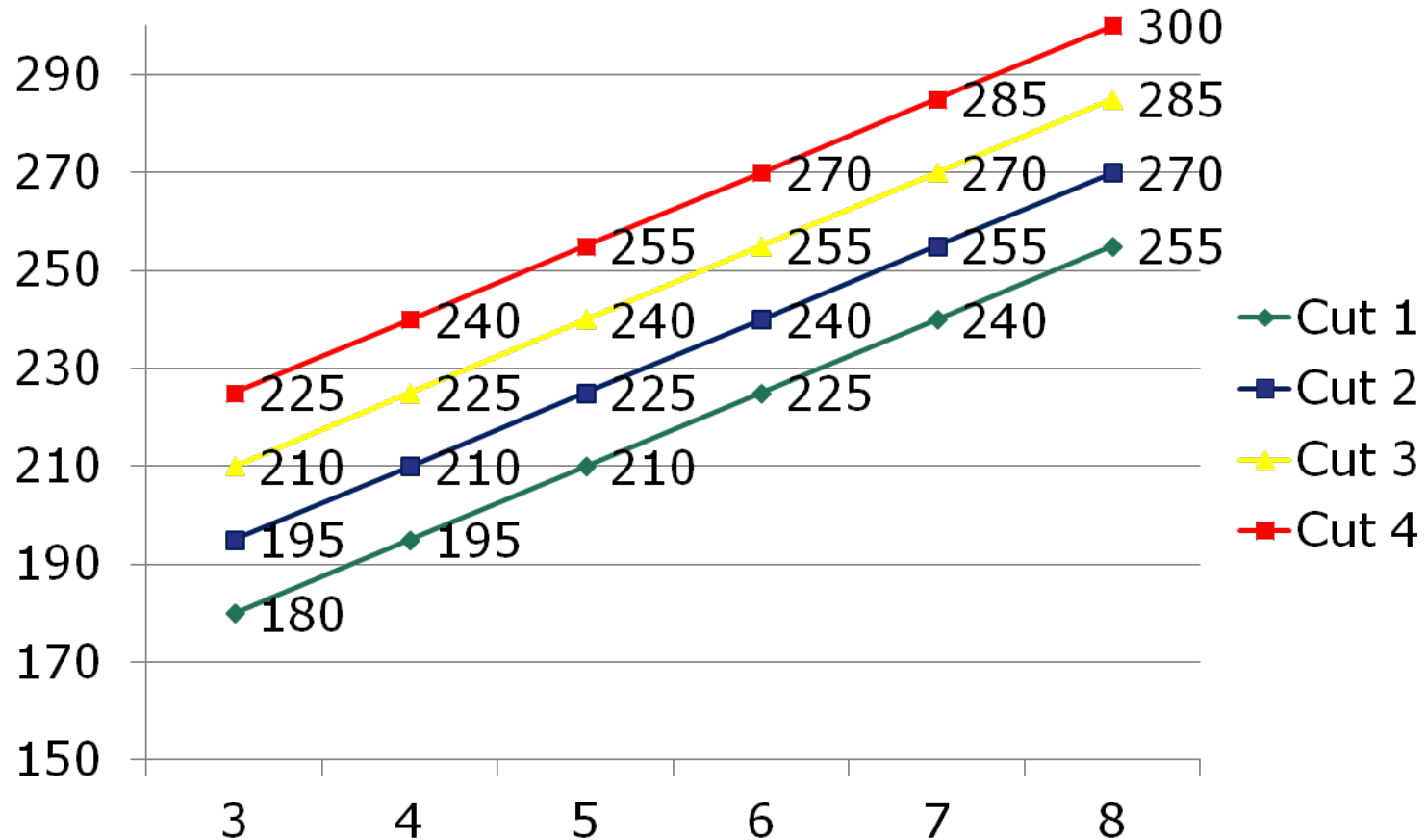
Key Review Questions

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- Reactor panel considered the following questions:
 - Do the impact data for this grade look reasonable compared to other grades?
 - Is this the expected pattern of impact data across grades and between subjects?
 - How does the impact data compare to external data?
 - What is your feedback? Would you move the cut scores higher (higher expectation) or lower (lower expectation)? Why?

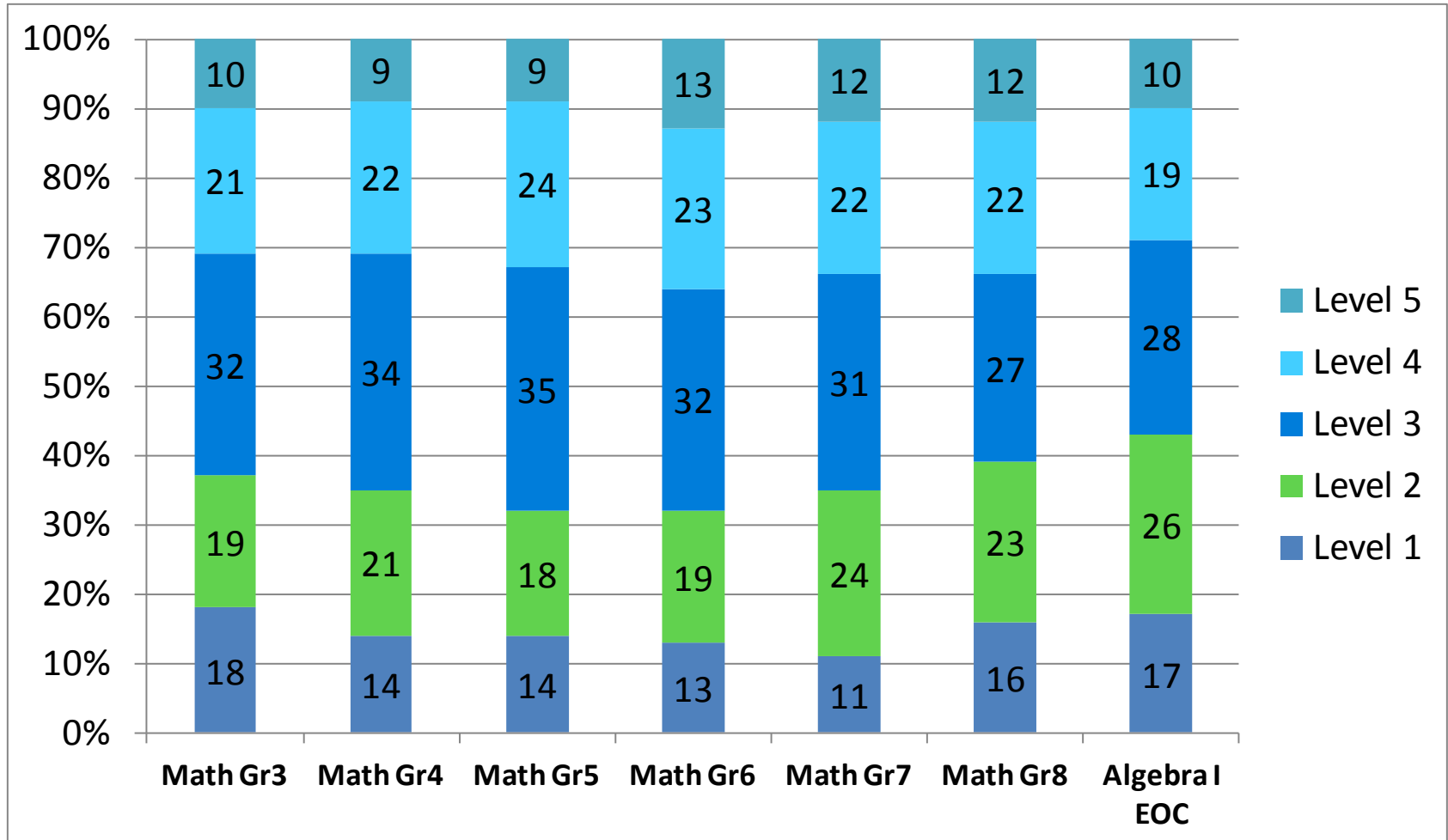
Sample Vertical Articulation – Scale Scores

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Sample Vertical Articulation – Impact Data

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FCAT 2.0 Reading and Mathematics Scale Score Ranges

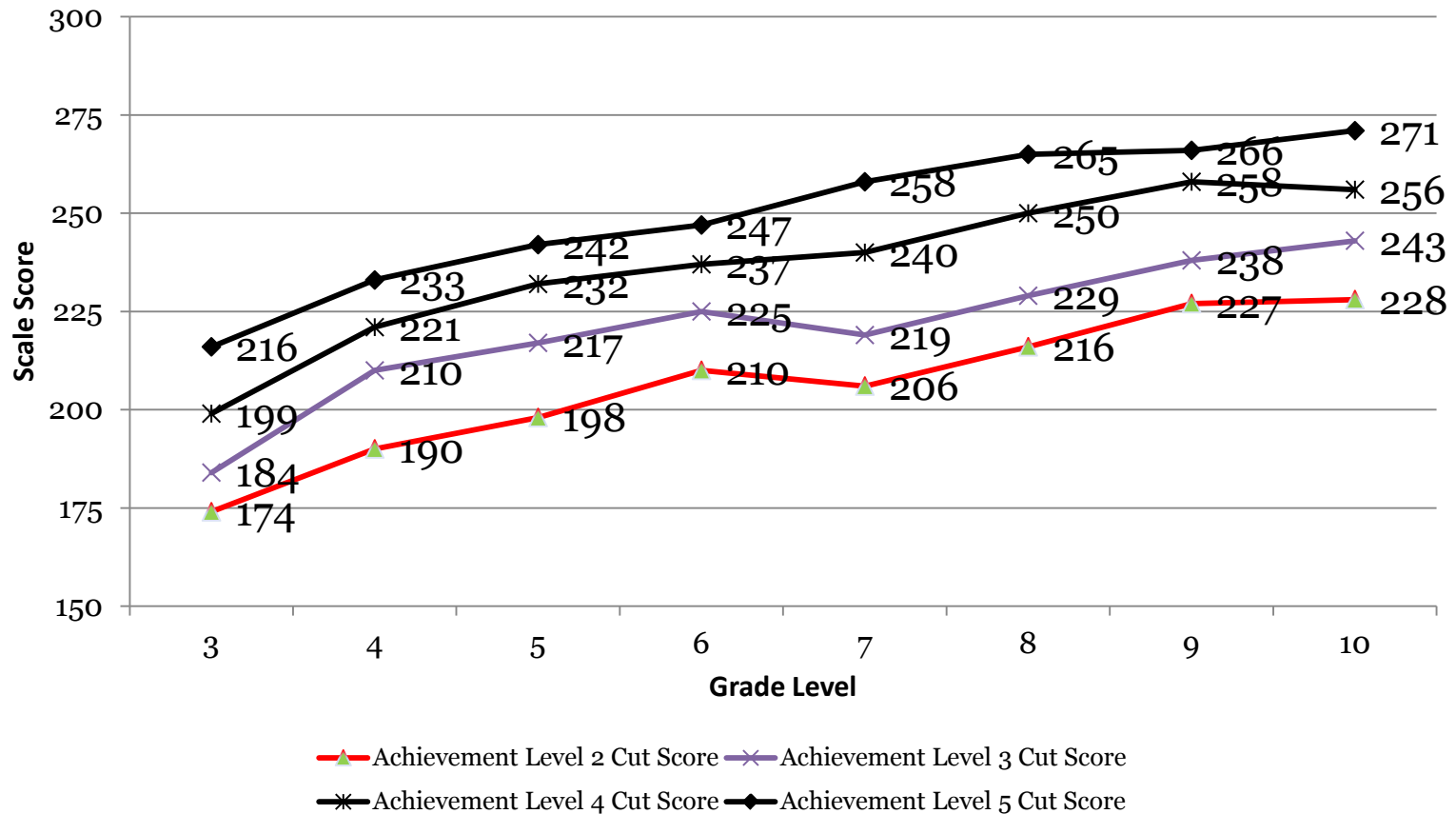
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Grade Level	Reading	Mathematics
3	140-260	140-260
4	154-269	155-271
5	161-277	163-279
6	167-283	170-284
7	171-289	179-292
8	175-296	187-298
9	178-302	N/A
10	188-302	N/A

Scale Scores – Reading, Educator Panel

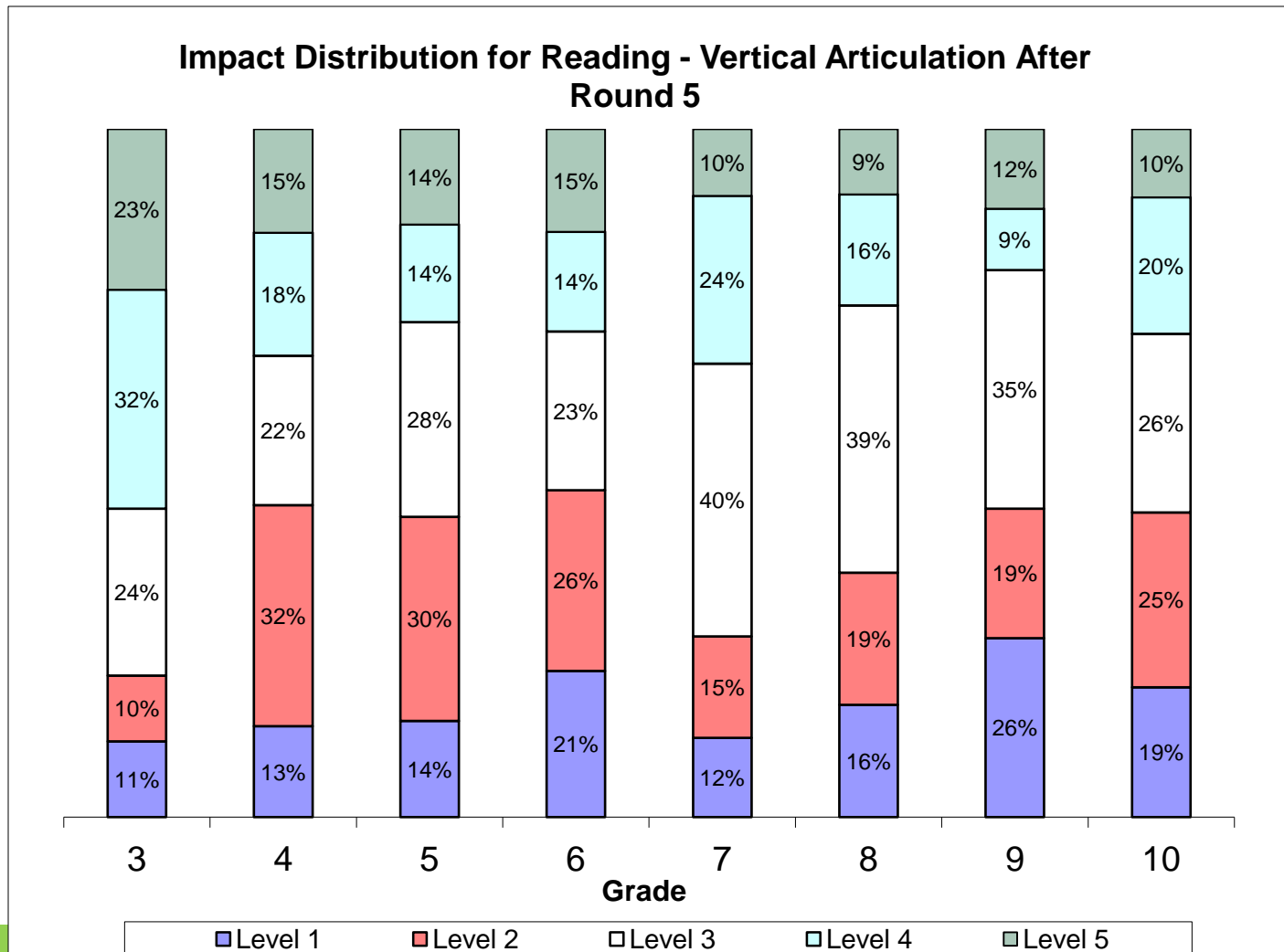
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Proposed FCAT 2.0 Reading Scale Score Cuts - Educator Panel, 9/23/11



Impact Data – Reading, Educator Panel

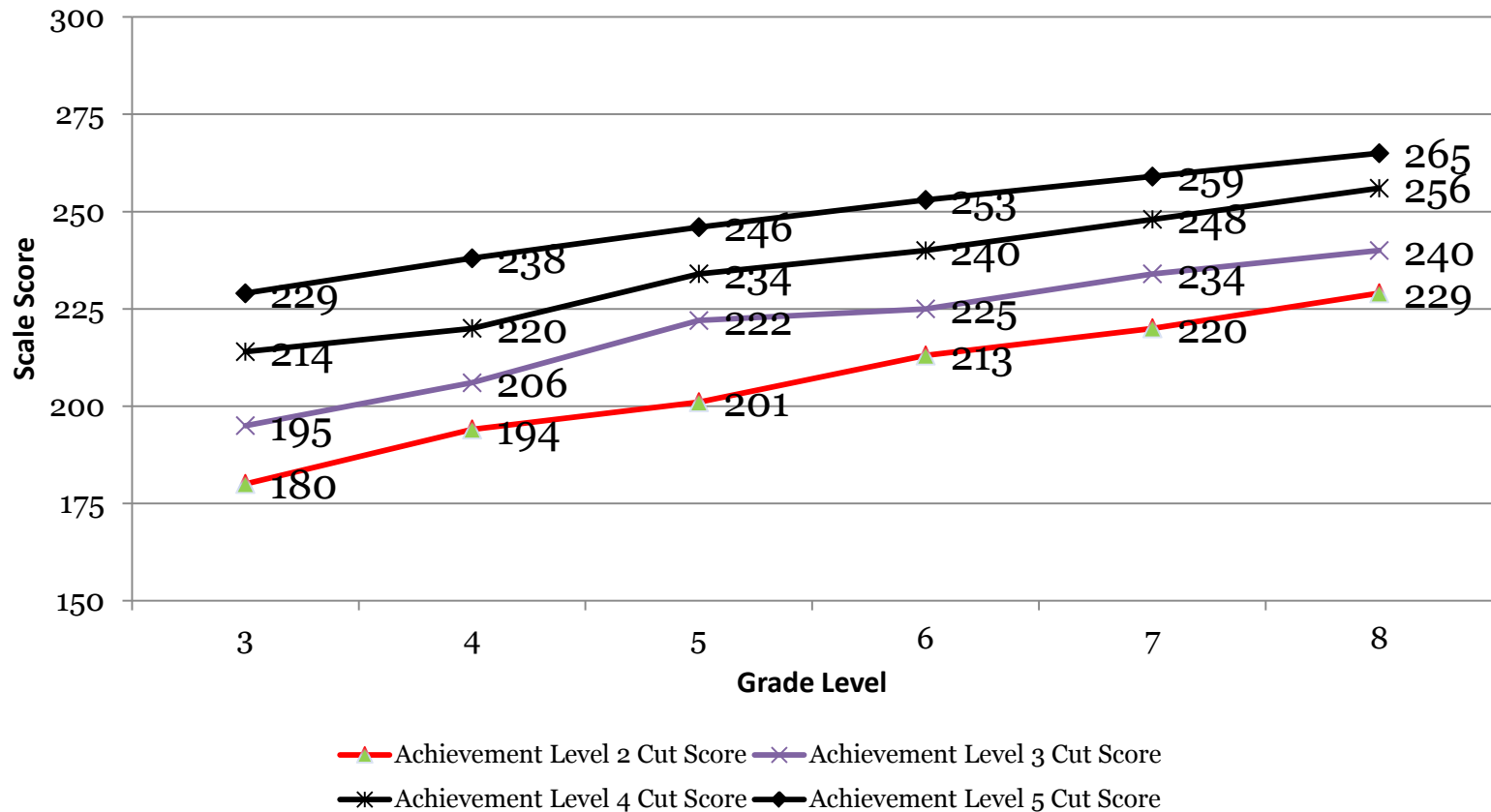
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Scale Scores – Mathematics, Educator Panel

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Proposed FCAT 2.0 Mathematics Scale Score Cuts - Educator Panels, 9/23/11



Scale Scores – Algebra 1 EOC Assessment, Educator Panel

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Achievement Level Scale Score Cuts

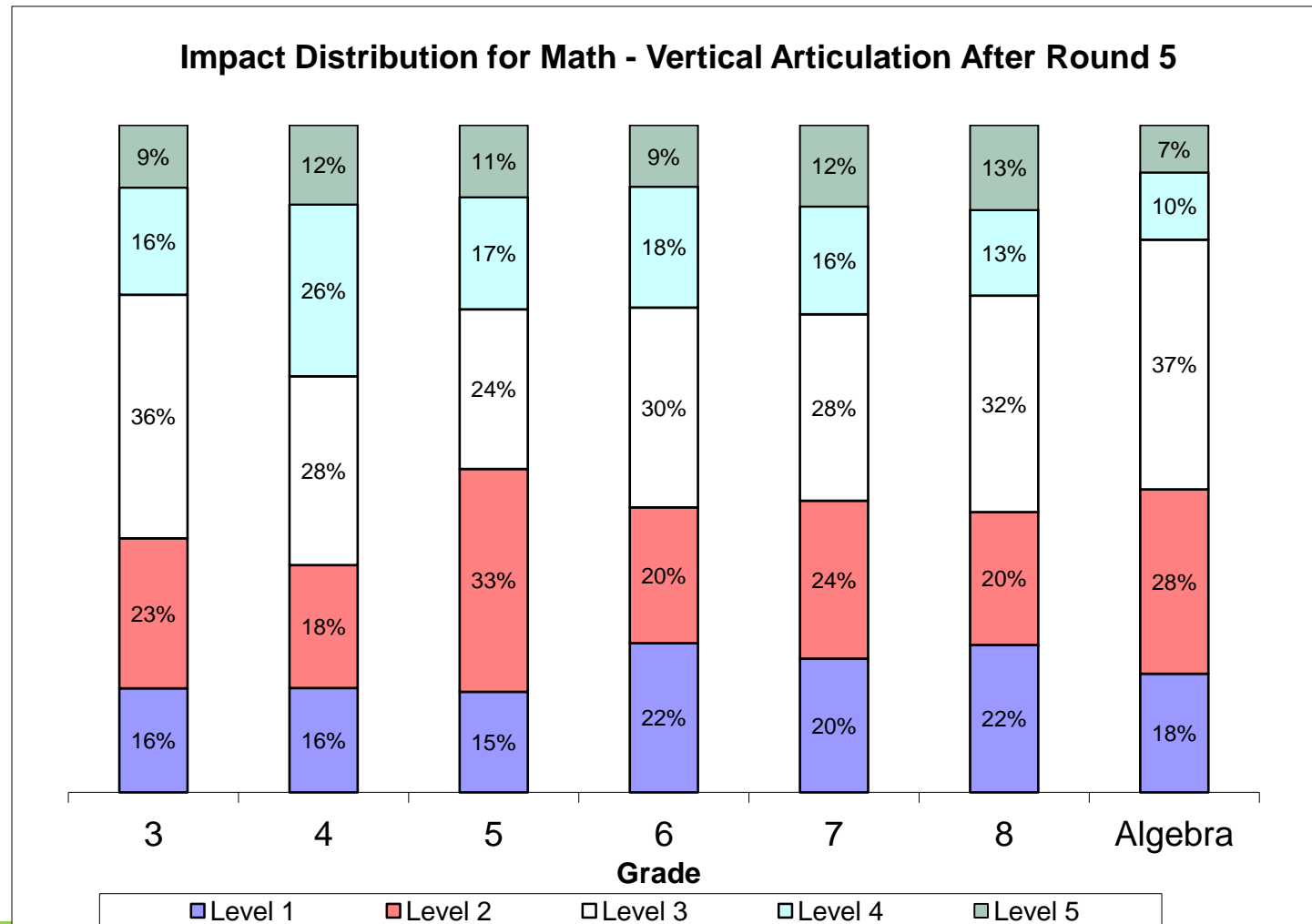
	Cut 1	Cut 2	Cut 3	Cut 4
Algebra 1 EOC Assessment	375	399	425	437

Recommended College-Ready Cut Score – Achievement Level 3

Algebra 1 EOC Assessment scale score range: 325 to 475.

Impact Data – Mathematics, Educator Panel

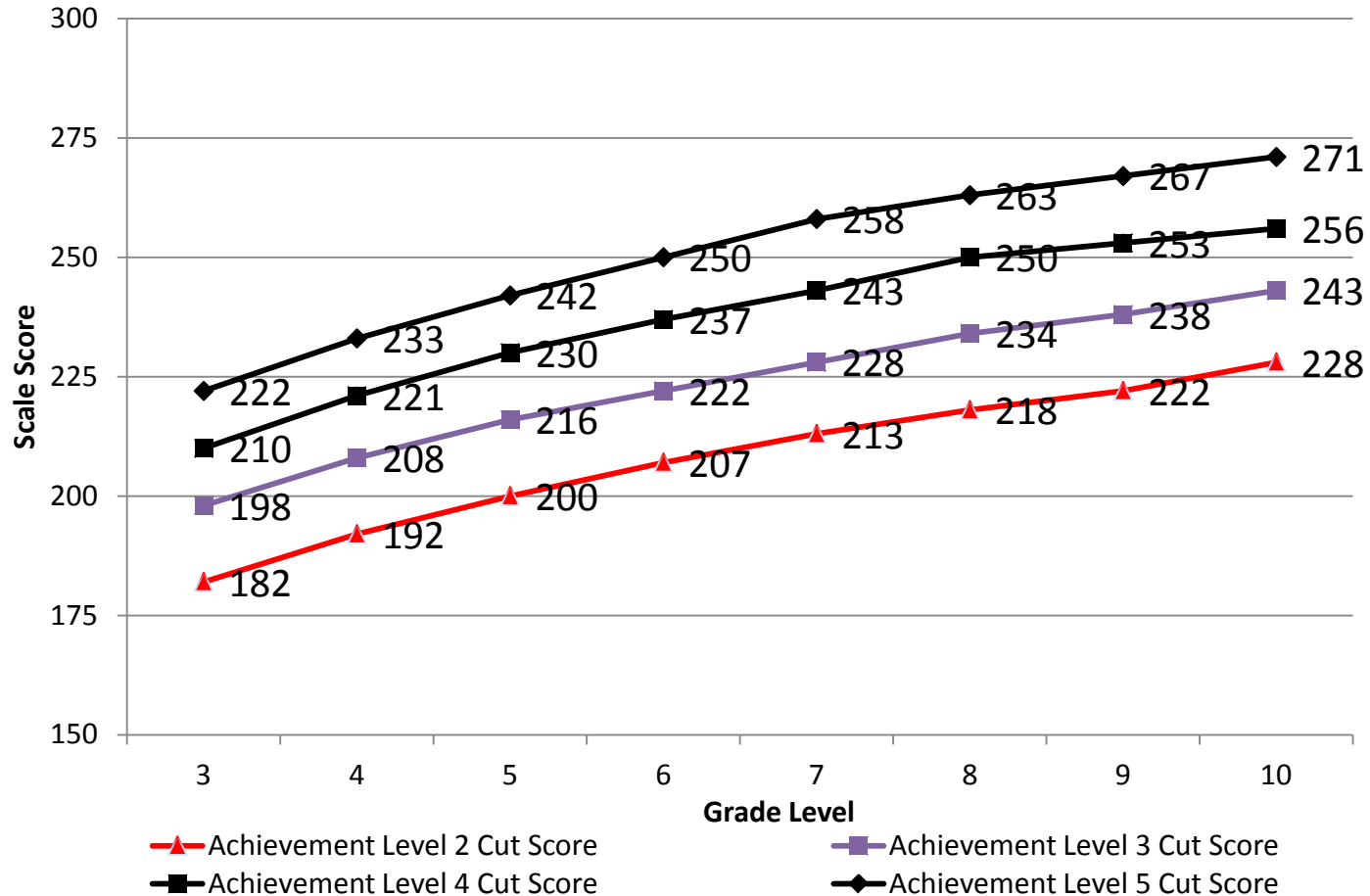
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Scale Scores – Reading, Reactor Panel

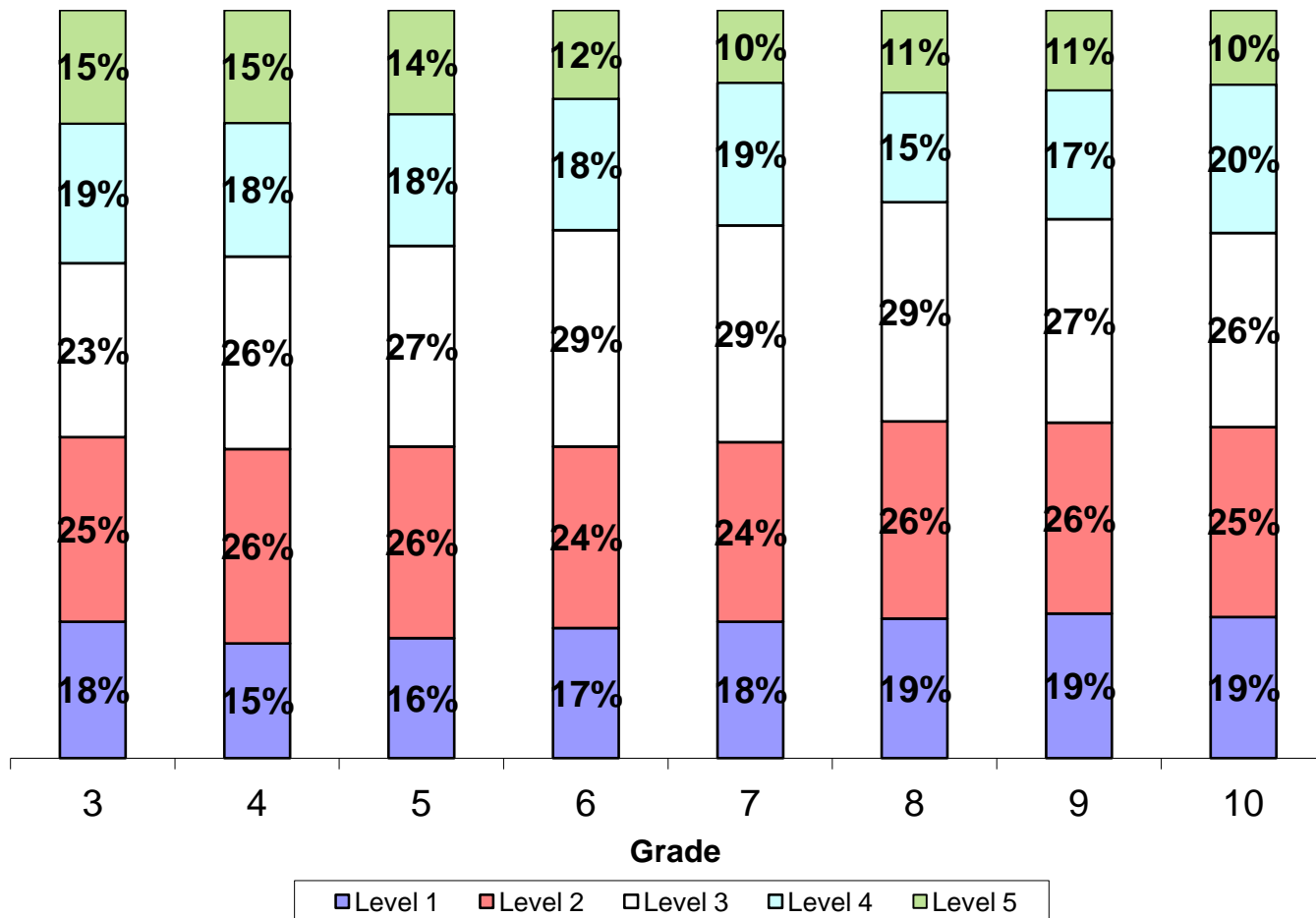
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FCAT 2.0 Reading Scale Score Cuts - Reactor Panel, 9/30/11



Impact Data – Reading, Reactor Panel

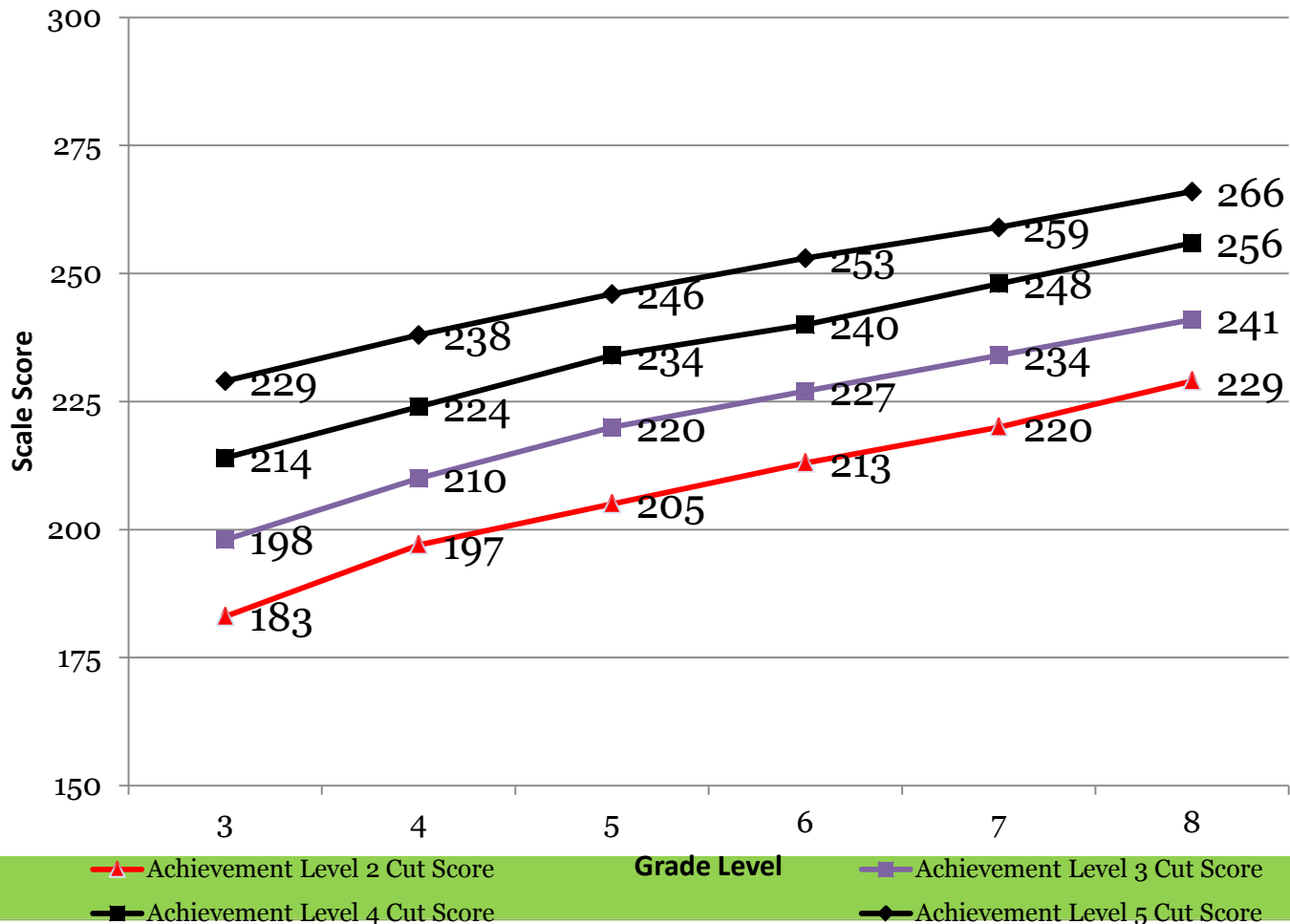
Percentage in each Performance Category



Scale Scores – Mathematics, Reactor Panel

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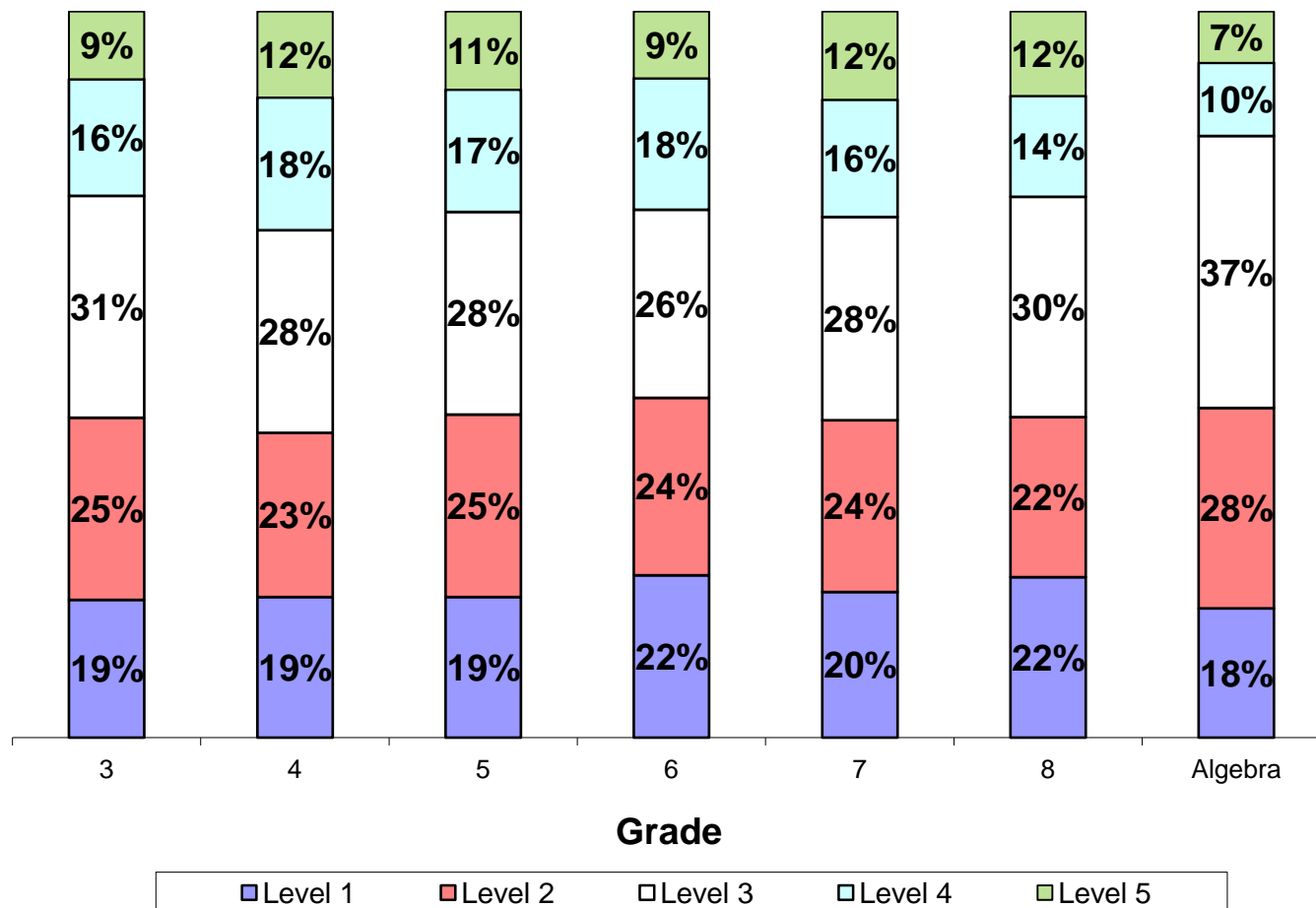
Proposed FCAT 2.0 Mathematics Scale Score Cuts - Reactor Panel, 9/30/11



Impact Data – Mathematics, Reactor Panel

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Percentage in each Performance Category



Proposed Rule

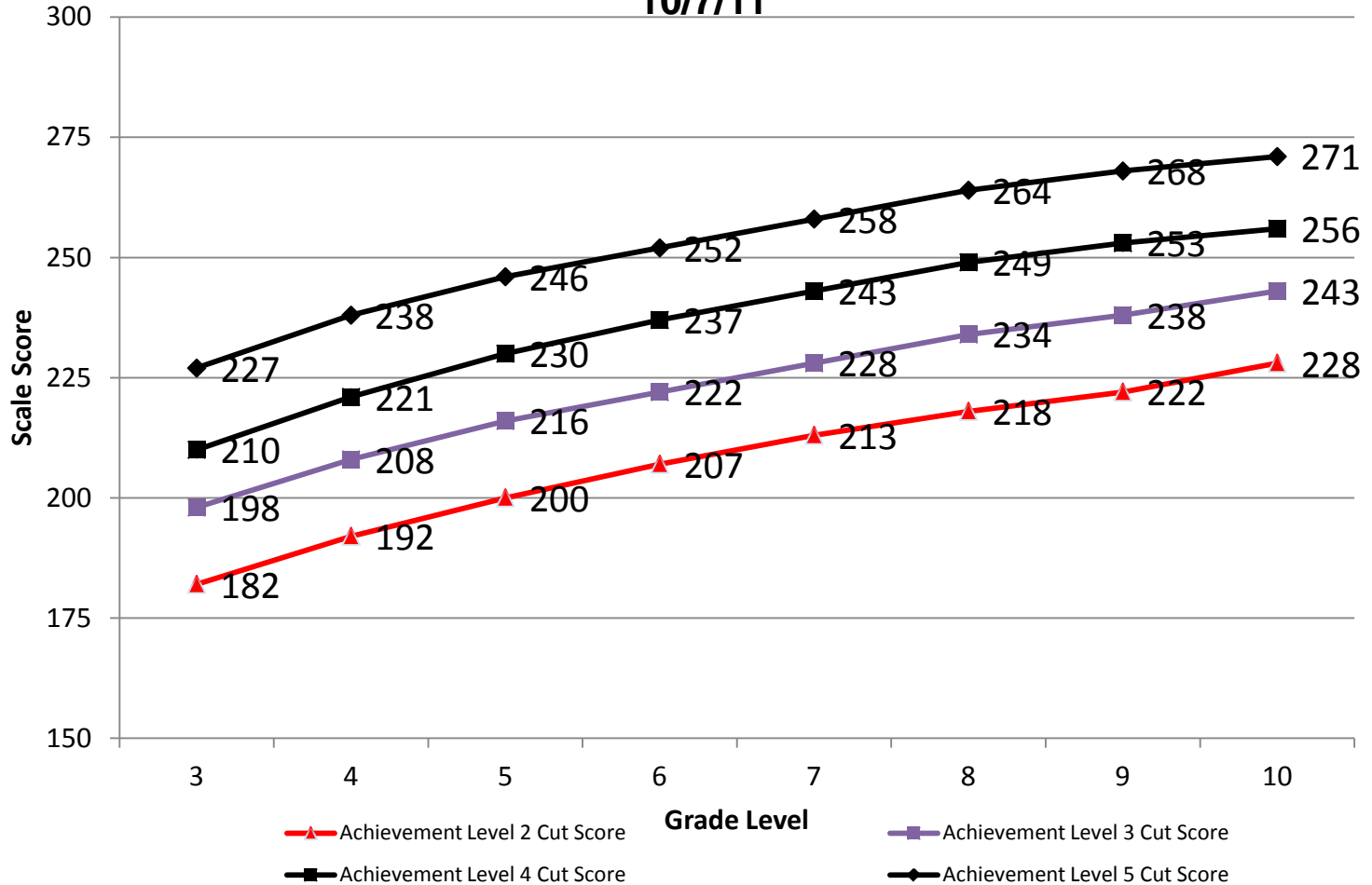
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- The Commissioner is recommending changes as follows:
 - Set the bar higher for Achievement Level 5 – by setting the expectation such that no more than 10% of 2011 students would have achieved Level 5 in all grades and subjects.
 - Make a small correction to the required scale score to achieve Level 4 in Grade 8 Reading.
 - ✦ It was slightly inconsistent with the other grades (slightly more rigorous) and subtracting one scale score point (250 to 249) achieved consistency.

Scale Scores – Reading, Proposed Rule

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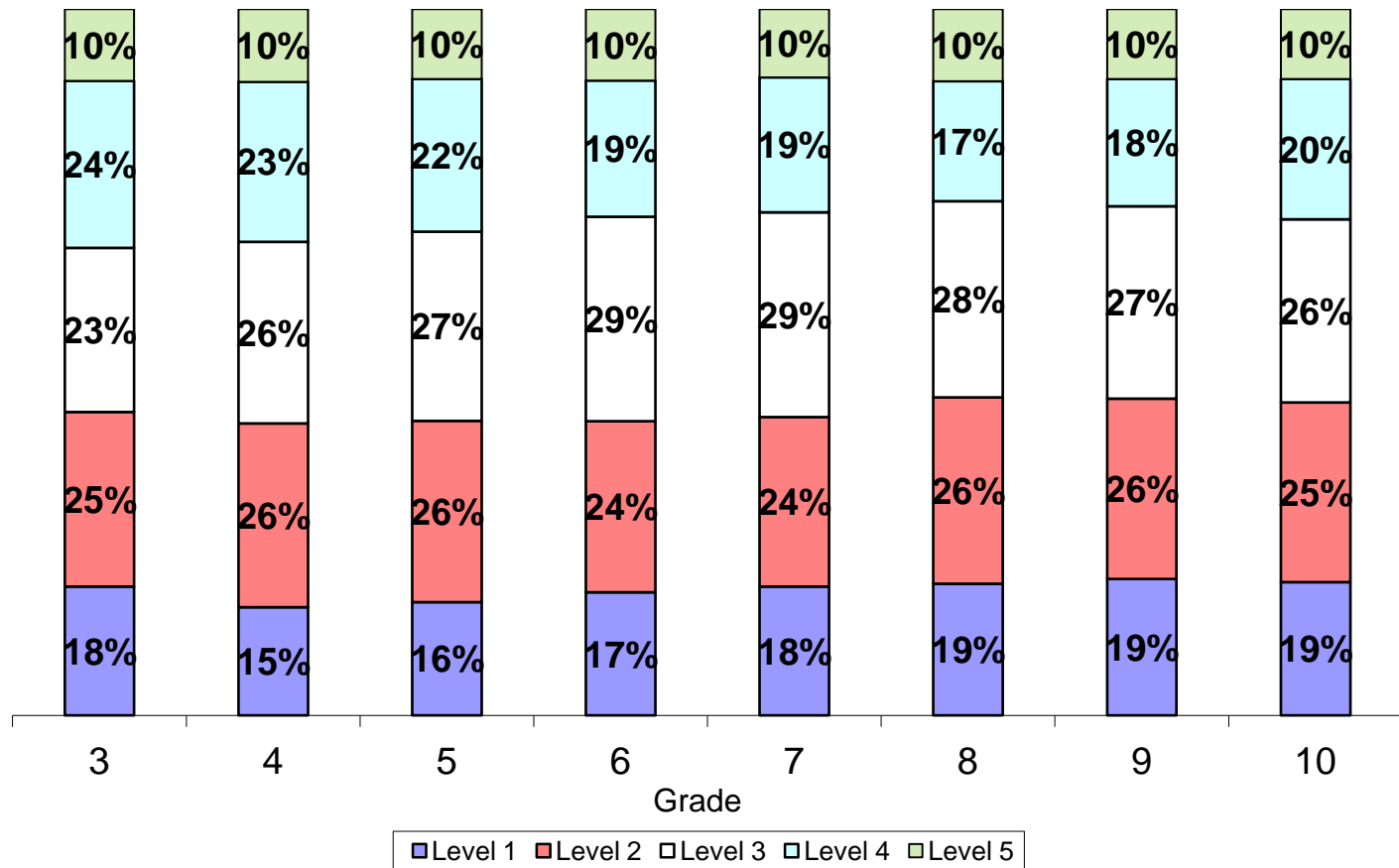
FCAT 2.0 Reading Scale Score Cuts - Proposed Rule, 10/7/11



Impact Data – Reading, Proposed Rule

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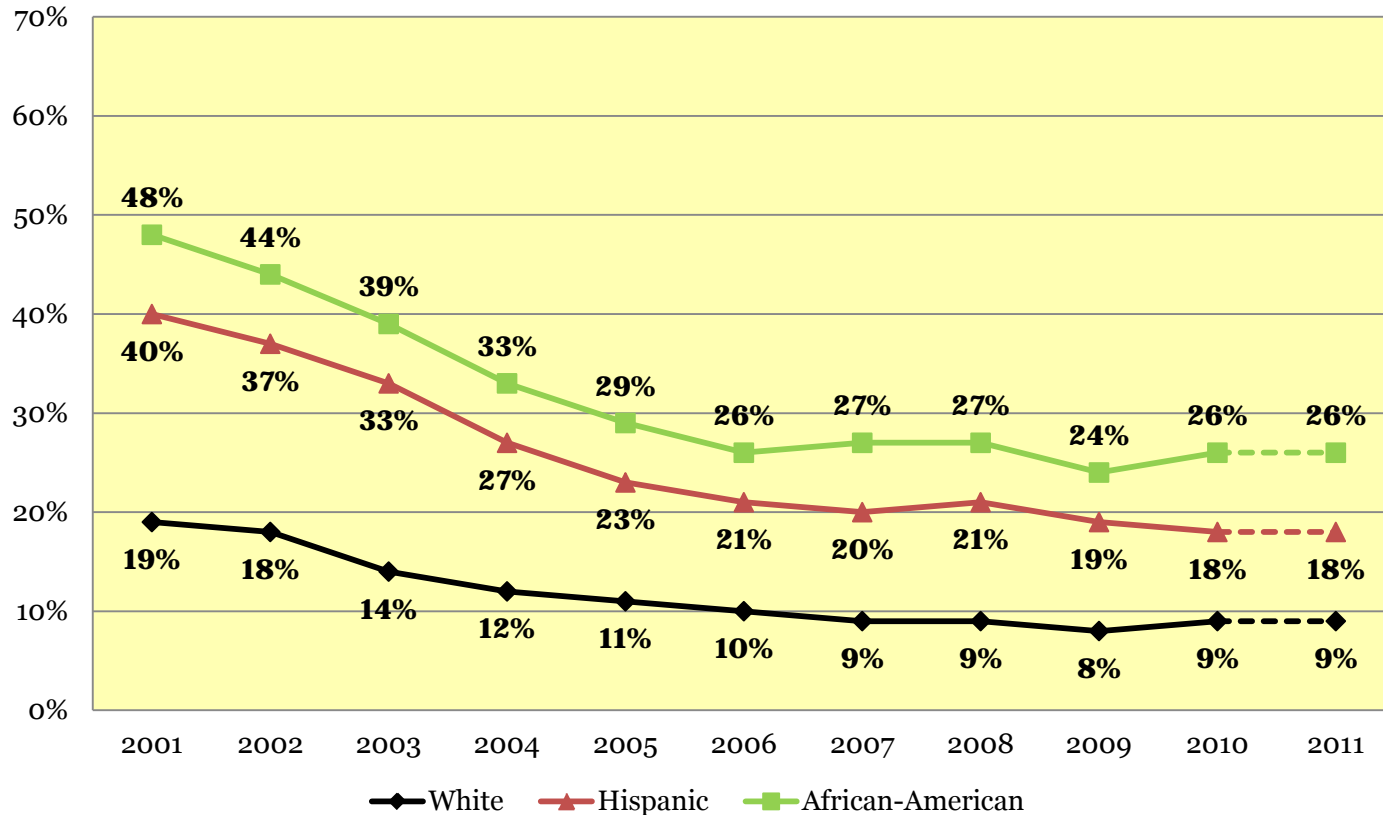
Percentage in each Achievement Level- Proposed Rule,
10/7/11



Historical Data – FCAT Reading

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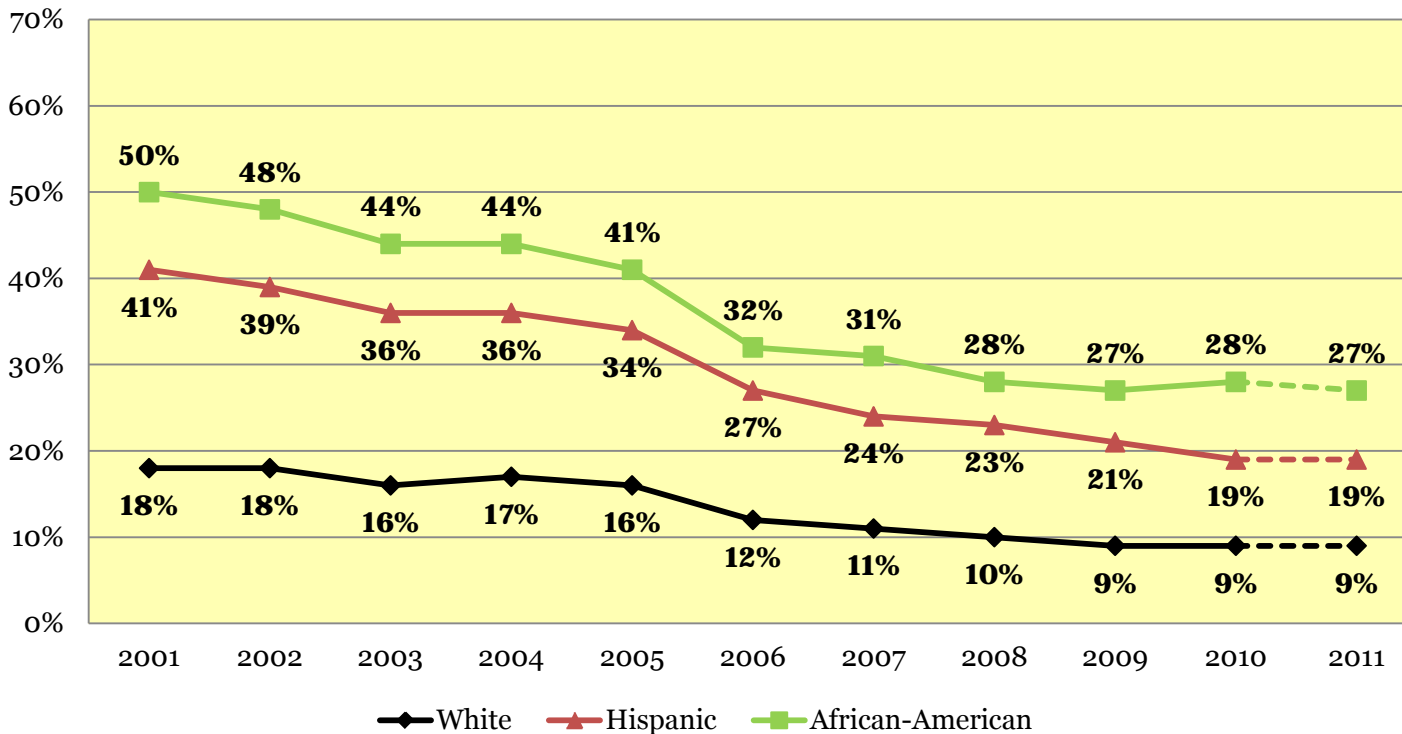
**FCAT Reading (2001-2010) and FCAT 2.0 Reading (2011)
Achievement Level 1
Grades 3, 4, and 5**



Historical Data – FCAT Reading

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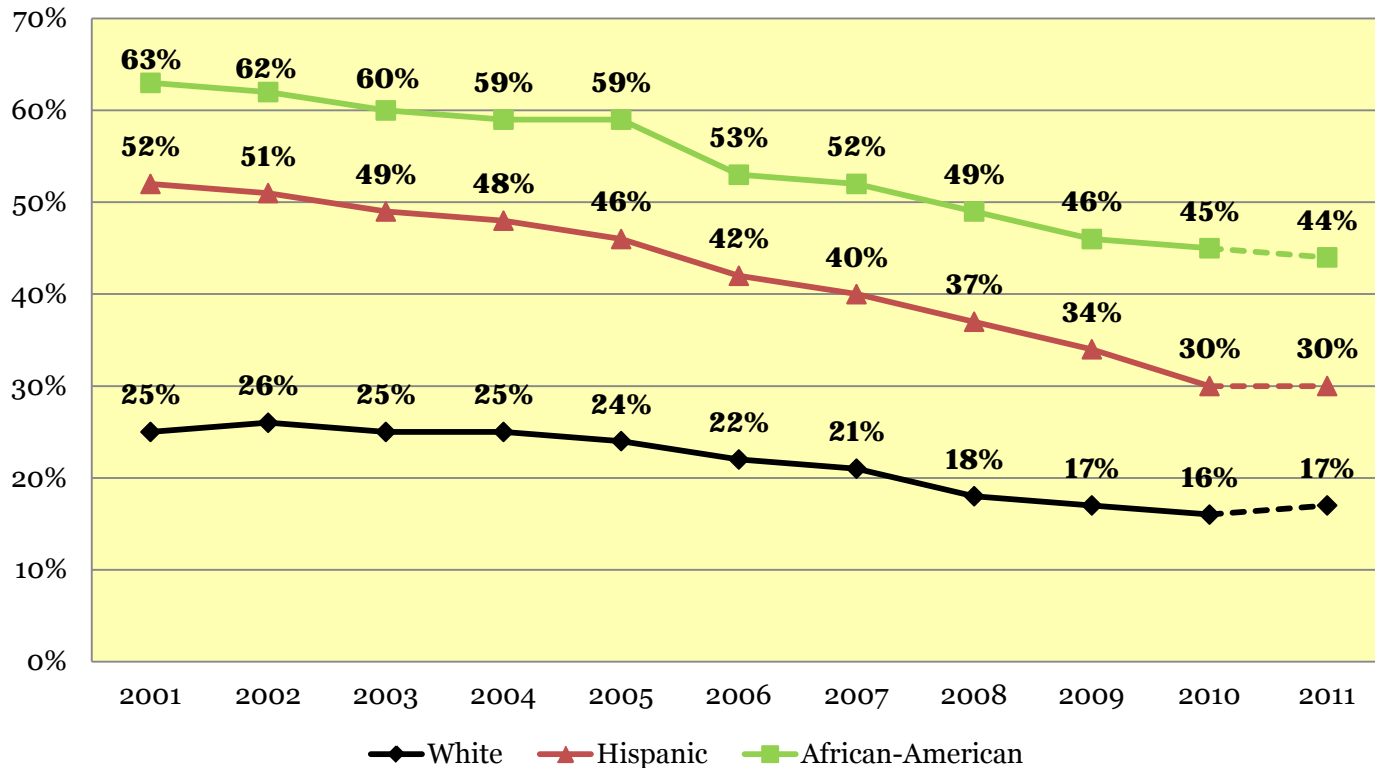
**FCAT Reading (2001-2010) and FCAT 2.0 Reading (2011)
Achievement Level 1
Grades 6, 7, and 8**



Historical Data – FCAT Reading

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FCAT Reading (2001-2010) and FCAT 2.0 (2011)
Achievement Level 1
Grades 9 and 10

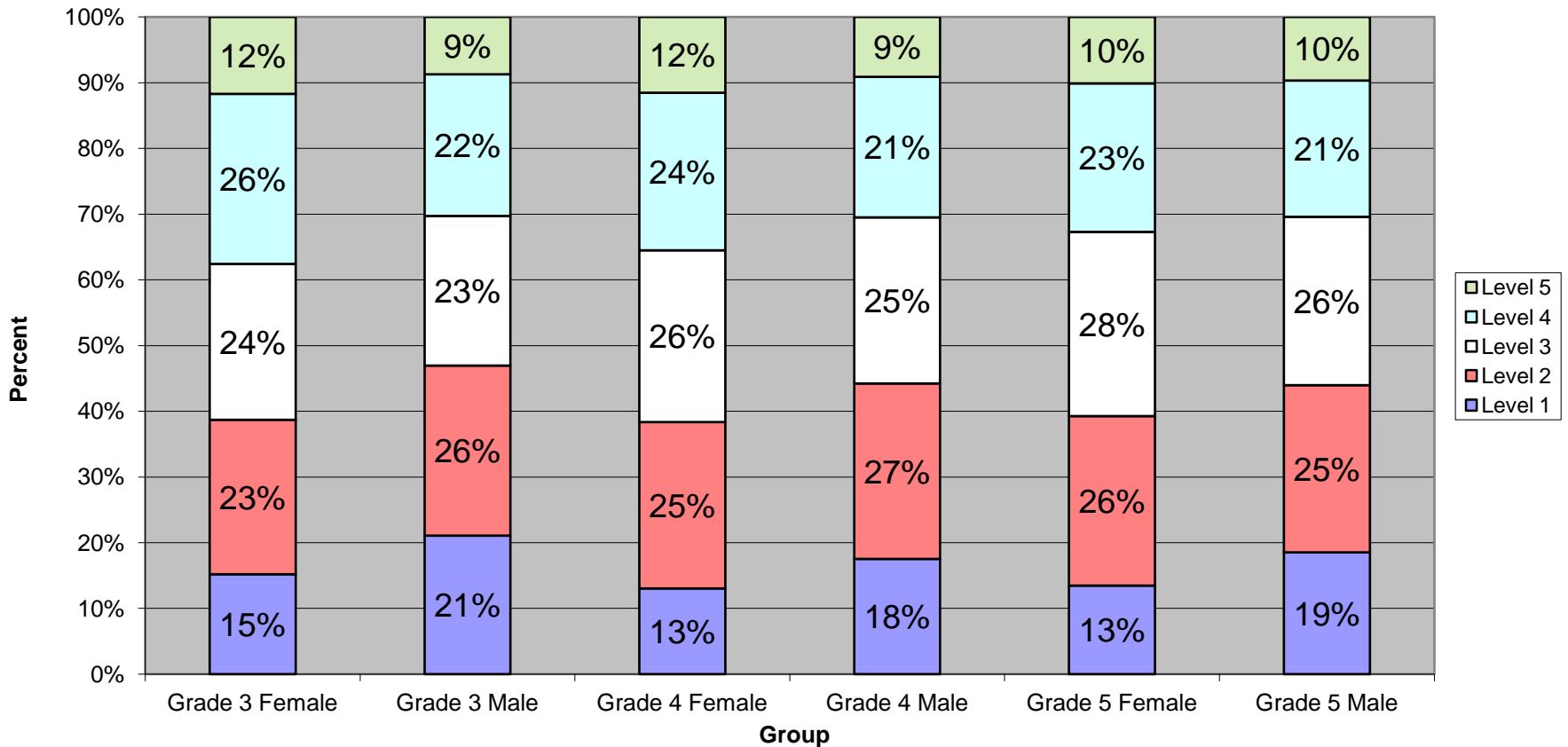


Proposed Rule Impact Data (by Subgroup)

Reading

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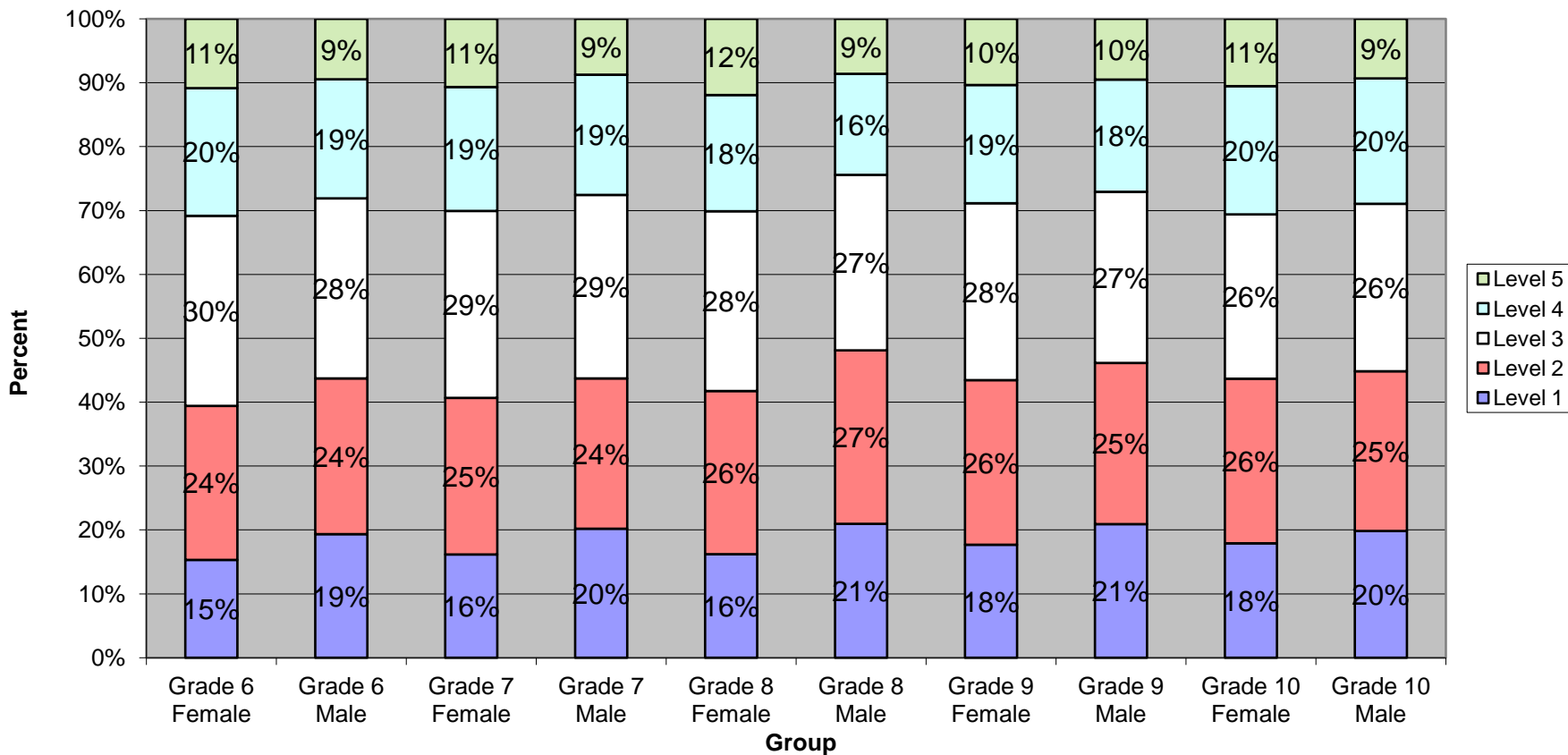
Grades 3, 4, and 5 Reading AL Percentages



Proposed Rule Impact Data (by Subgroup) Reading

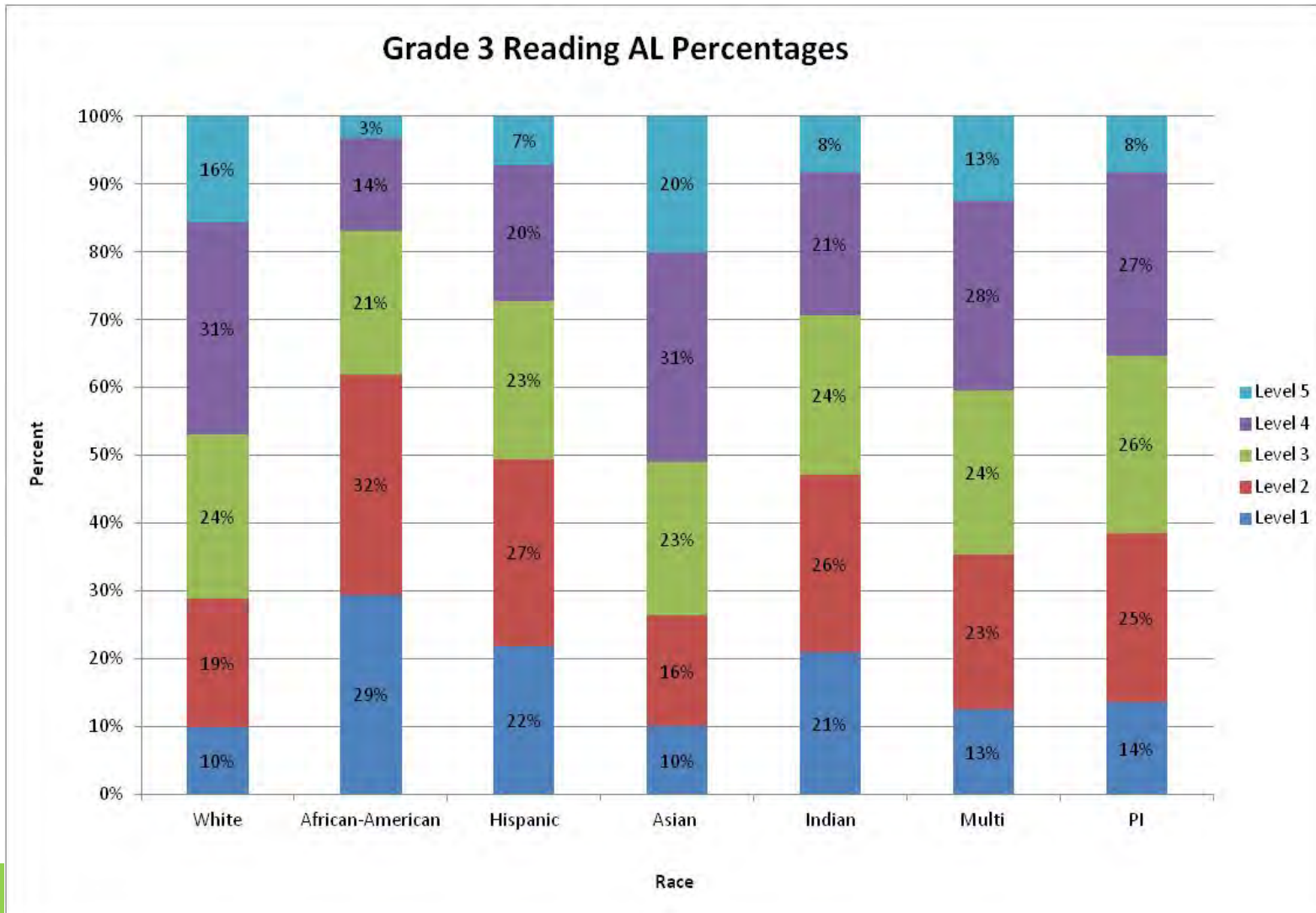
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Grades 6, 7, 8, 9, and 10 Reading AL Percentages



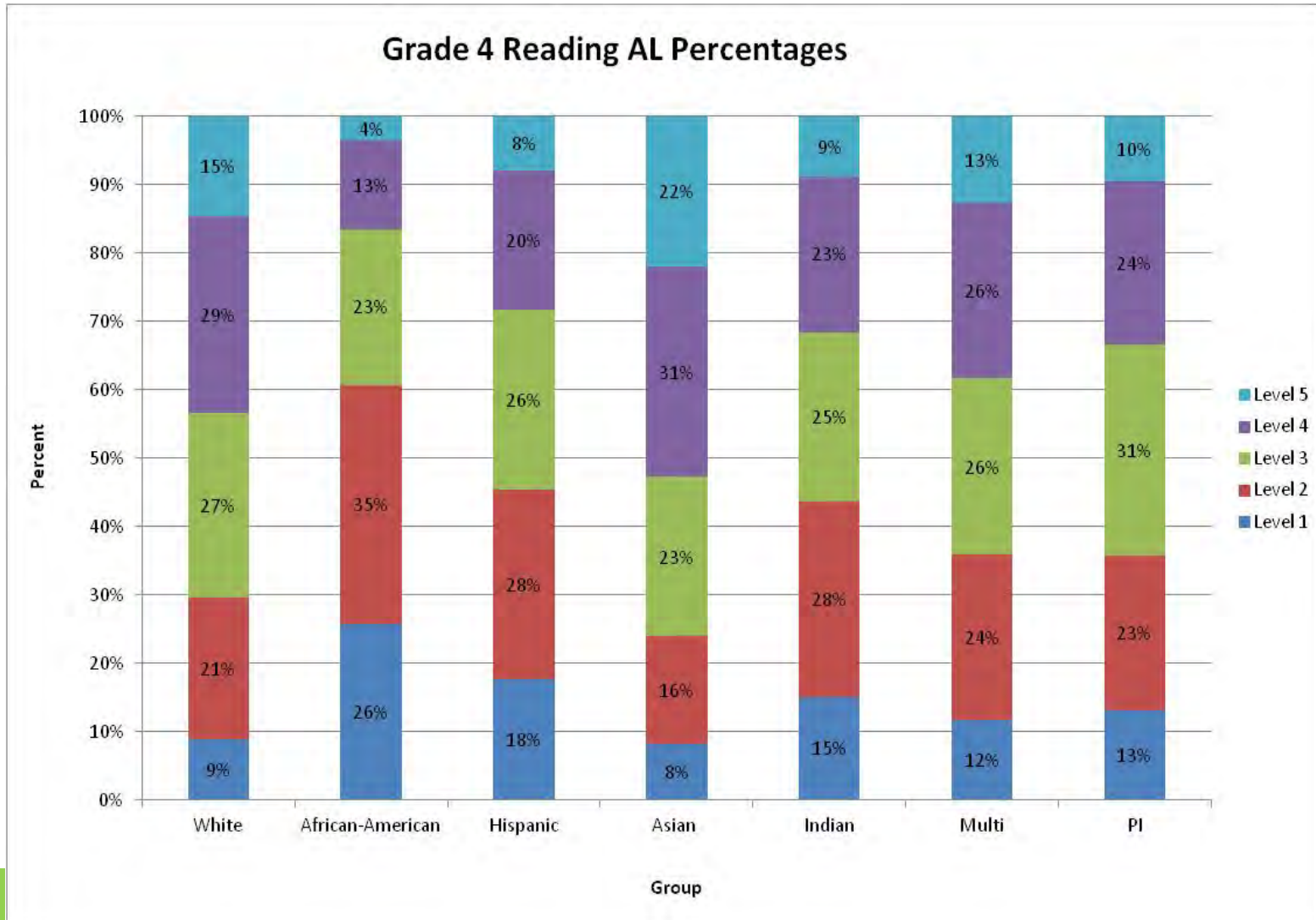
Proposed Rule Impact Data (by Subgroup) Reading

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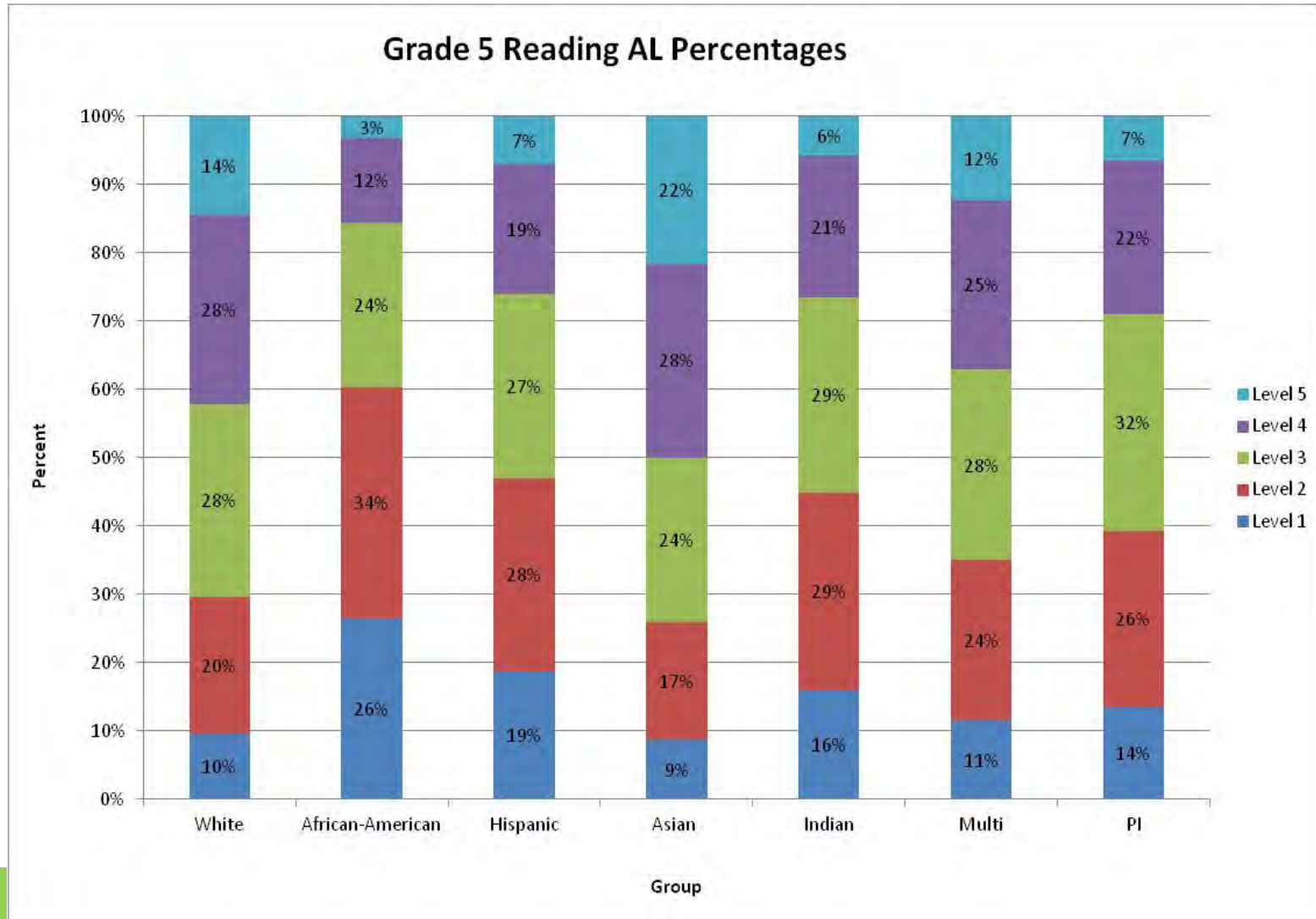
Proposed Rule Impact Data (by Subgroup) Reading

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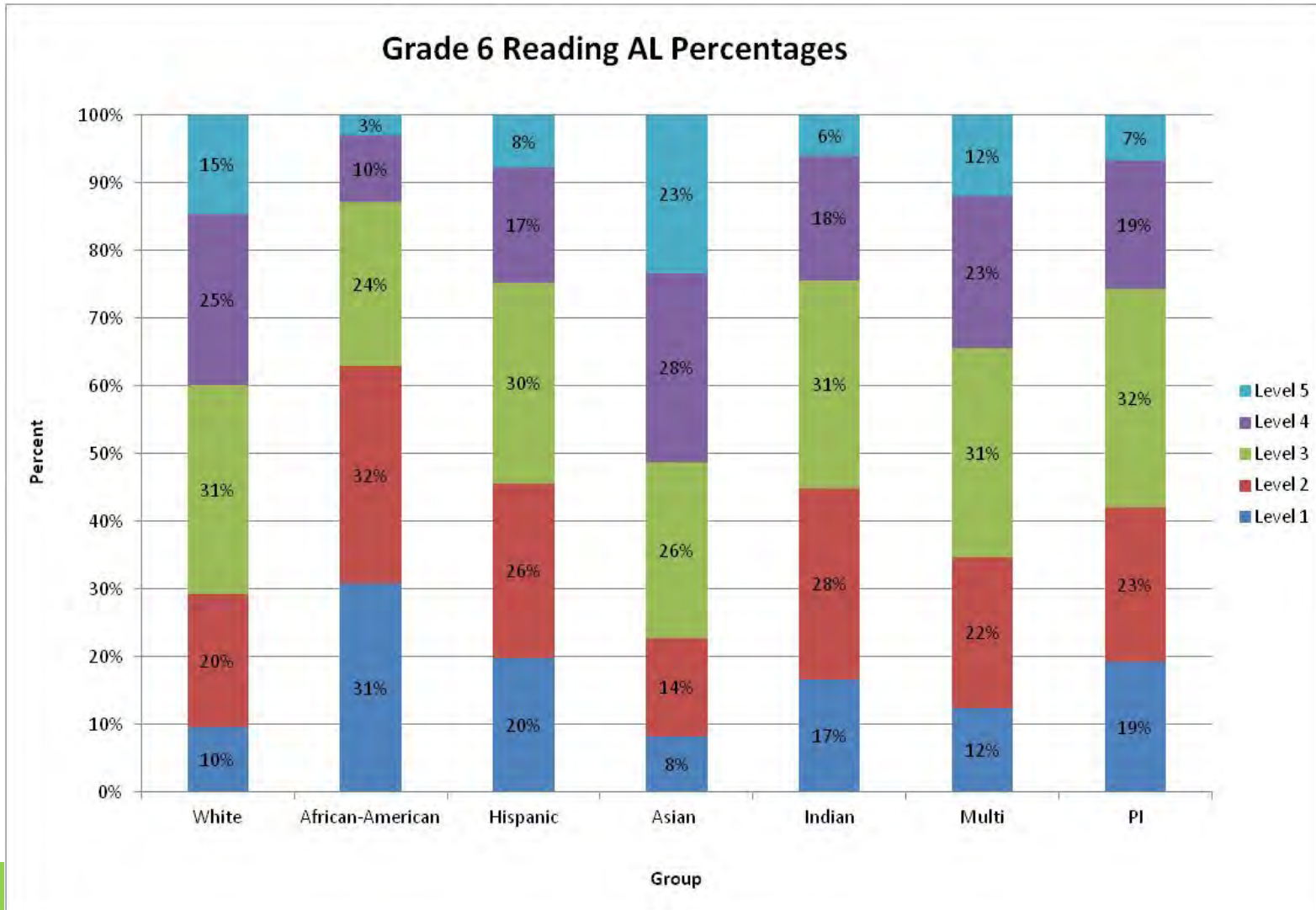
Proposed Rule Impact Data (by Subgroup) Reading

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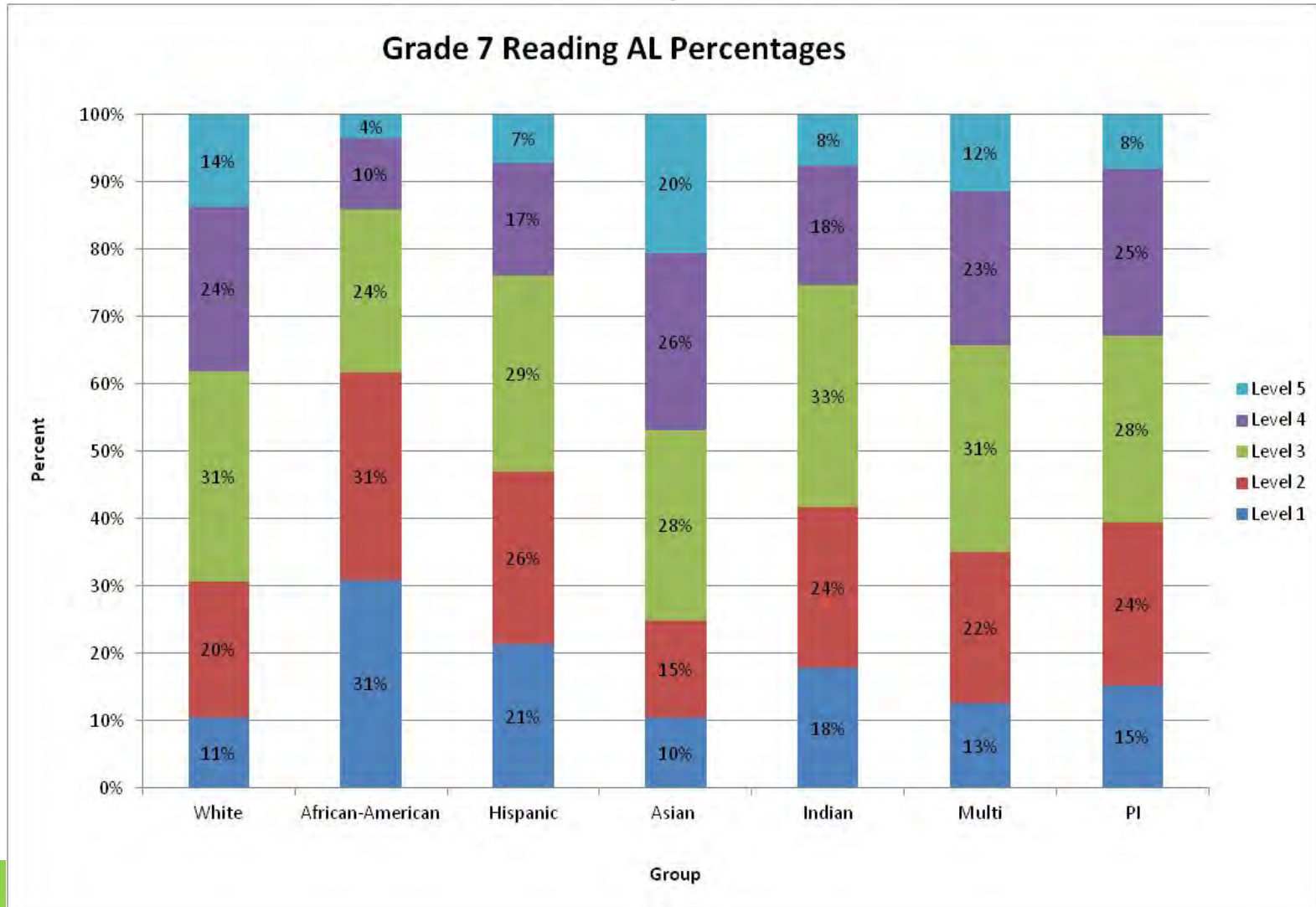
Proposed Rule Impact Data (by Subgroup) Reading

54



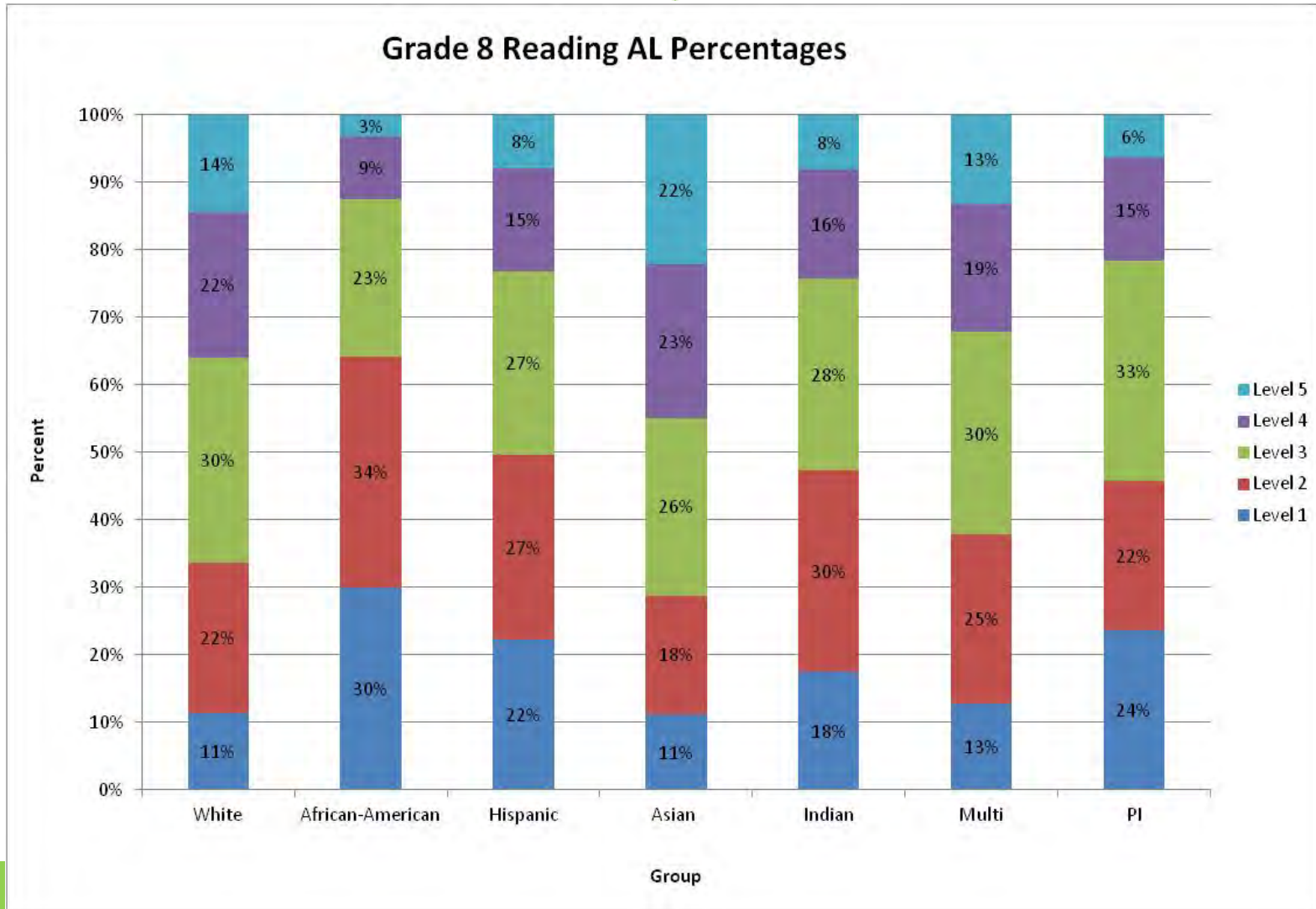
Proposed Rule Impact Data (by Subgroup) Reading

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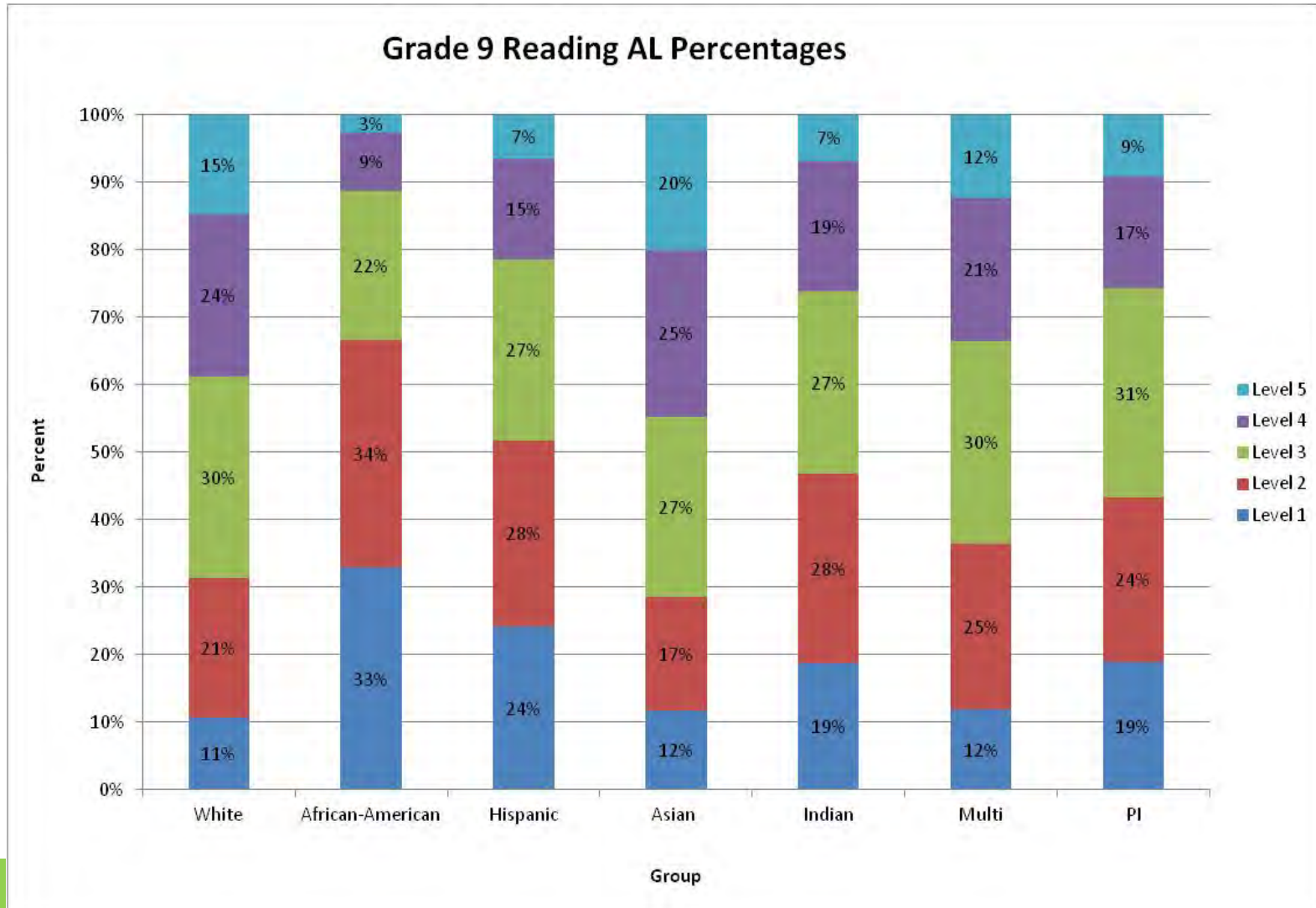
Proposed Rule Impact Data (by Subgroup) Reading

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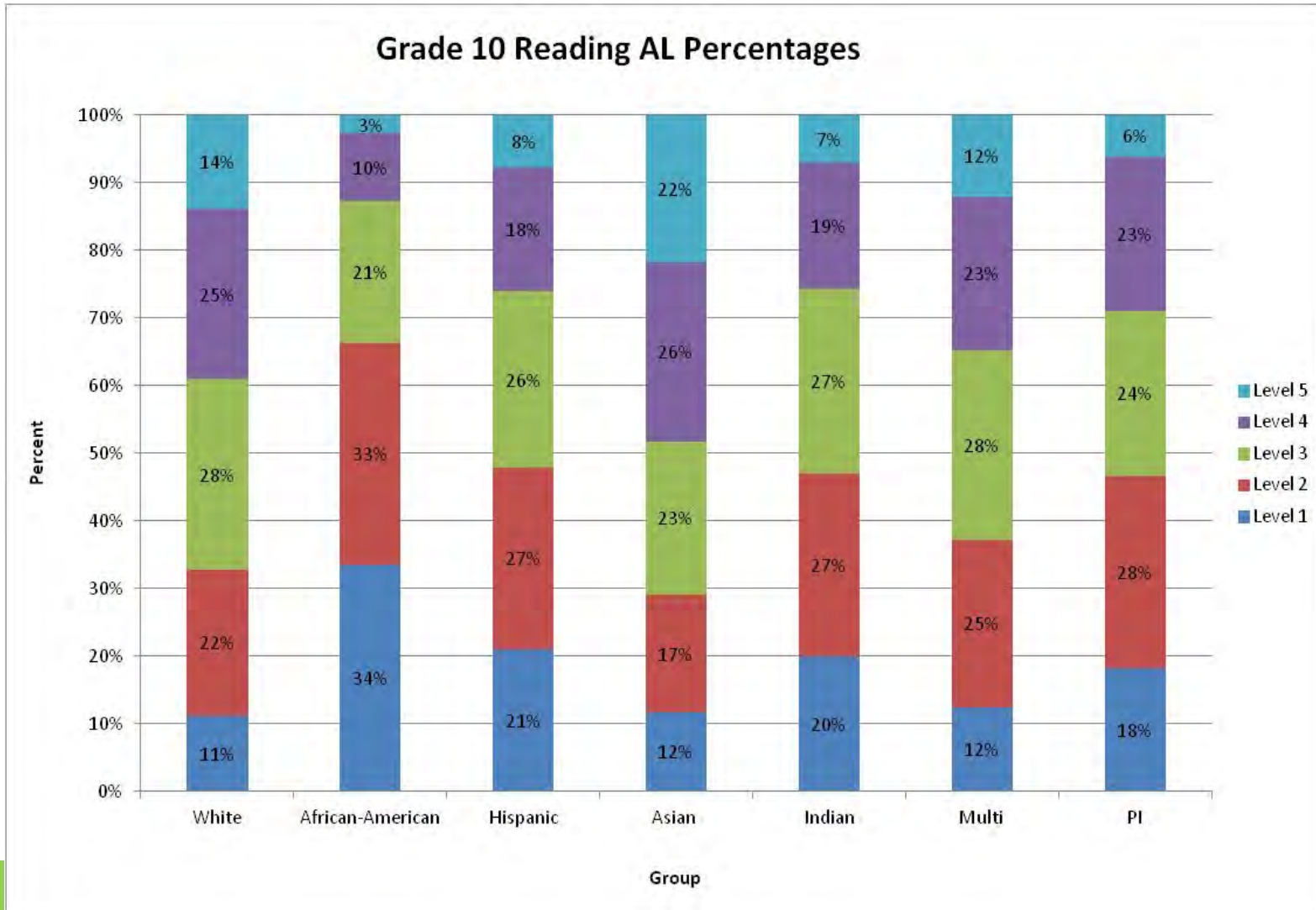
Proposed Rule Impact Data (by Subgroup) Reading

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Proposed Rule Impact Data (by Subgroup) Reading

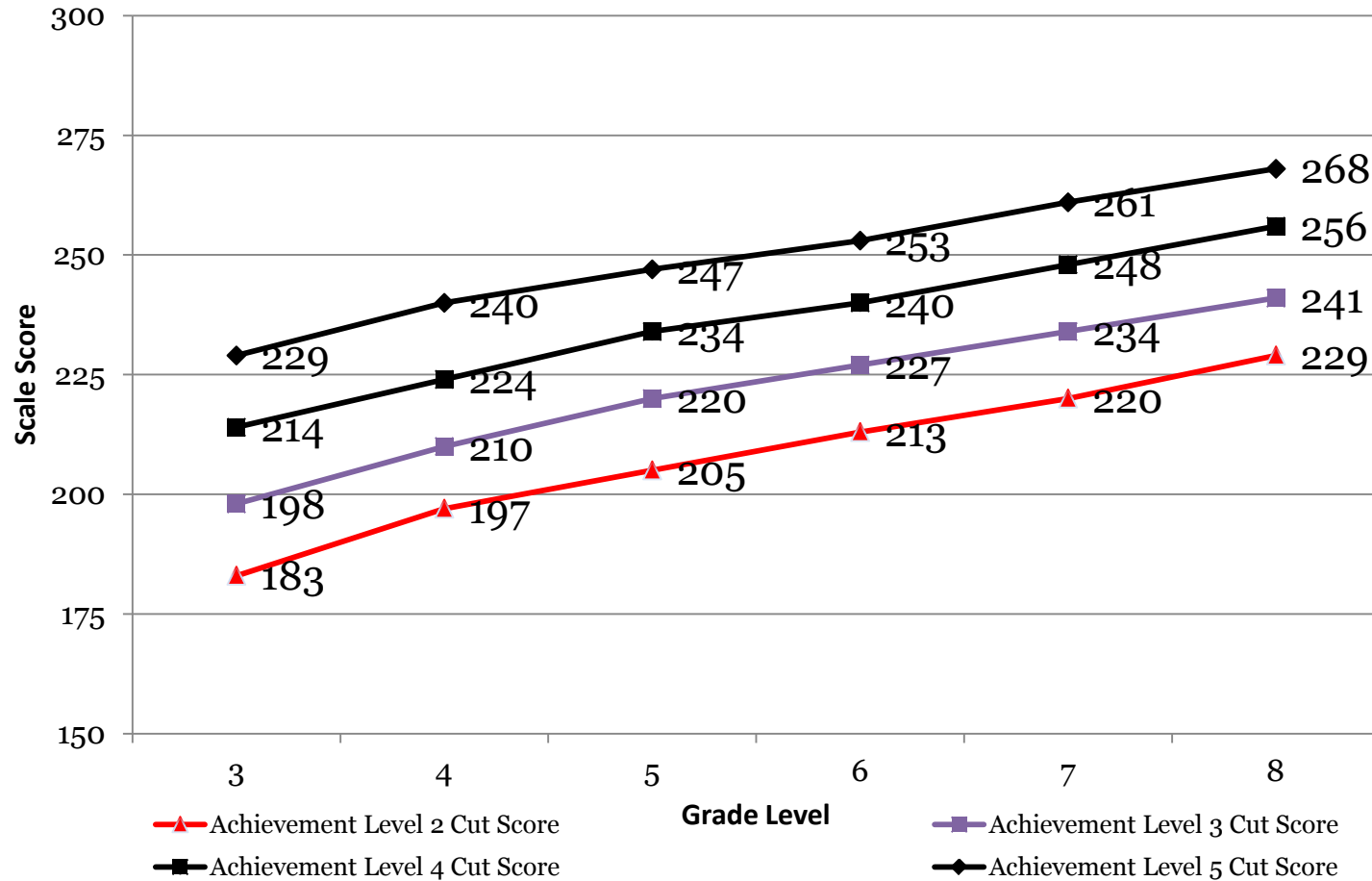
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Scale Scores – Mathematics, Proposed Rule

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Proposed FCAT 2.0 Mathematics Scale Score Cuts - Proposed Rule, 10/7/11



Scale Scores – Algebra 1 EOC Assessment, Proposed Rule



Achievement Level Scale Score Cuts

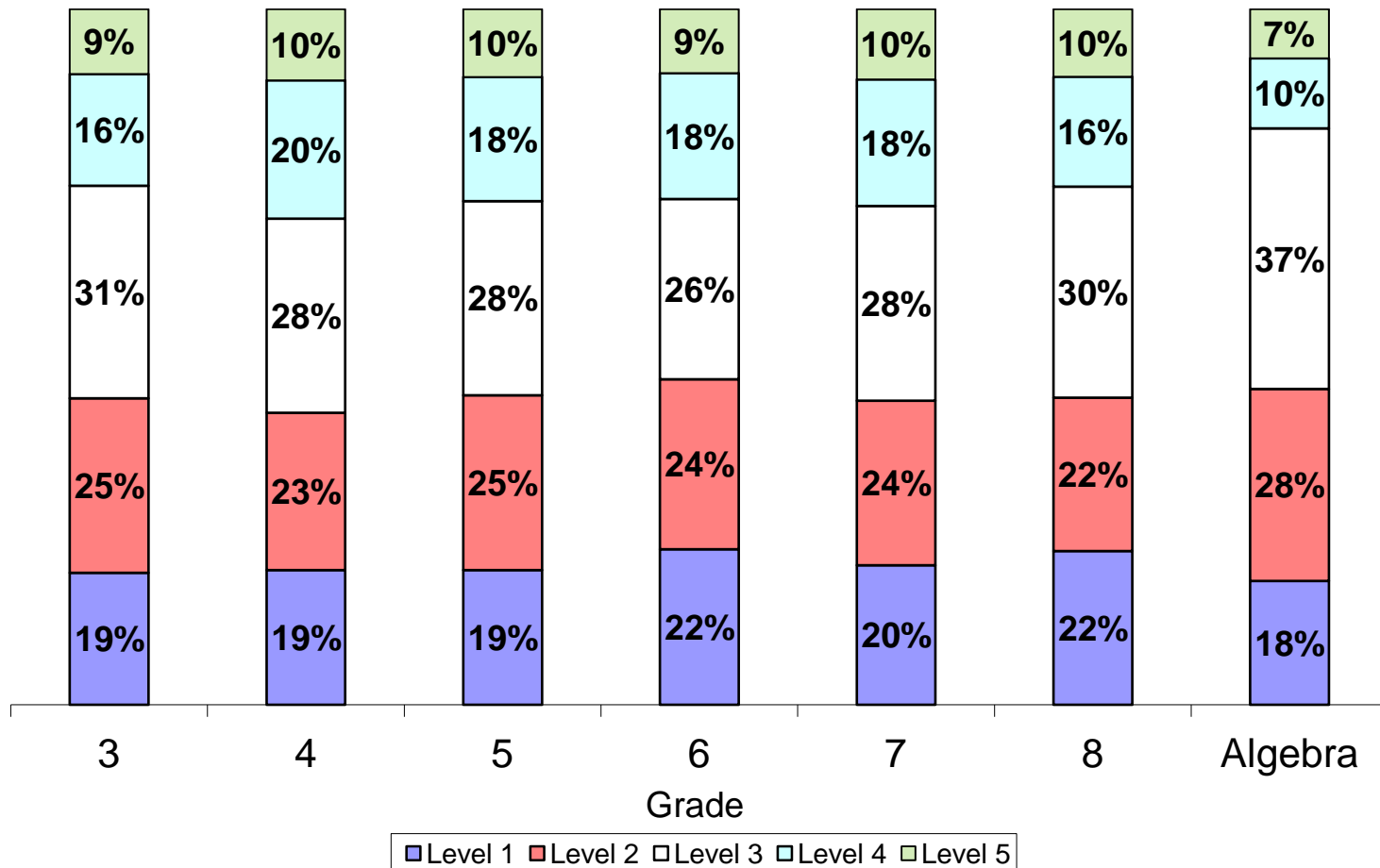
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Recommended College-Ready Cut Score – Achievement Level 3

Impact Data – Mathematics, Proposed Rule

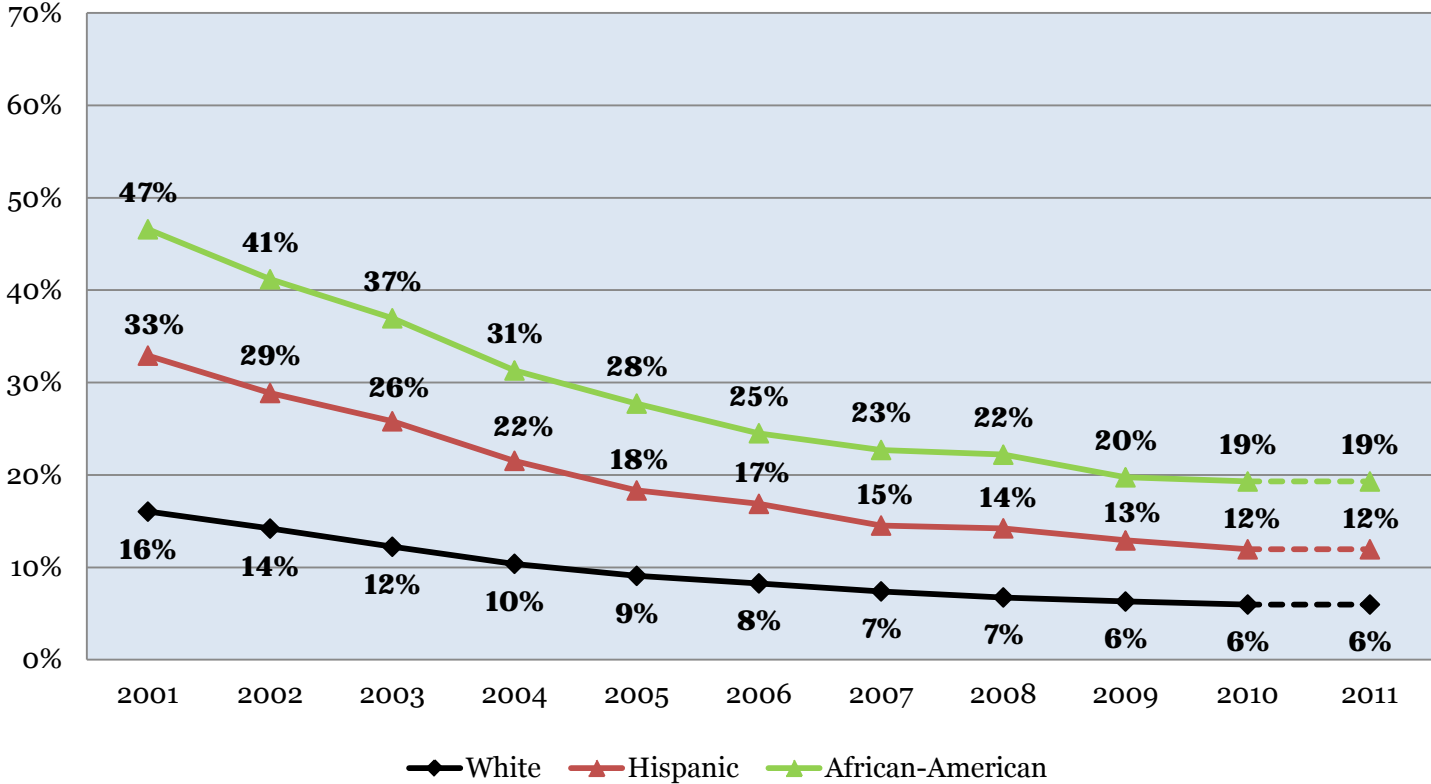
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Percentage in each Achievement Level - Proposed Rule,
10/7/11



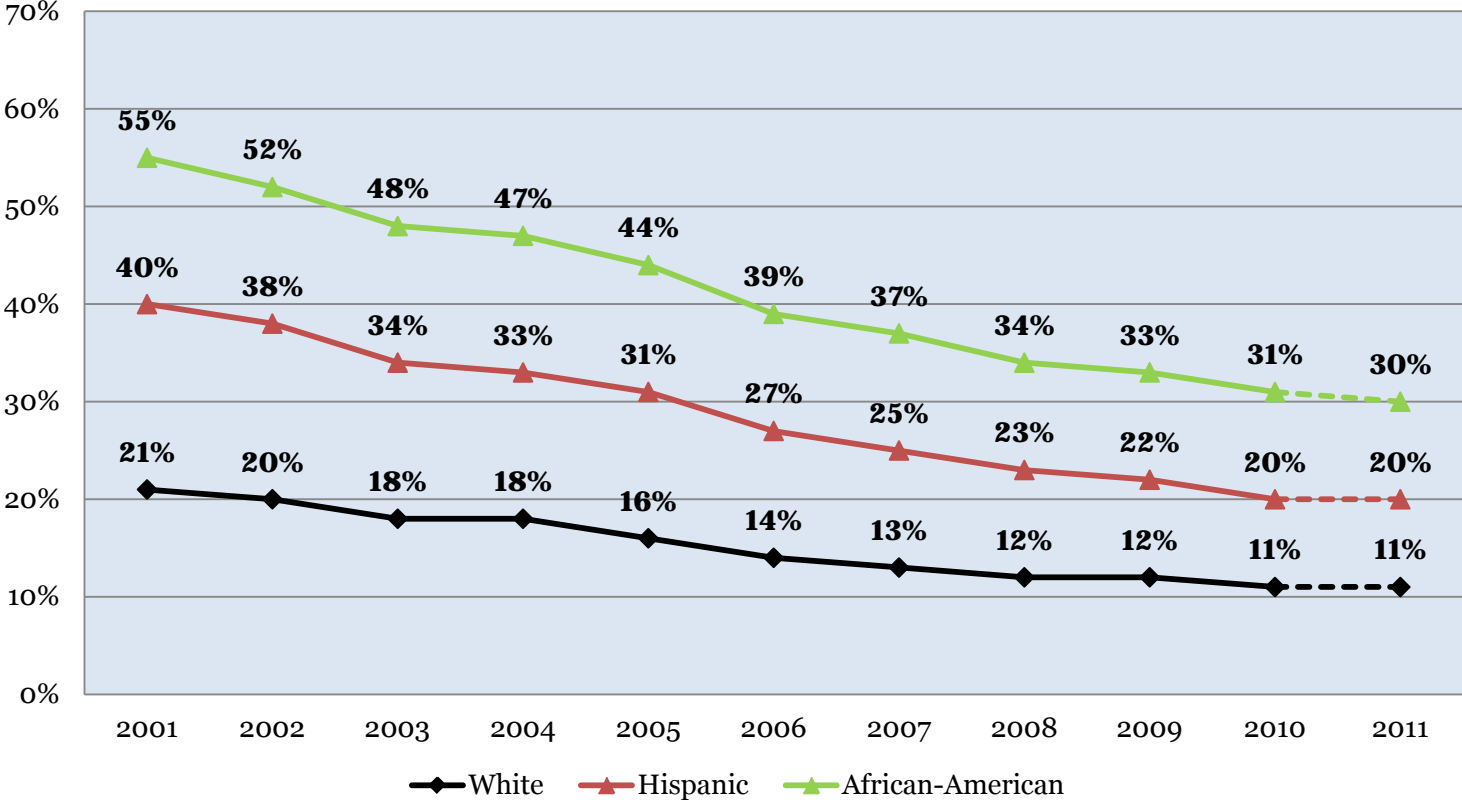
Historical Data – FCAT Mathematics

**FCAT Mathematics (2001-2010) and FCAT 2.0 Mathematics (2011)
Achievement Level 1
Grades 3, 4, and 5**



Historical Data – FCAT Mathematics

**FCAT Mathematics (2001-2010) and FCAT 2.0 Mathematics (2011)
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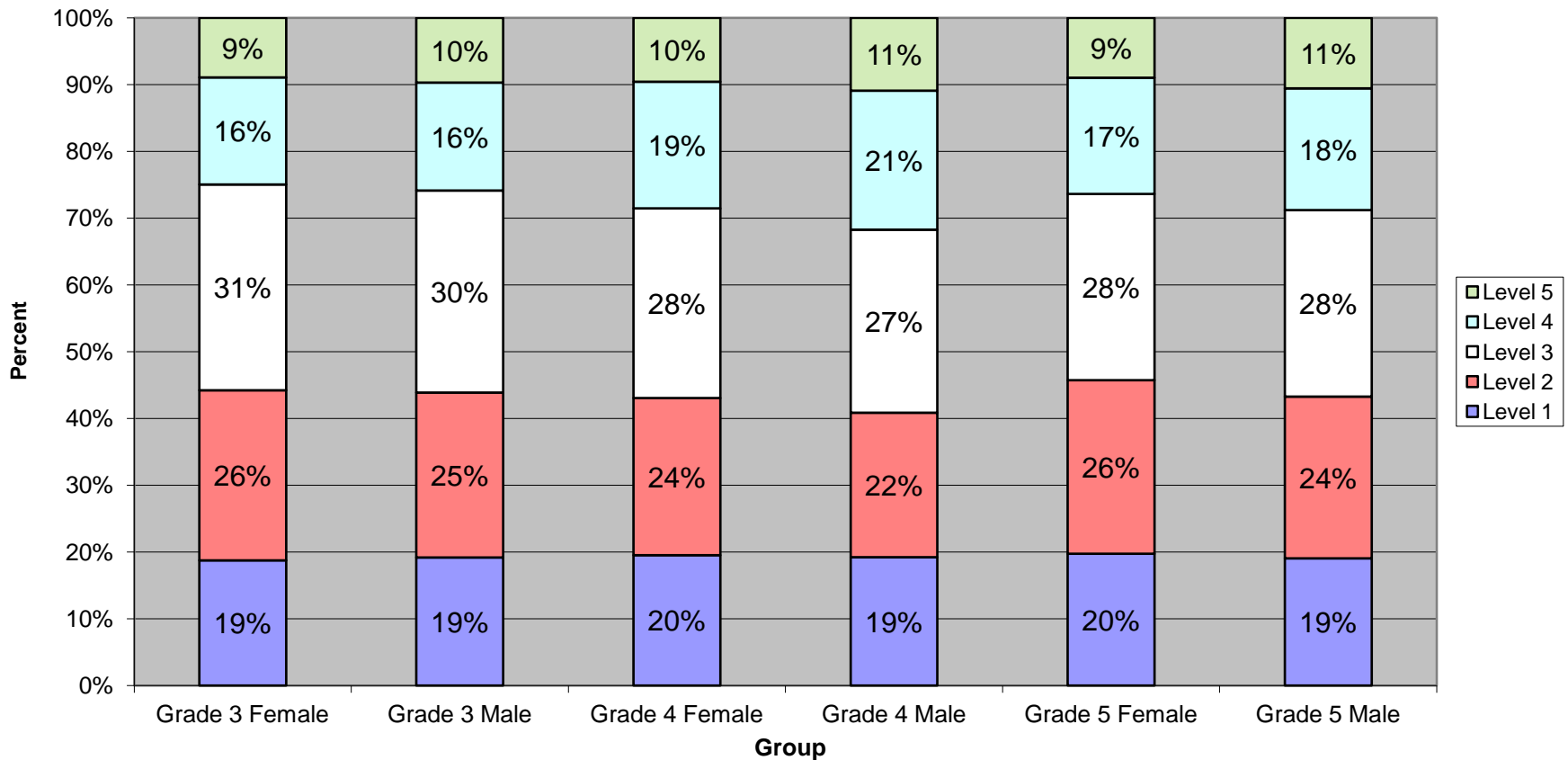


Proposed Rule Impact Data (by Subgroup)

Mathematics

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Grades 3, 4, and 5 Mathematics AL Percentages

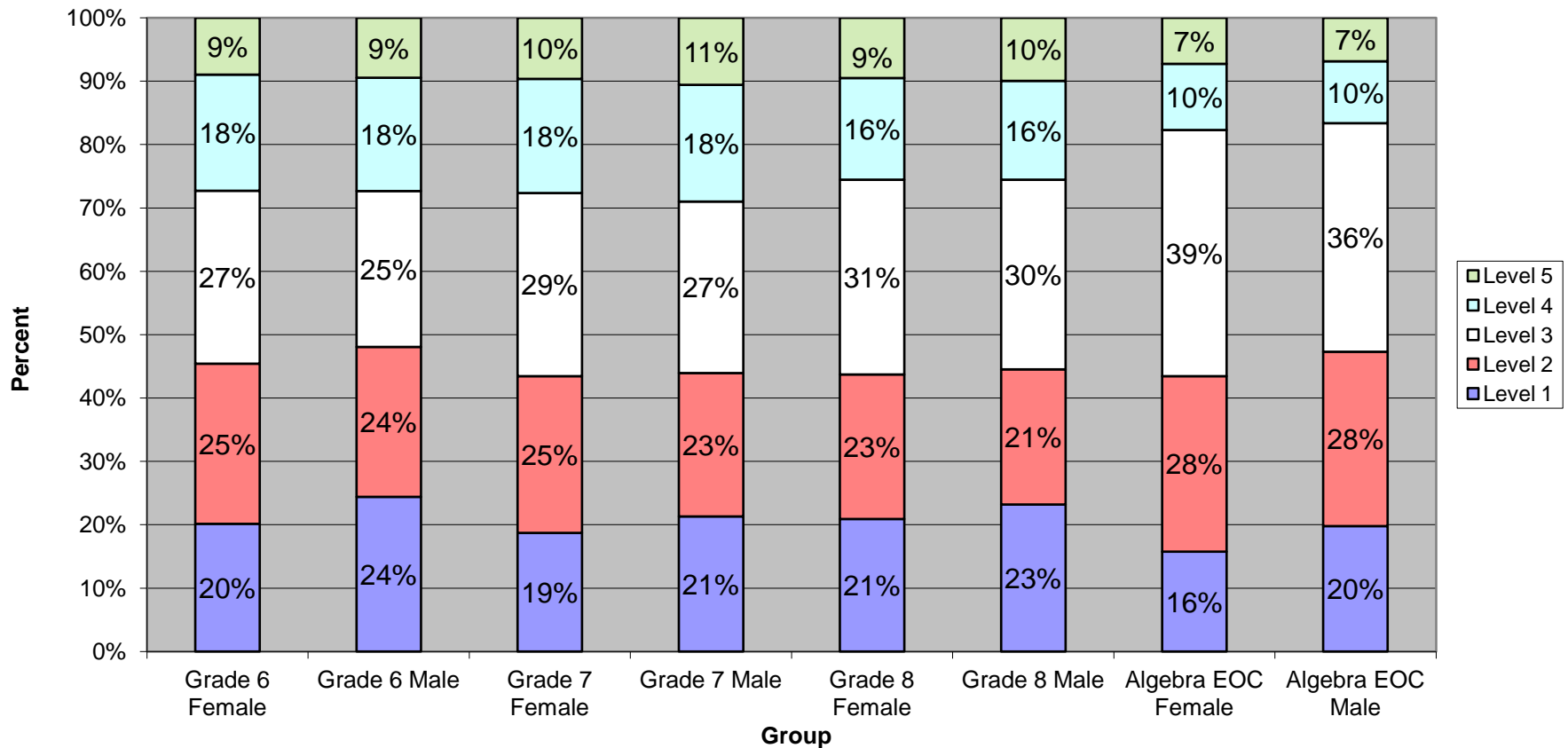


Proposed Rule Impact Data (by Subgroup)

Mathematics

65

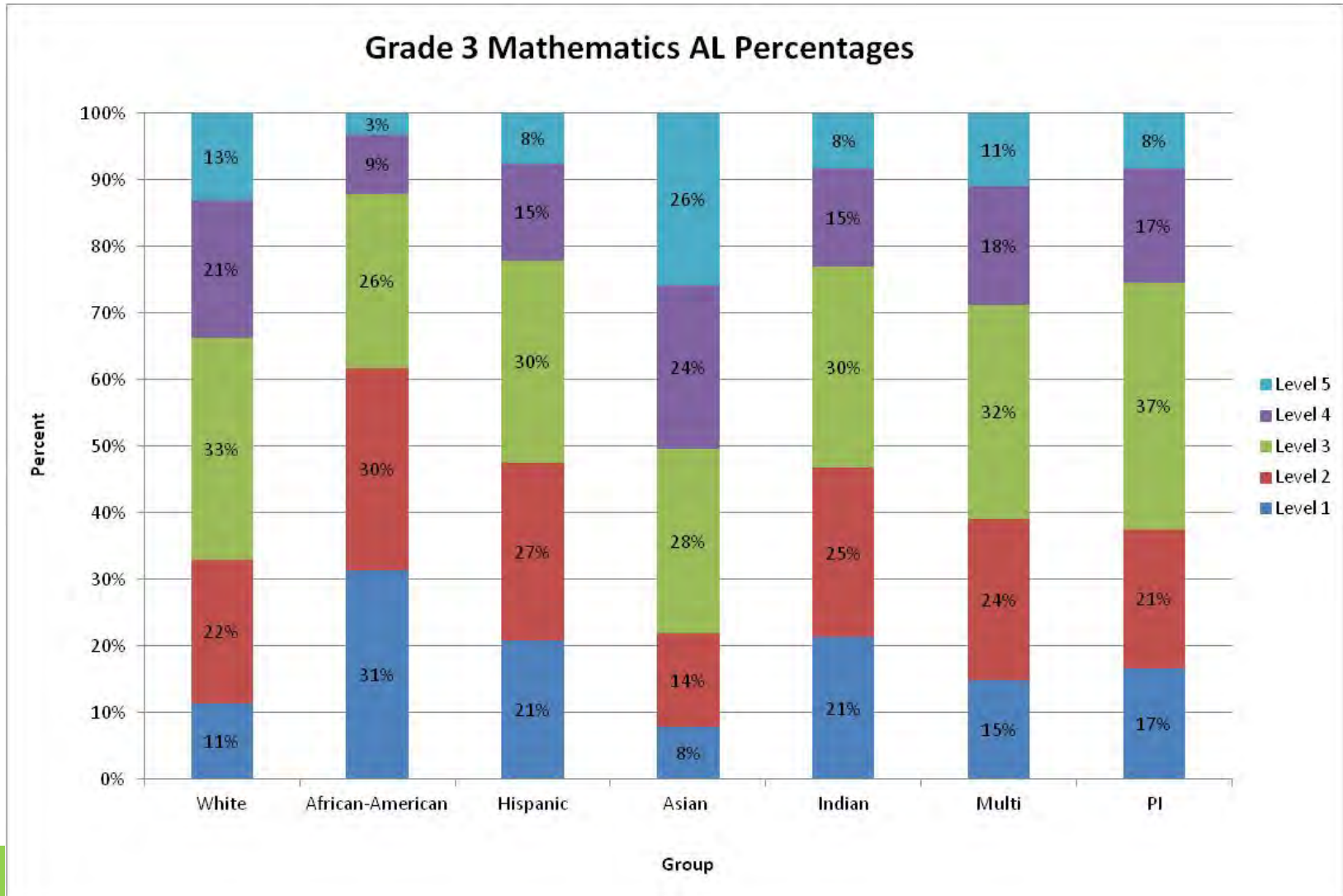
Grades 6, 7, 8 Mathematics and Algebra EOC AL Percentages



Proposed Rule Impact Data (by Subgroup)

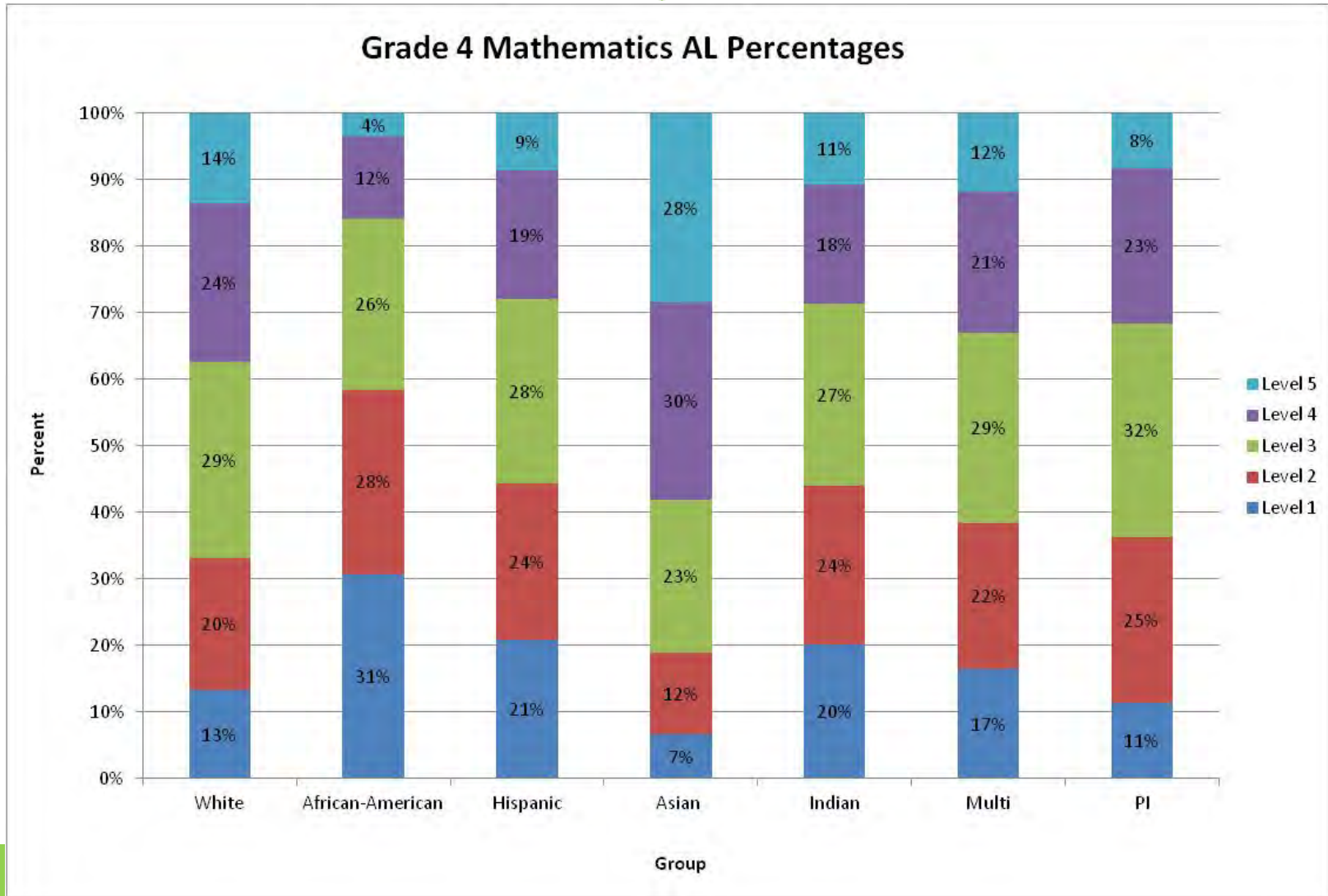
Mathematics

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Proposed Rule Impact Data (by Subgroup) Mathematics

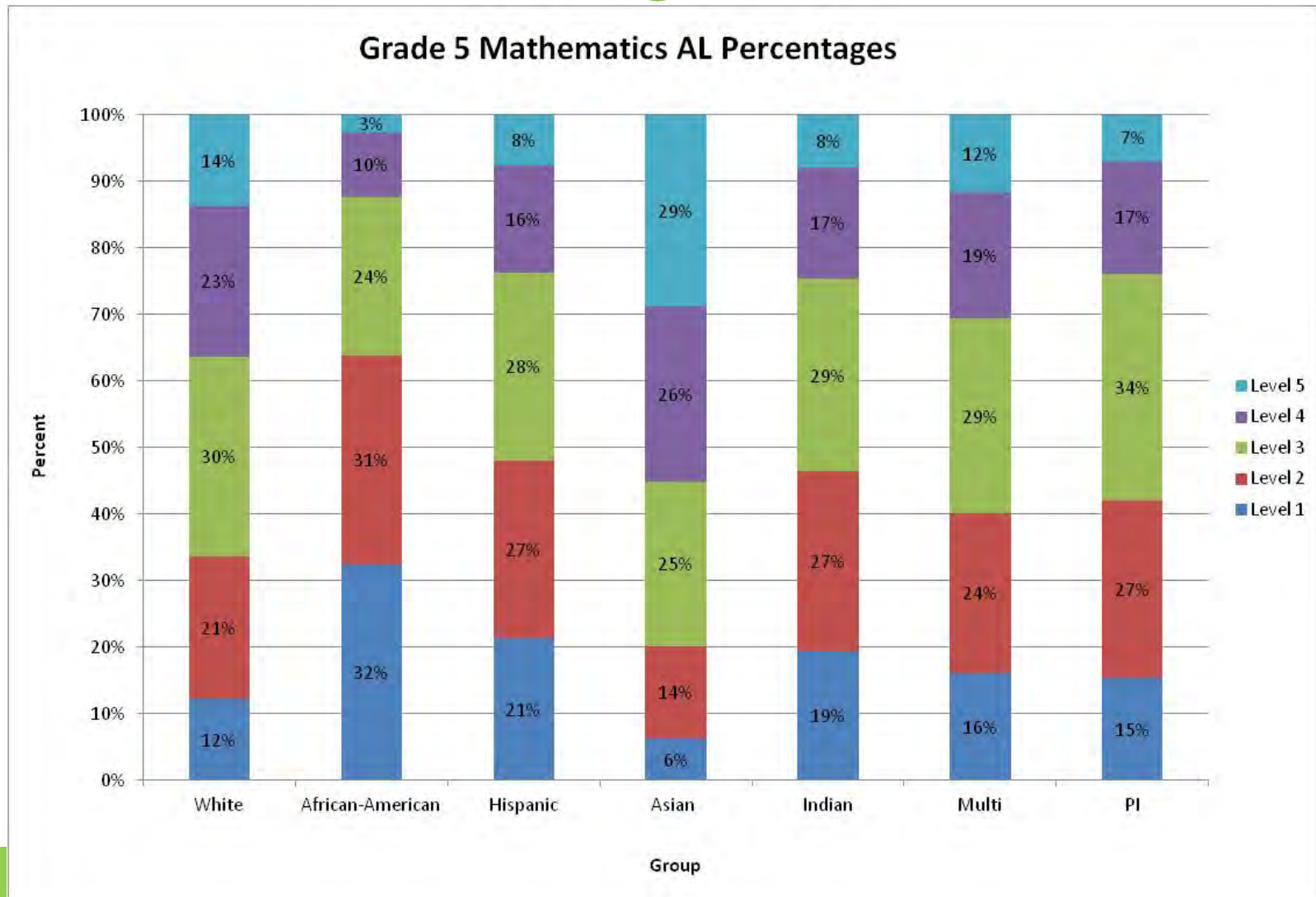
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Proposed Rule Impact Data (by Subgroup)

Mathematics

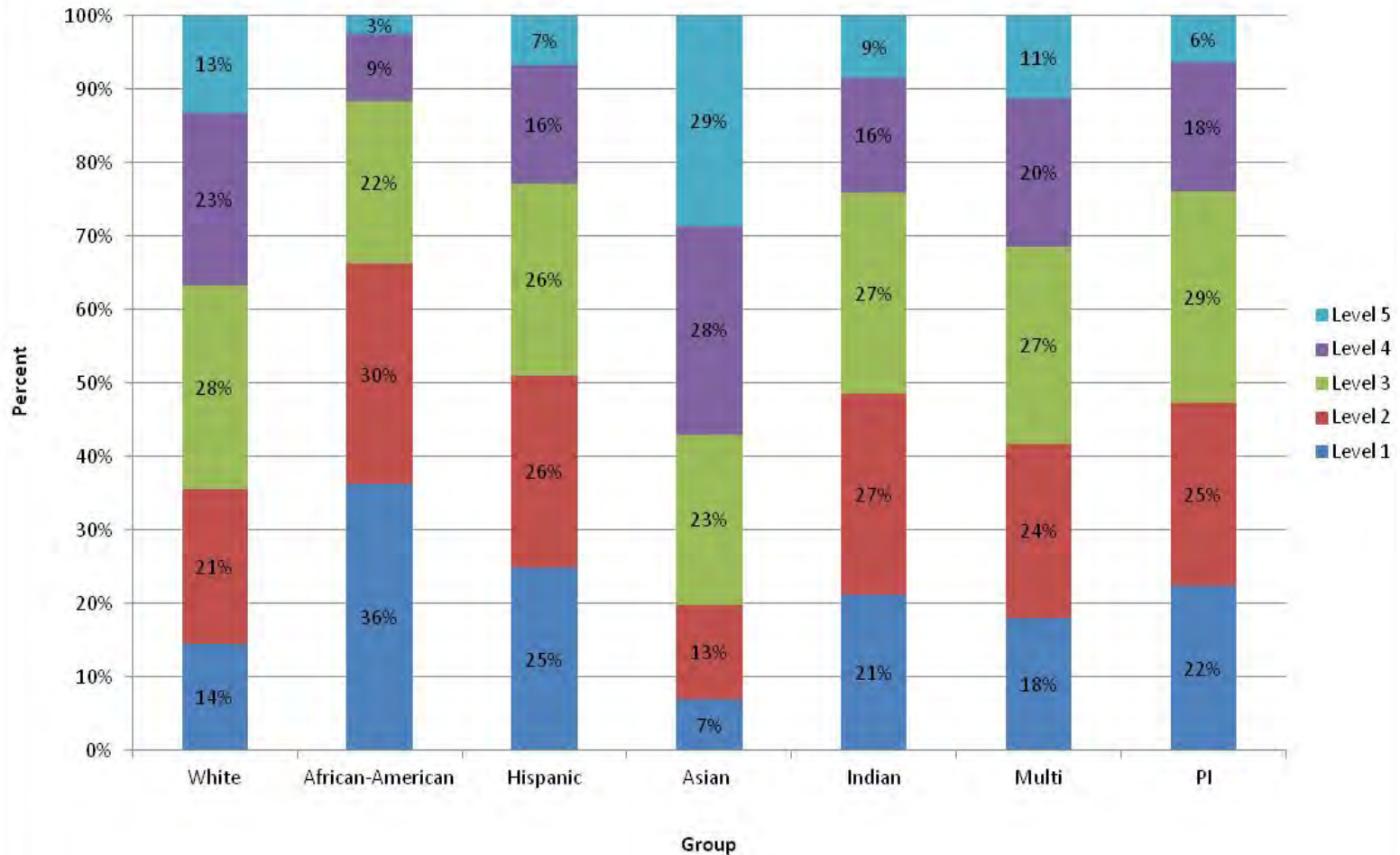
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Proposed Rule Impact Data (by Subgroup) Mathematics

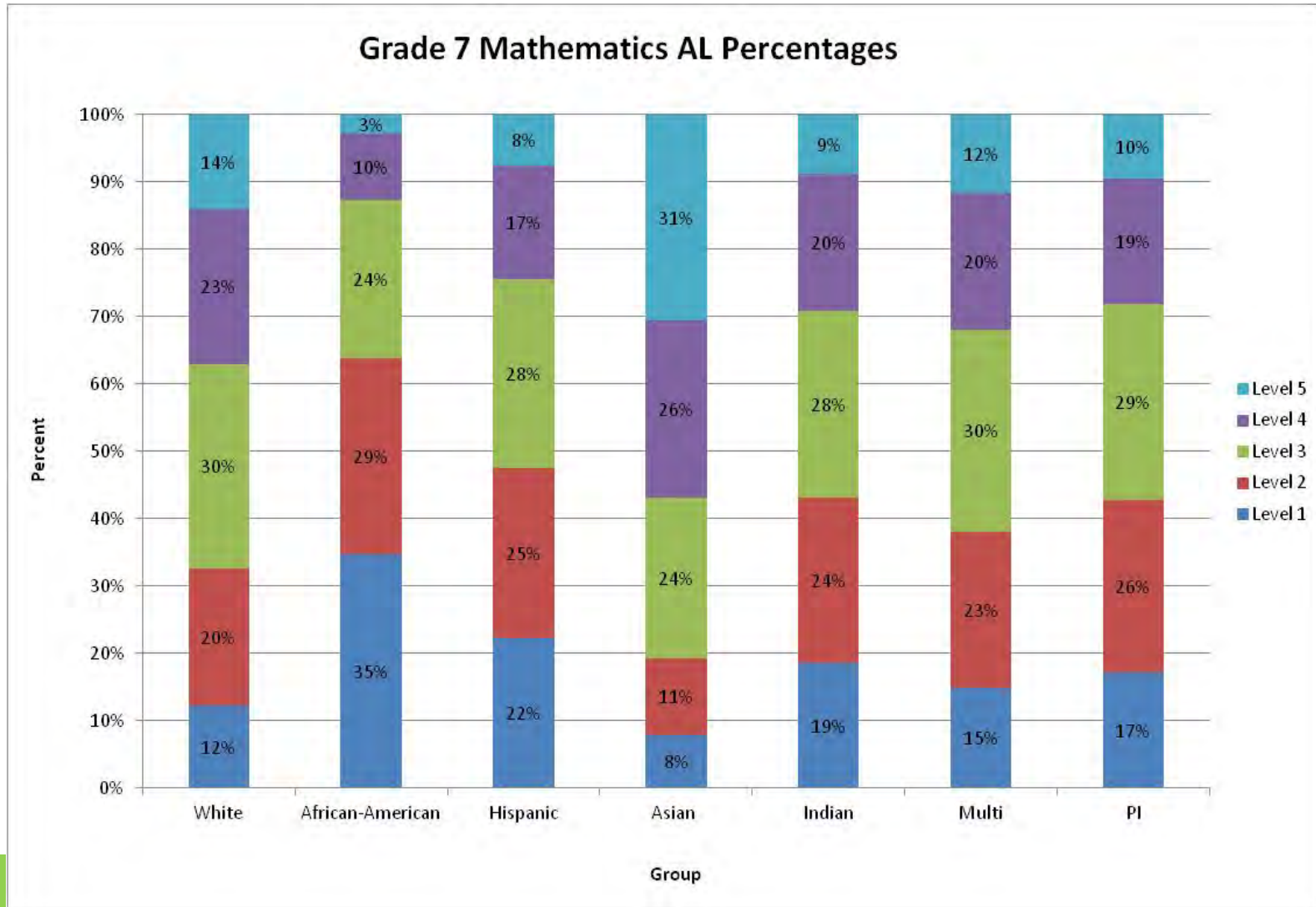
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Grade 6 Mathematics AL Percentages



Proposed Rule Impact Data (by Subgroup) Mathematics

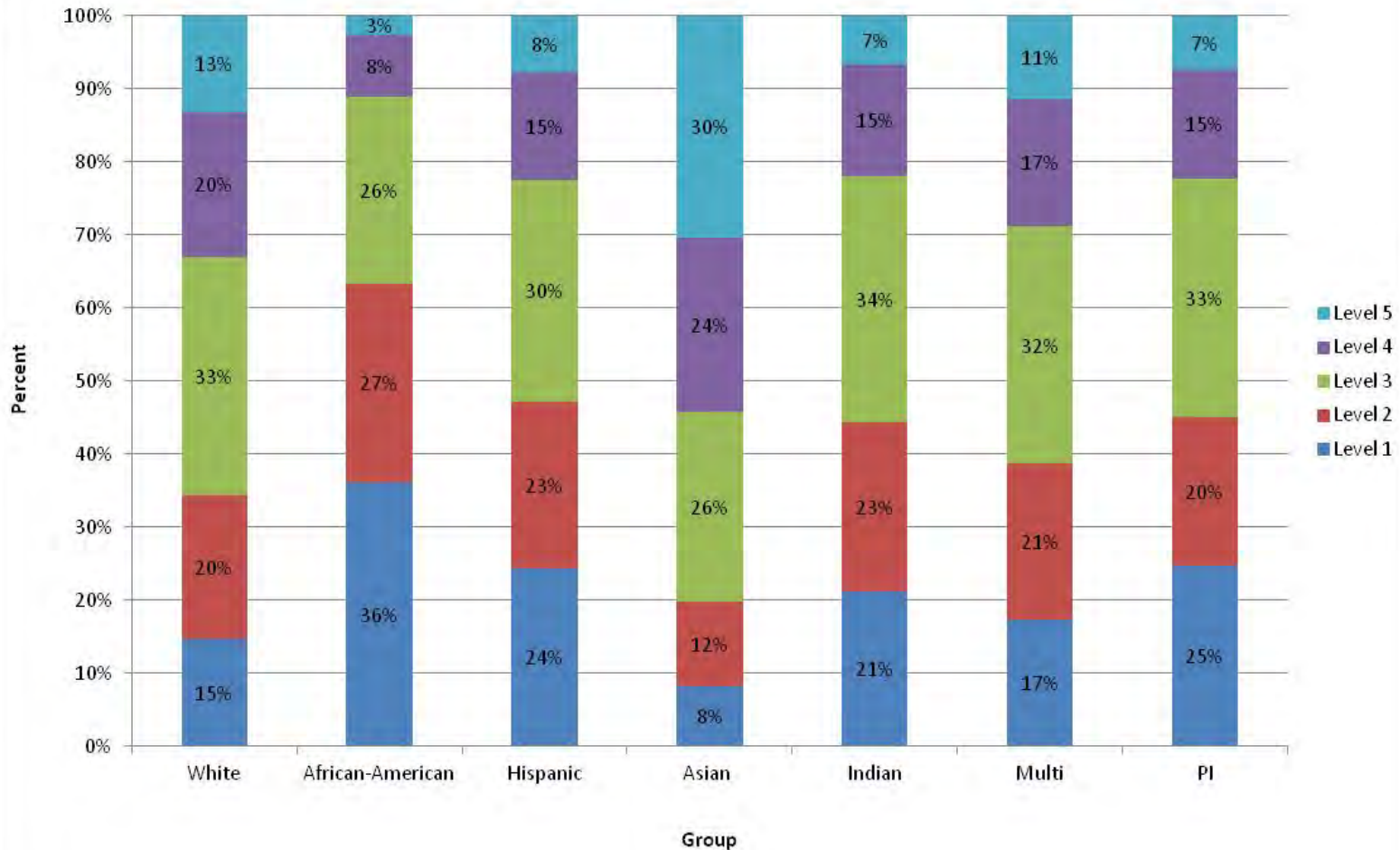
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Proposed Rule Impact Data (by Subgroup) Mathematics

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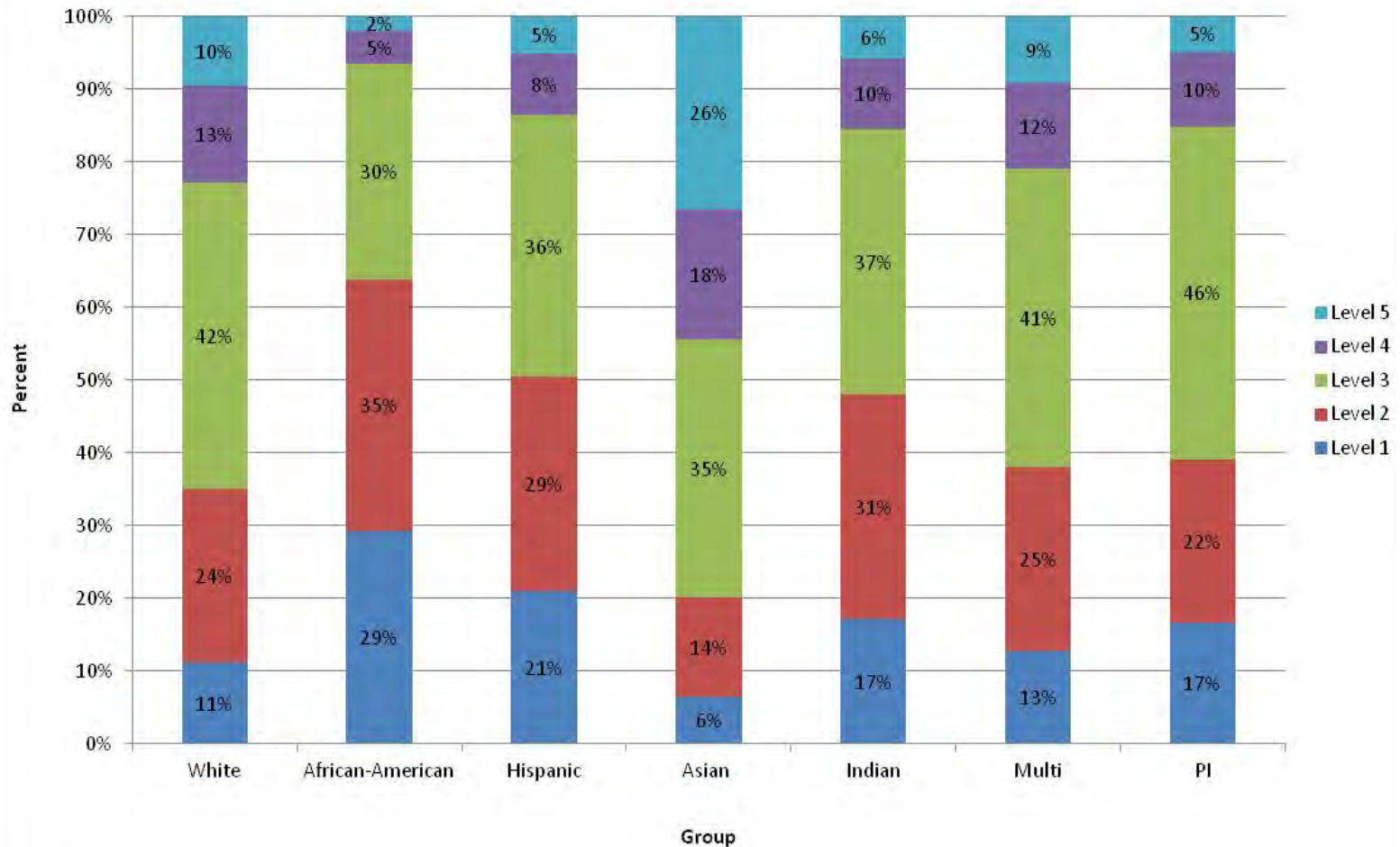
Grade 8 Mathematics AL Percentages



Proposed Rule Impact Data (by Subgroup) Mathematics

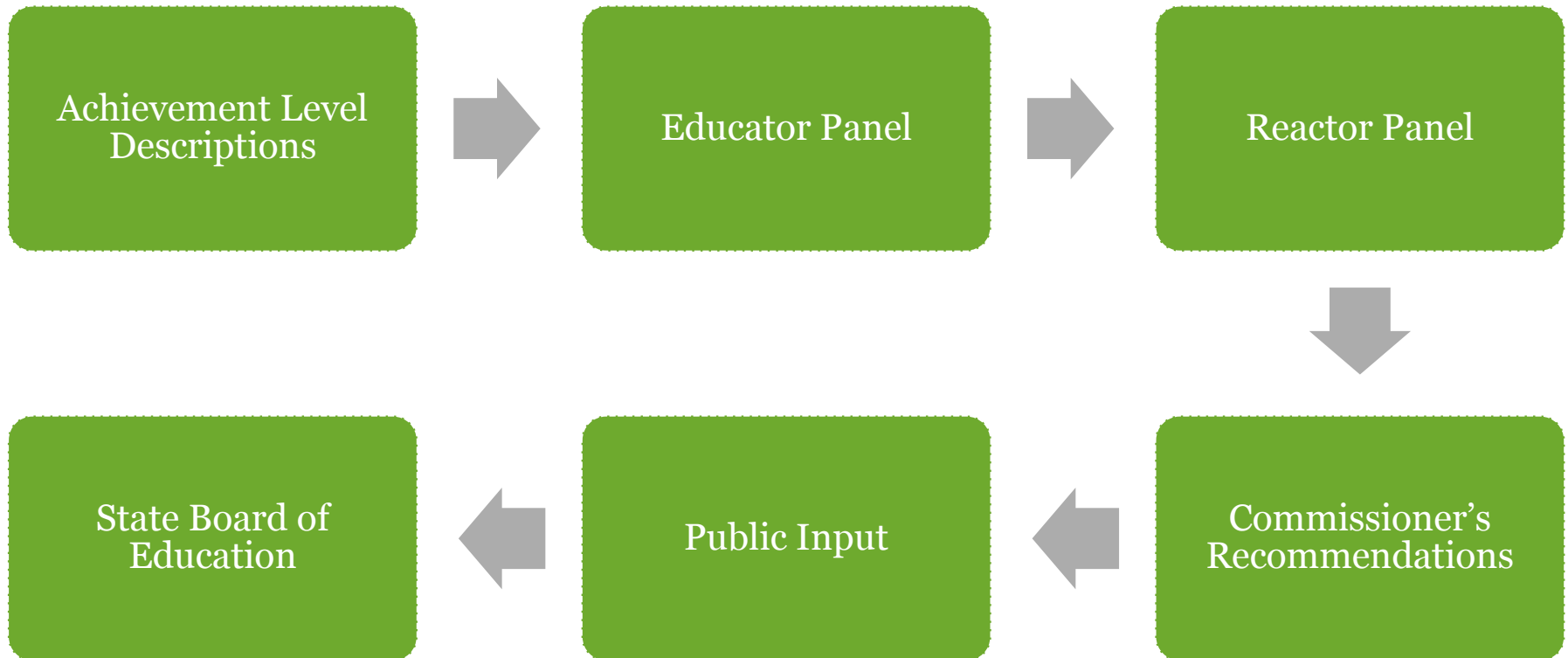
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Algebra EOC AL Percentages



Setting Standards is a Multi-Stage Process

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Standard-Setting Timeline

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Month/Year	Task
August 2011	Advertise Intent to Revise FCAT Rule
September 19-23, 2011	Conduct Standard-Setting Meetings – Orlando, FL 15-20 Educators per Subject/Grade (15 panels)
September 29-30, 2011	Conduct Reactor Panel Meeting – Tallahassee, FL 20-25 Superintendents and Community Leaders (1 panel)
October 2011	Conduct Rule-Development Workshops and Advertise Proposed State Board of Education FCAT Rule
December 2011	State Board of Education Rule Adoption – New Achievement Levels for FCAT 2.0 Reading, Mathematics, and Algebra 1 EOC Assessment

Your turn to provide input...

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- For each grade and subject:
 - Review recommendations and impact data
 - Reflect
 - Provide input on the proposed cut scores. Options...
 - ✦ Higher – Move the cut score higher to increase expectations (fewer students classified as proficient)
 - ✦ No Change – Maintain proposed cut scores
 - ✦ Lower – Move the cut score lower to lower expectations (more students classified as proficient)
 - Provide written comments as desired