

MATH STANDARD PERFORMANCE SETTING FOR GRADES 3-8

BACKGROUND

The State Board of Education (SBE) is required, under RCW 28A.305.130(4)(b),¹ to develop performance standards and levels for the statewide assessments. To develop these standards and levels, the SBE will work in collaboration with the Office of Superintendent of Public Instruction (OSPI). OSPI, along with its National Technical Advisory Committee, is currently developing the math standard setting plan for the new state math assessments “measures of student progress” for grades 3-8.

At the March and May Board meetings, Dr. Joe Willhoft, Assistant Superintendent for Assessment and Student Information and Dr. Tom Hirsch, an OSPI consultant, described the OSPI standard setting process used to align the measurements of student progress to the new math standards for grades 3-8. Standard setting is a formalized process to determine how students need to perform on an assessment to be classified into performance level. The standard setting process had recommendations from multiple sources: A contrasting groups study where teachers rated individual students before tests were given as well as three panels that reviewed the actual math scores: a grade level panel, an articulation pane and a policy advisory panel. Attachment A shows the schedule that OSPI used for the standard setting process.

POLICY CONSIDERATION

OSPI will ask the SBE to consider adoption of the Superintendent’s recommended math cuts scores for grades 3-8 for performance levels of basic, proficient and advanced. OSPI will send each Board member a complete packet of the information that will be presented on Tuesday.

EXPECTED ACTION

Staff recommended motion: Move to approve the cut scores for the performance levels of “Basic”, “Proficient” in grades three through eight as recommended by the Superintendent of Public Instruction.

¹ (RCW 28.A.305.130 (4)(b) Identify the scores students must achieve in order to meet the standard on the Washington Assessment of Student Learning and, for high school students, to obtain a certificate of academic achievement. The board shall also determine student scores that identify levels of student performance below and beyond the standard. The board shall consider the incorporation of the standard error of measurement into the decision regarding the award of the certificates. The board shall set such performance standards and levels in consultation with the superintendent of public instruction and after consideration of any recommendations that may be developed by any advisory committees that may be established for this purpose. The initial performance standards and any changes recommended by the board in the performance standards for the tenth grade assessment shall be presented to the education committees of the house of representatives and the senate by November 30 of the school year in which the changes will take place, to permit the legislature to take statutory action before the changes are implemented, if such action is deemed warranted by the legislature. The legislature shall be advised of the initial performance standards and any changes made to the elementary level performance standards and the middle school level performance standards.

Standard Setting for Grade 3-8 Mathematics MSP

(July 27 – 30 Grades 3, 5, 7)

(August 2 – 5 Grades 4, 6, 8)

AGENDA

Day 1

9:00 - 9:15	Welcome and Orientation (Total Group)
9:15 - 9:30	Administrative Tasks (Total Group)
9:30 - 9:45	Judge Selection Process and Criteria (Total Group)
9:45 - 10:15	Description of Standard Setting Process (Total Group) <ul style="list-style-type: none">• Purpose of Assessments• Overview of Standard Setting Process• Role of Standard Setting Panels
10:15 - 10:30	<i>Break</i>
10:30 - 11:00	Review of the Agenda
11:00 - 12:00	Review of Assessments (Total Group) <ul style="list-style-type: none">• Assessment Development Process• Content, Item Development, Test Blueprint
12:00 - 1:00	<i>Lunch</i>
1:00 - 1:45	Taking the Assessment (Grade-level Groups)
1:45 - 2:00	Scoring the Assessment (Grade-level Groups)
2:00 - 2:15	<i>Break</i>
2:15 - 3:45	Review of the Performance Level Descriptors (Grade-level Groups) <ul style="list-style-type: none">• Staff Presentation• Small Table Discussion
3:45 - 4:00	Closing Remarks (Total Group)

Day 2

9:00 - 9:15	Opening Remarks (Total Group)
9:15 - 10:15	Continued Small Table Discussion of PLDs (Grade-level Groups)
10:15 - 10:30	<i>Break</i>
10:30 - 11:30	Total Grade Level Group Discussion (Grade-level Groups)
11:30 - 12:00	Description of Contrasting Groups (Total Group)
12:00 - 1:00	<i>Lunch</i>
1:00 - 1:30	Summary of Standard Setting Procedure (Total Group)
1:30 - 2:15	Sample Practice Standard Setting (Grade-level Groups)
2:15 - 2:30	<i>Break</i>
2:30 - 3:45	Round 1 Ratings (individuals)
3:45 - 4:00	Closing remarks

Day 3

9:00 - 9:30	Discussion of round 1 ratings (Grade-level Groups)
9:30 - 10:45	Presentation of Item Level Data <ul style="list-style-type: none">• Small table discussions• Large grade level group discussion
10:45 -	
11:00	<i>Break</i>
11:00 -	
12:00	Round 2 Ratings (individual)
12:00 - 1:00	<i>Lunch</i>
1:00 - 1:30	Discussion of round 2 ratings (Grade-level Groups)
1:30 - 2:30	Presentation of Impact Data – Frequency Distributions <ul style="list-style-type: none">• Small table discussions• Large grade level group discussion
2:30 - 2:45	<i>Break</i>
2:45 - 3:45	Round 3 Ratings (individual)
3:45 - 4:00	Closing remarks

Day 4

9:00 - 9:45	Discussion of round 3 ratings (Grade-level Groups)
9:45 - 10:00	<i>Break</i>
10:00 -	
11:00	Discussion of all grade level results (Total Group) <ul style="list-style-type: none">• Examination of impact data• Announcement of Articulation Committee members• Recommendations to Articulation Committee• Complete Evaluations
11:00 -	
12:00	<i>Lunch</i>
12:00 - 2:15	8) Articulation Committee (Week 1: Gr. 3, 5, 7; Week 2: Gr. 3- <ul style="list-style-type: none">• Discussion of total group recommendations• Formulation of Articulation Committee Recommendations
2:15 - 2:30	<i>Close</i>

August 8 Policy Articulation

10:00 -	Summarize Recommendations from Panels and Artic.
10:30	Committees
10:30 -	
11:30	Review Impact Data (AYP and NAEP) and Smoothing

11:30 –
12:00 Develop Policy Recommendations

August 9 NTAC Process Review

11:00 - Report of milestone events to National TAC; NTAC
12:00 comments regarding implementation of planned process

Grades 3-8 Mathematics MSP

SETTING PERFORMANCE STANDARDS

Washington State Board of Education

August 10, 2010 9:00-12:00

OSPI Billings Conference Room, Olympia, WA

Joe Willhoft, Assistant Superintendent

Assessment and Student Information, OSPI



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Division of Assessment and Student Information

Agenda

- Standard setting approval process
- New standards and AYP – Application of Bridge Study
- Description of standard setting events
 - Composition of panels
 - Standard setting activities
- Recommendations from standard setting panels
- Superintendent’s recommendation to the Board
- Board Action



Standard Setting Approval Process

Legislative Authority

RCW 28A.305.130

- ...the state board of education shall:
 - (4)(b) **Identify the scores students must achieve in order to meet the standard** on the Washington assessment of student learning and...determine student **scores that identify levels of student performance below and beyond the standard.**

Standard Setting Approval Process

Legislative Authority

RCW 28A.305.130 *(continued)*

- ...The board shall set such performance standards and levels **in consultation with the superintendent of public instruction** and after consideration of any **recommendations that may be developed by any advisory committees** that may be established for this purpose.
- ...The **legislature shall be advised** of the initial performance standards and any changes made to the elementary level performance standards and the middle school level performance standards;

Standard Setting Approval Process

Approval of the Procedures

- The State Board and the Superintendent's national advisory committee on assessments reviewed and approved the process to be used for the 2010 Math MSP on several occasions.
- This process began in the spring of 2008, when new academic content standards were approved for mathematics in Kindergarten through grade 8.
- New assessments aligned to those new content standards were given to students this spring.



Standard Setting Approval Process

Effect of Today's Action by the Board

- Today, the Superintendent is recommending “cut scores” to be used on the grade 3-8 mathematics exams – the Measurements of Student Progress
- Each grade has three cut scores, separating four levels of student performance:
 - The cut between “Below Basic” and “Basic”,
 - The cut between “Basic” and “Proficient”, and
 - The cut between “Proficient” and “Advanced”
- The Board’s cut scores will be used to report the 2010 results, and will be used in future years until such time as the standards are revised or revisited.



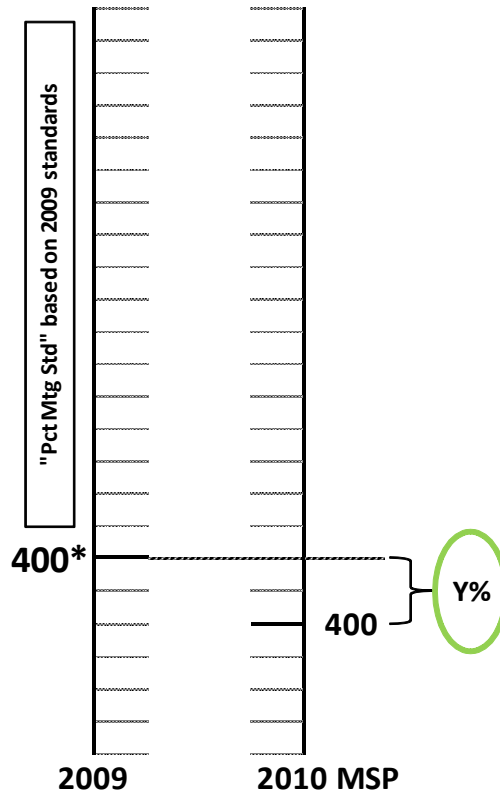
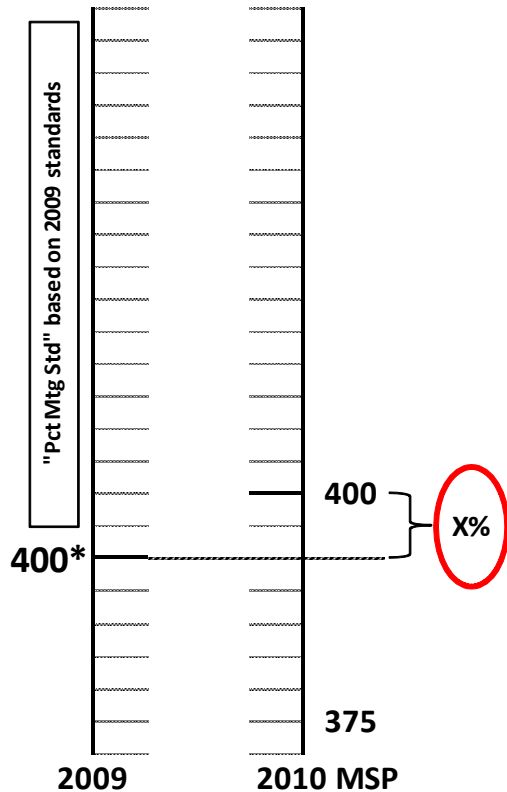
Bridging 2009-to-2010 for AYP

- OSPI is in negotiation with the US Dept of Education to have 2010 be a “transition year” for AYP calculations.
- ETS has conducted a “bridge study”. Using 2009 WASL items that were embedded in the 2010 tests, ETS has been able to identify the “2009 Met Standard” score on each of the scales for the 2010 tests.
- This bridge will identify the extent to which the new standards are more or less demanding than the old standards.
- The calculation of AYP in 2010 will take this difference into account.

Illustration of using Bridge Study for calculation of AYP in 2010 (proposed)

Scenario A
(New standard is **MORE** challenging)

Scenario B
(New standard is **LESS** challenging)



If the new standards are **more challenging** than 2009, as in Scenario A, the percent of students in “X%” **will be added** to the Percent Met in 2010.

If the new standards are **less challenging** than 2009, as in Scenario B, the percent of students in “Y%” **will be subtracted** from the Percent Met in 2010.

The 2009 standard (400*) is criterion used for NCLB Adequate Yearly Progress



Standard Setting: Recommendations from Multiple Sources

- **Contrasting Groups Study** (n = 204 teachers; 7,000 students)
 - Individual ratings of students by their teachers before tests were given
- **Grade-level Panel** (n = 169)
 - Implemented standard setting activities across three days, resulting in a set of recommended cut scores
- **Articulation Panel** (n = 24)
 - Reviewed grade level recommendations, resulting in revised recommendations
- **Policy Advisory Panel** (n = 18)
 - Reviewed both sets of recommendations, in light of district policy issues; made separate recommendations

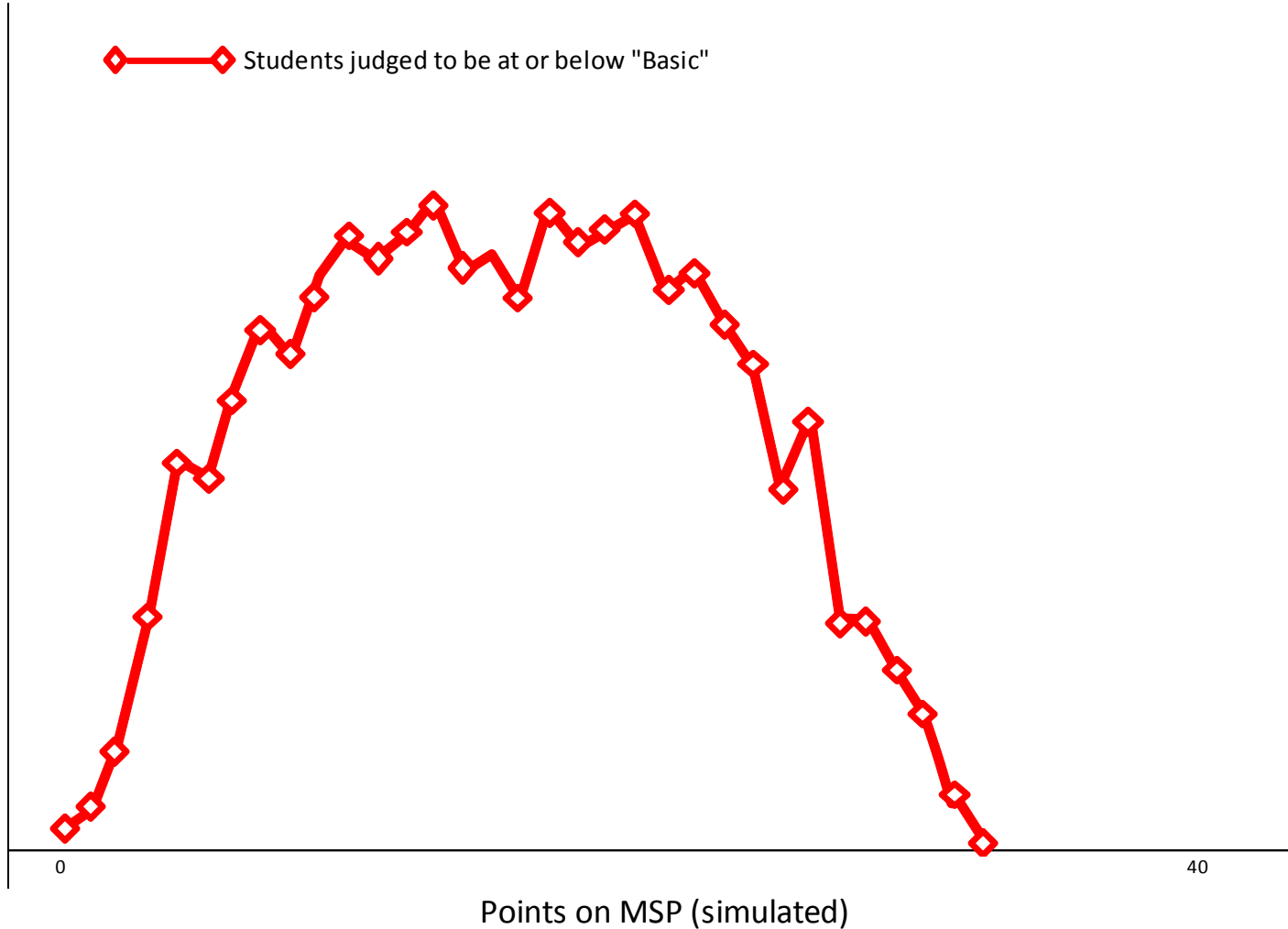
Composition of Panels

- **Grade-level Panel**
 - 169 educators/community members
 - 2/3 West of Cascades; 60% from majority White schools or districts; 48% from above average Free/Reduced meals schools/districts
- **Articulation Panel**
 - 24 members from Grade-level Panel (4 per grade level)
 - Battle Ground (2), Bremerton, Central Kitsap, Central Valley, Ellensburg, Evaline, Everett, Granite Falls, Hockinson, Kelso, Lynden, Mead, Ocean Park, Pasco, Puyallup, Quincy, Richland, Seattle (2), So. Kitsap, Spokane, Sumner, community member
- **Policy Advisory Panel**
 - 18 district/ESD superintendents; at least one from each ESD

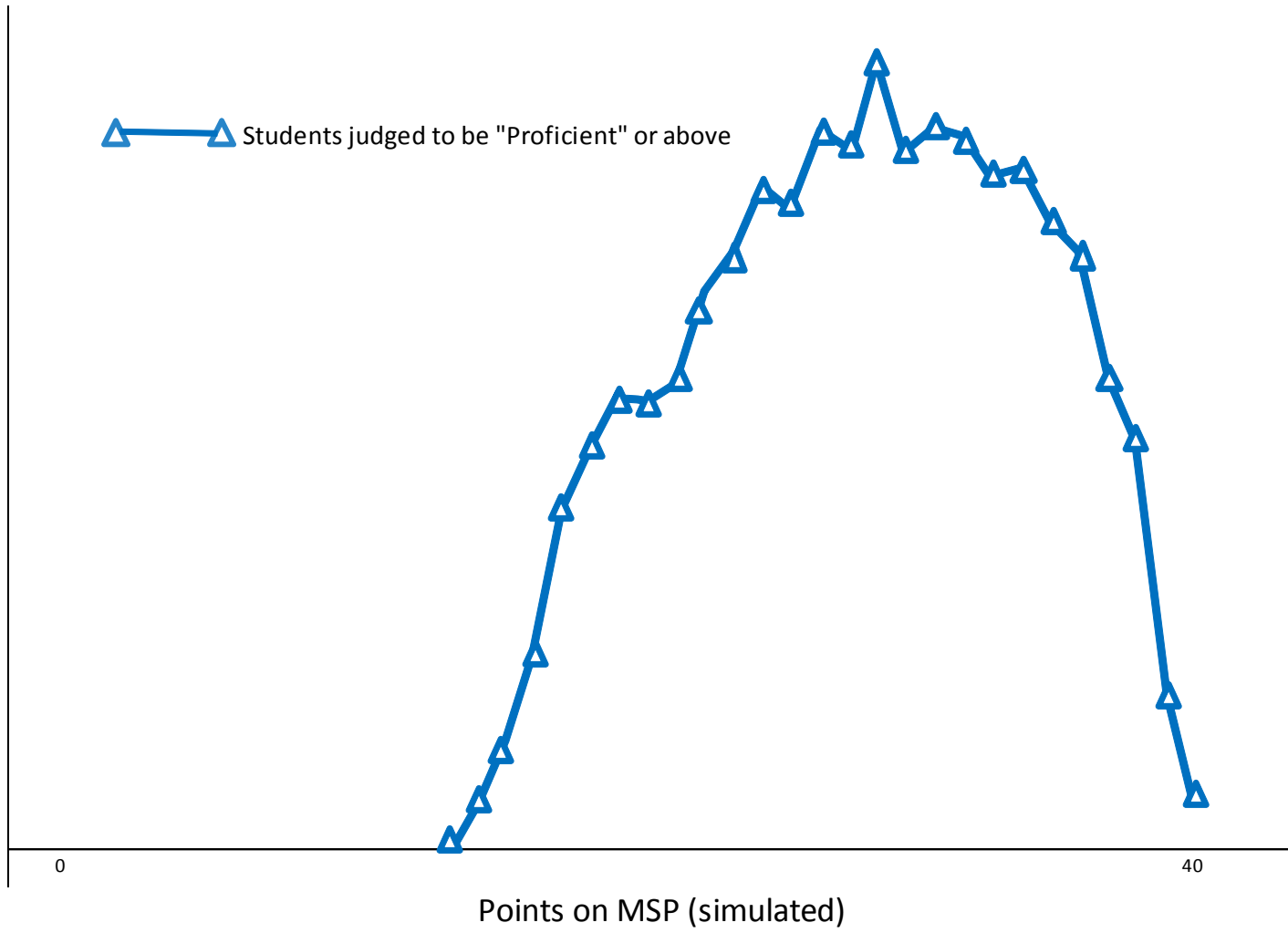
Standard Setting Activities

- Orientation to test development
- Taking the test
- Examining the “Performance Level Descriptors”
- Ratings using an “Ordered Item Booklet”
 - Round 1 (Data from Contrasting Groups study)
 - Round 2 (Item difficulties)
 - Round 3 (State percent at each performance level)
- Articulation Panel (Thurs, Aug 5)
 - 24 members (4 from each grade-level panel)
- Policy Advisory Panel (Fri, Aug 6)
 - 18 district and ESD superintendents
- National TAC review of activities and results (Mon, Aug 9)

Contrasting Groups: Students rated as “At or below Basic”, based on PLD for Basic (simulated data)



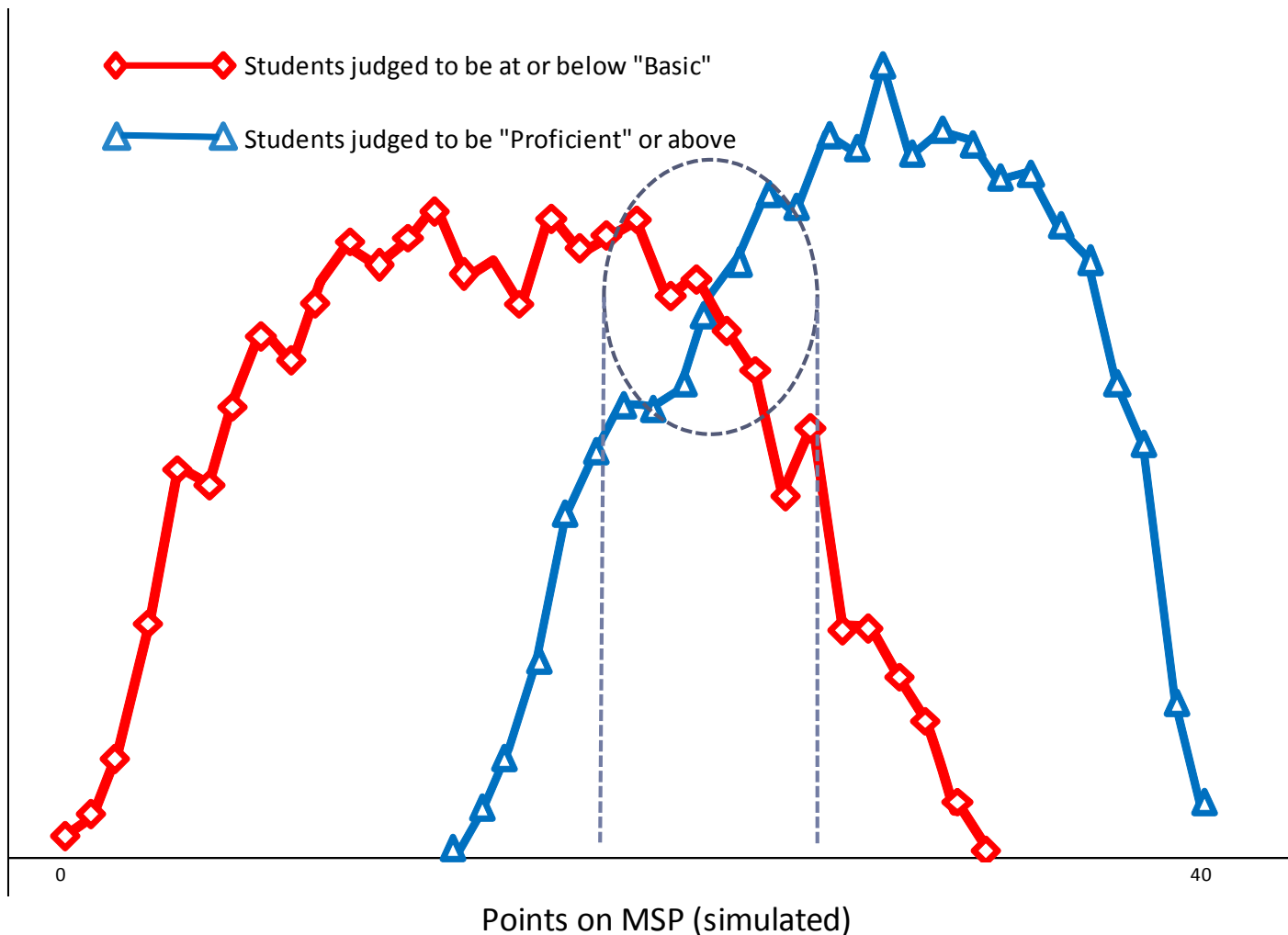
Contrasting Groups: Students rated as “Proficient or above”, based on PLD for Proficient (simulated data)



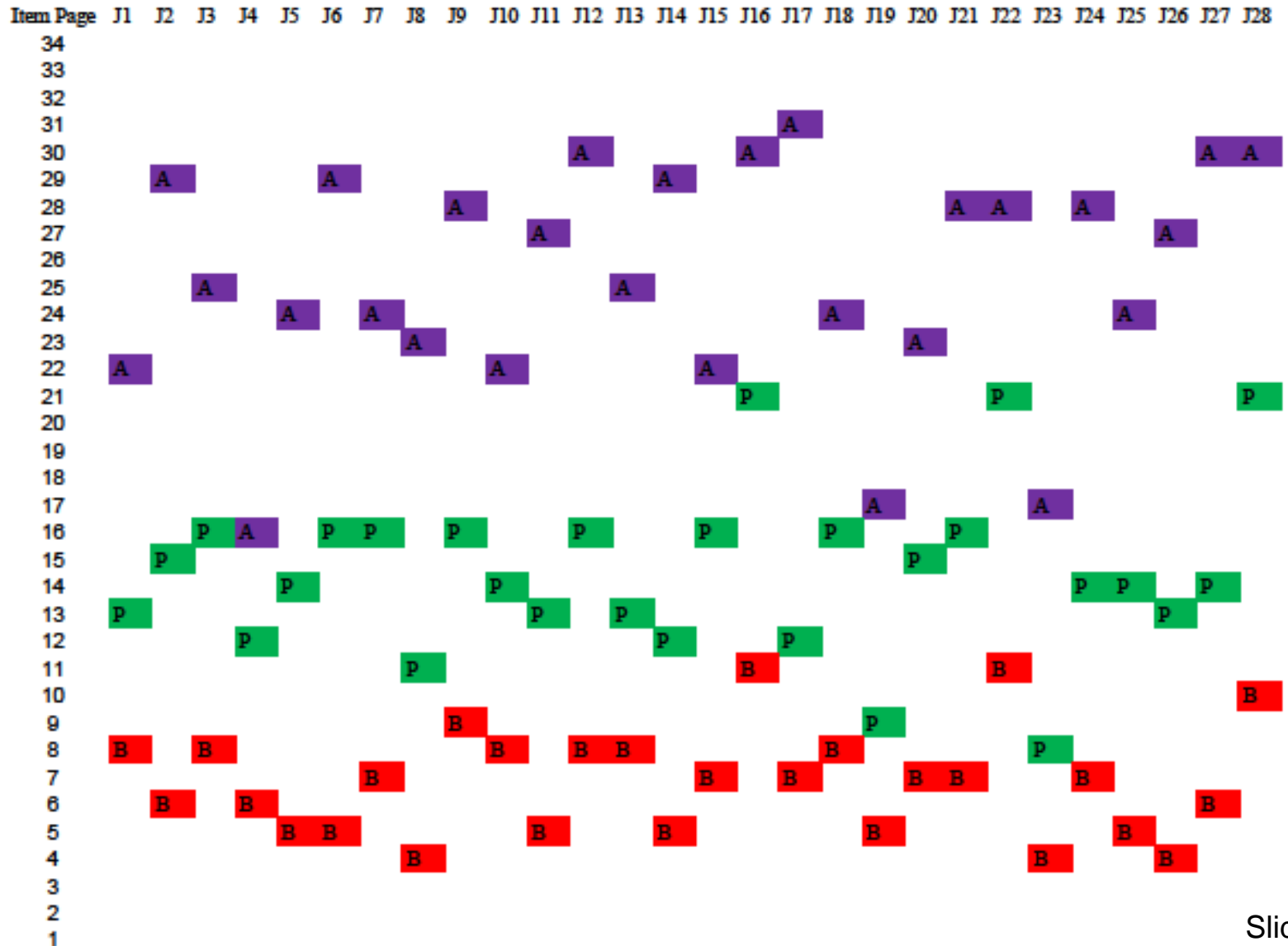
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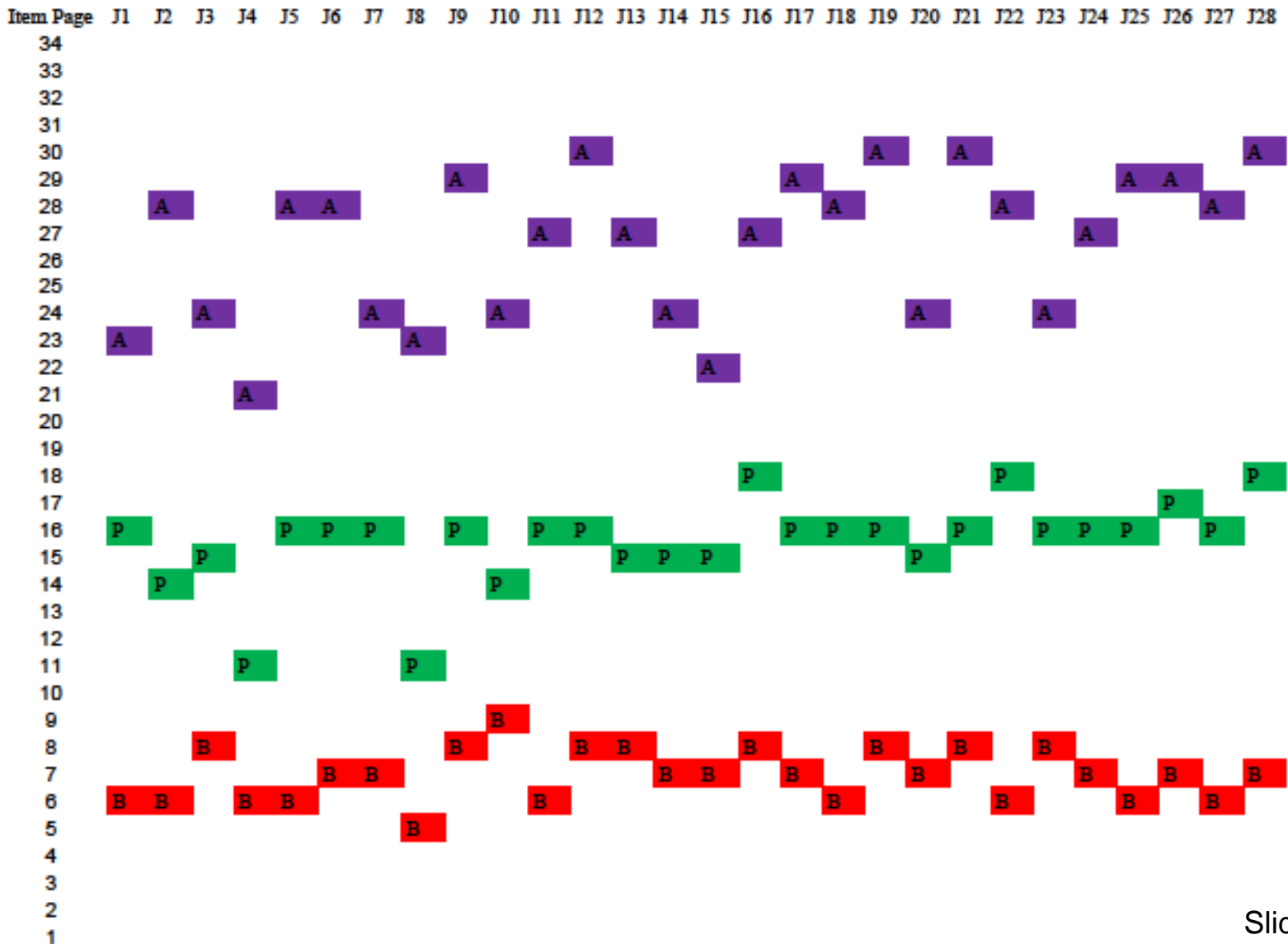
Contrasting Groups: Intersection is a region separating “Basic” from “Proficient” (simulated data)



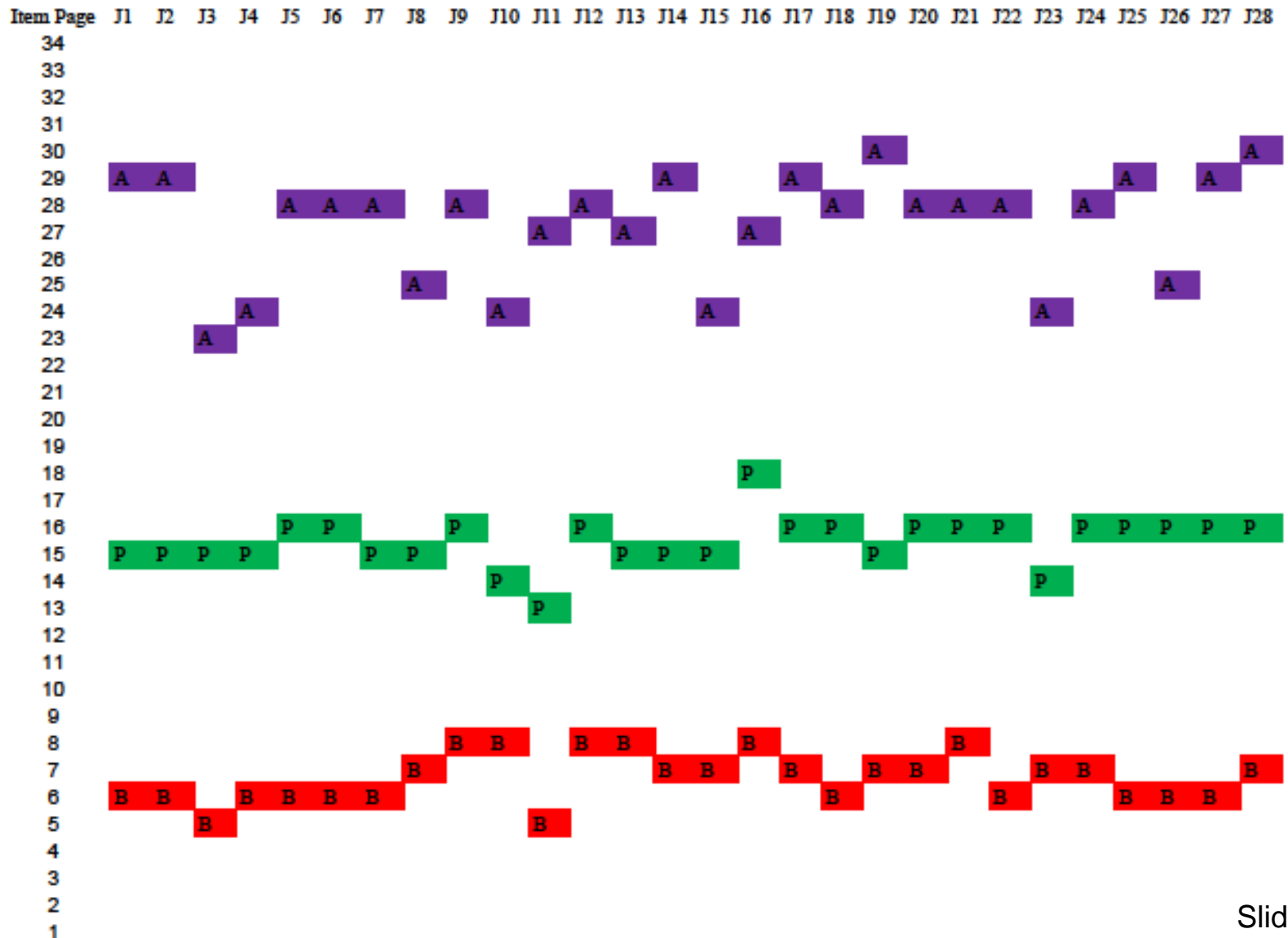
Ratings from a Sample Grade-level Panel – **ROUND 1:** Groups had Contrasting Groups information



Ratings from a Sample Grade-level Panel – **ROUND 2:** Groups had Item Difficulty information

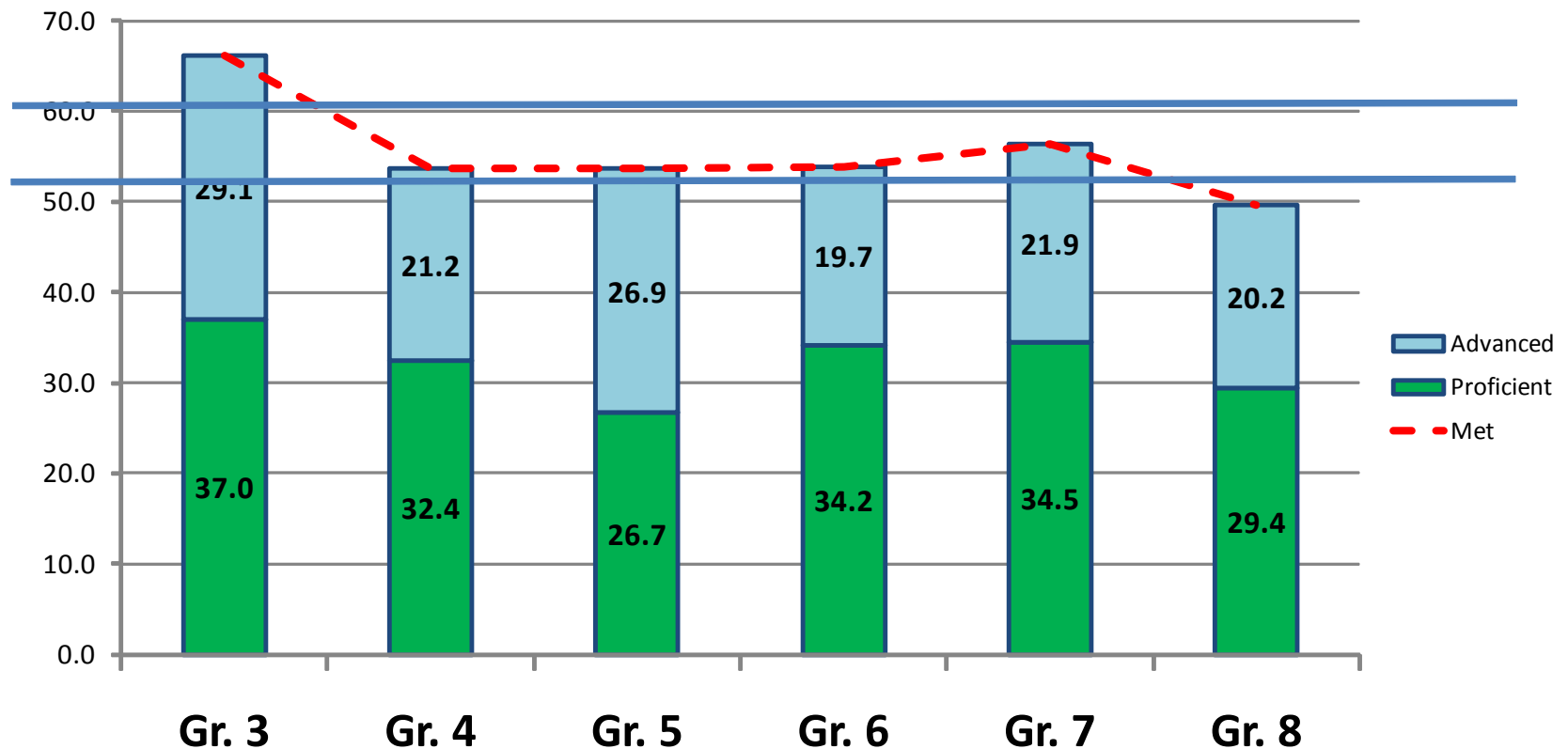


Ratings from a Sample Grade-level Panel – **ROUND 3:** Groups had Percent at each Level information



Summary of Recommendations from Grade-level Panel: Meeting/Exceeding Standard

2009 WASL	66.3	52.3	61.9	50.9	51.8	50.8
2010 Pct Met	66.1	53.6	53.6	53.9	56.4	49.6



Summary of Recommendations from Grade-level Panel: All Four Levels

2010 Pct Met

66.1

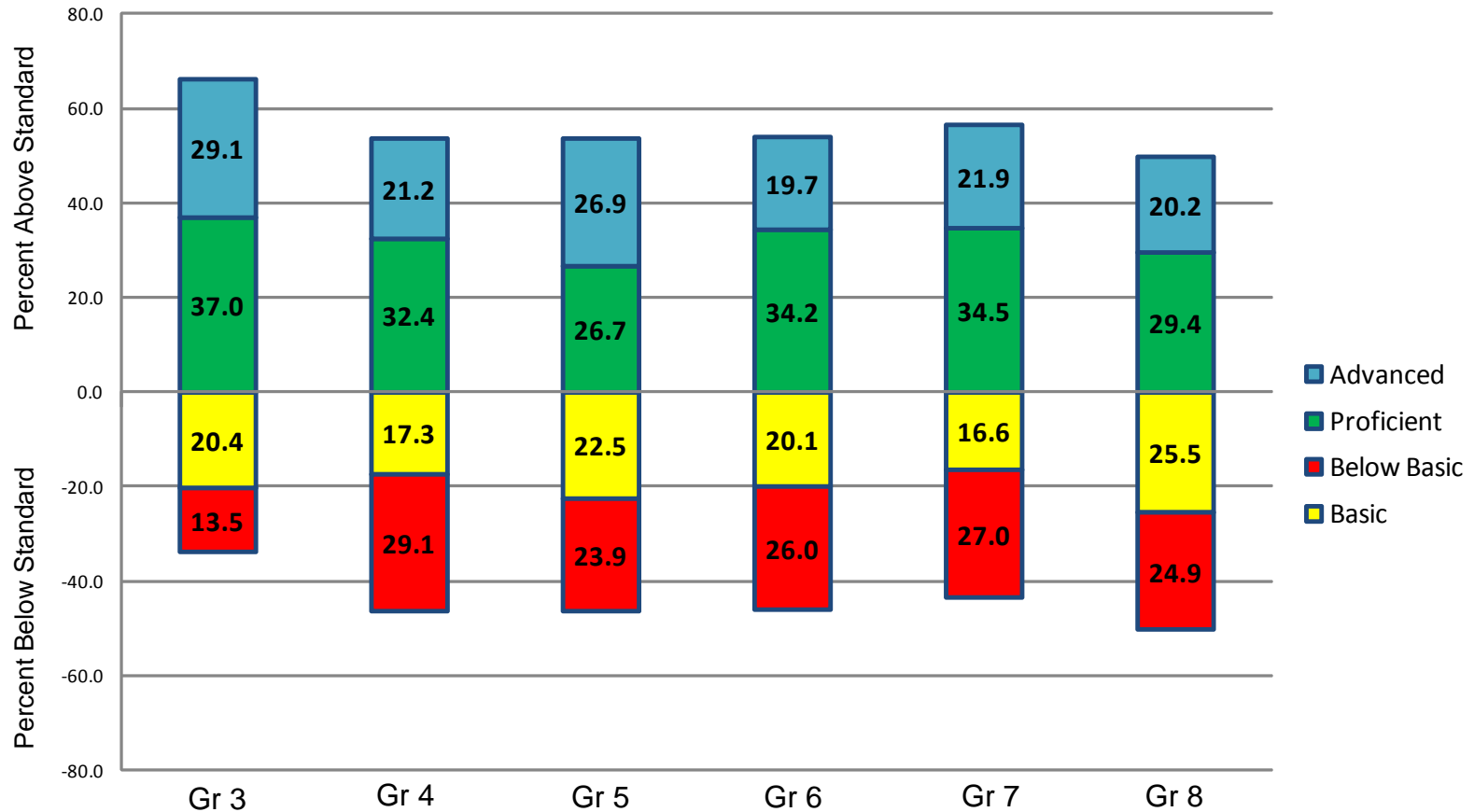
53.6

53.6

53.9

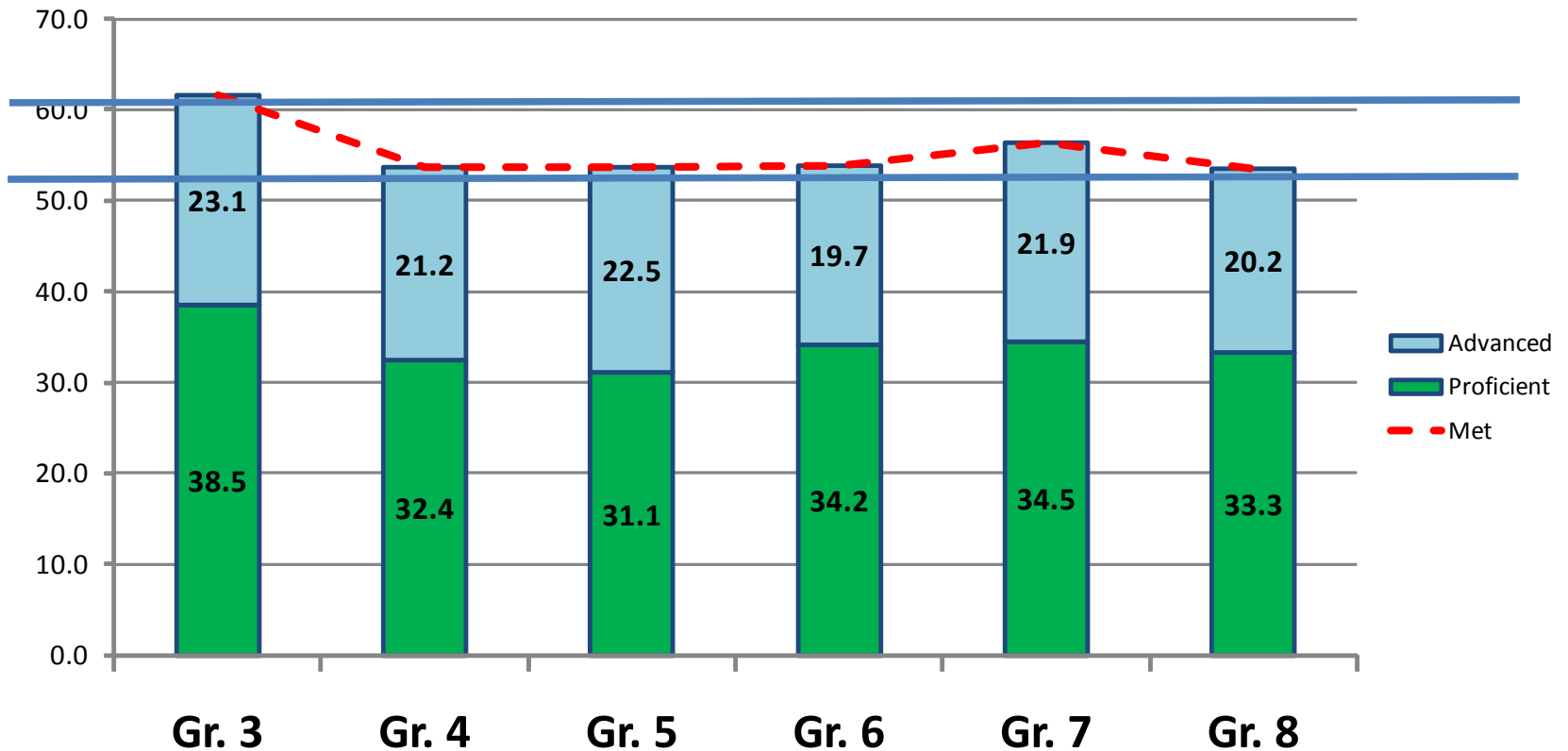
56.4

49.6



Summary of Recommendations from Articulation and Policy Advisory Panels: Meeting/Exceeding Standard

2009 WASL	66.3	52.3	61.9	50.9	51.8	50.8
2010 Pct Met	61.6	53.6	53.6	53.9	56.4	53.5



Summary of Recommendations from Articulation and Policy Advisory Panels: All Four Levels

2010 Pct Met

61.6

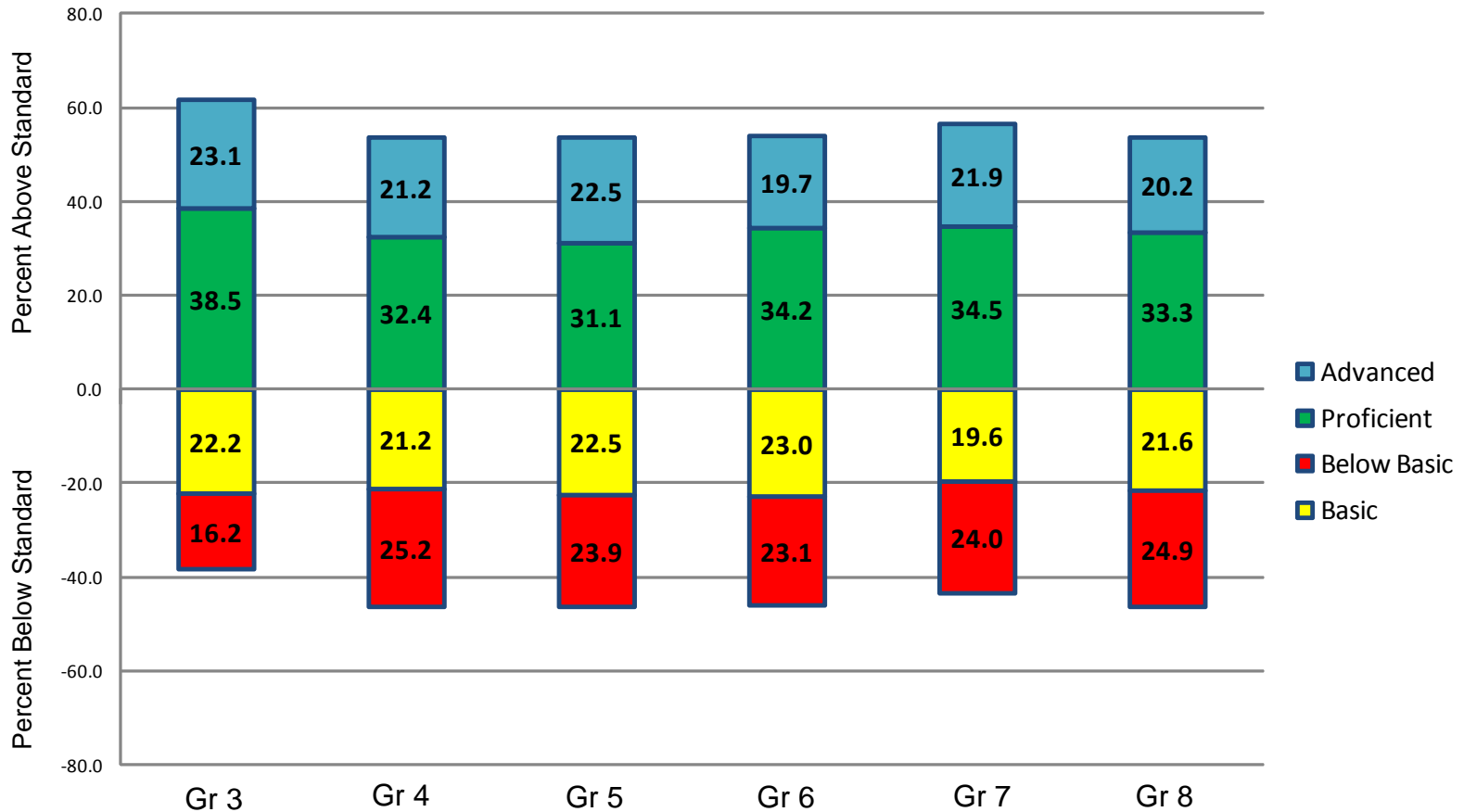
53.6

53.6

53.9

56.4

53.5



Superintendent's Recommendation

Superintendent Dorn's recommendation for a Board motion that...

...the State Board of Education adopt the cut scores for Basic, Proficient, and Advanced on the grades 3-8 mathematics Measurements of Student Progress as forwarded by the Articulation Panel and the Policy Advisory Panel.

Superintendent's recommendation for raw score cuts for all grades: Basic, Proficient, and Advanced

Recommended Cut Scores for Mathematics MSP

	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
Proficient/ Advanced	28	27	27	32	31	31
Basic/ Proficient	21	20	20	23	22	22
Below Basic/ Basic	15	15	14	16	16	16
Total Points on Test	34	34	34	40	40	40



End-of-Course Mathematics Exams

UPDATE

Washington State Board of Education
August 10, 2010 9:00-12:00
OSPI Billings Conference Room, Olympia, WA

Joe Willhoft, Assistant Superintendent
Assessment and Student Information, OSPI



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Purpose of Update

- State and federal testing requirements for high school mathematics (and science) present some policy challenges
- This update is designed to alert the Board to these issues, and inform the Board of possible approaches toward resolution

Federal Requirements

- NCLB requires a state's assessment program to use the same tests for all students tested in an NCLB grade/subject (English/language arts; mathematics; science)
- Schools/districts testing less than 95% of students in every subgroup will not meet AYP. Schools/districts are prohibited from excluding groups of students from testing.
- So, when the state moves its high school tests to an end-of-course (EOC) assessment system, all students will be required to be assessed in common on the same EOC.

Federal Requirements (cont.)

- Though not finalized, the state's NCLB assessment for high school will probably be the Algebra I/Integrated I EOC. This is a test the state can expect all students to have been assessed on by the end of 10th grade.
- If the state requires all students to be assessed on a test, accepted professional and ethical standards expect that all students will have had the opportunity to learn the content on the test.

State Requirements

- The State Board has established high school graduation requirements in WAC 180-51.
- WAC 180.51.115 allows local determination of “exemption from any requirement in [WAC 180-51], if such requirement impedes the student’s progress toward graduation and there is a direct relationship between the failure to meet the requirement and the student’s limitation.”
- Many students with disabilities will not take Alg I/Math I in high school. Testing these students on an EOC test when they have not had an opportunity to learn the content presents a fairness issue

Discussion of Possible Solutions

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