

Standard Setting for the Mathematics Collections of Evidence

State Board of Education

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OSPI, Olympia, WA

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OFFICE OF SUPERINTENDENT OF PUBLIC INSTRUCTION

Division of Assessment and Student Information

End-of-Course Exams: Background

- Students began taking the new End-of-Course exams in Algebra/Integrated Mathematics I and Geometry/Integrated Mathematics 2 in Spring 2011
- Students in the classes of 2013 and 2014 must pass one Mathematics EOC **or alternative**; students in the class of 2015 and beyond must pass both

Legislatively Approved Alternatives: Background and History of CAA-Options

- Legislative action required “legislatively approved alternatives” to the state’s high school exit exams (RCW 28A.655.061 and RCW 28A.655.065).
- Options specified by law:
 - College entrance exams (SAT or ACT scores)
 - Advance Placement (AP) exams
 - GPA comparison
 - Collection of Evidence

Mathematics Collections of Evidence (COE): Background

- The first submission opportunity for Year 1 and Year 2 Mathematics Collections of Evidence (COE) occurred in February 2013.
- A collection of evidence (COE) is a set of work samples, consisting of six to eight performance tasks.
- Two of the tasks in a COE must be “on-demand,” completed in a single sitting under supervision of a teacher. The other tasks may be completed in extended time.
- The COE must be comparable to the EOC in terms of reporting strand representation and rigor.

Mathematics COE Standard Setting: Background

- The COE has **one** cut score, separating two levels of student performance:
 - The cut between “Not Proficient” and “Proficient.”
- The Superintendent recommends a cut score to the State Board.
- The Board’s cut scores will be used to report the 2013 results, and will be used in future years until such time as the standards are revised or revisited.

Mathematics COE Standard Setting: Past and Present Standard Setting Comparisons

- End of Course Exams
 - Bookmark method, using Ordered Item Book
- WAAS Portfolio
 - Body of Work method
- Collection of Evidence
 - Body of Work method, using Ordered Item Book and Performance Level Descriptors from EOC to bridge with EOC

Overview of Standard Setting for Collections of Evidence

- Standard setting plan was approved by State Board of Education in November 2012
- Plan uses a “Body of Work” process to recommend a cut score for each collection of evidence to the State Board
 - Year One: 4,420 collections submitted
 - Year Two: 269 collections submitted
- Standard setting took place March 25-27, 2013

Mathematics COE Standard Setting: The Participants

- **Course-Level Panels**
 - Two standard-setting panels, one for Year 1 (14 committee members) and one for Year 2 Mathematics (15 committee members)
 - Implemented standard setting activities across three days, resulting in a recommended cut score for each COE
- **Articulation Panel**
 - Reviewed course-level recommendations, resulting in a recommendation

Mathematics COE Standard Setting: The Participants

- **Facilitators**
 - Dr. Tom Hirsch served as lead facilitator
 - Dr. Chad Buckendahl and Dr. Chris Domaleski served as panel facilitators
- **Additional Support**
 - OSPI and ESD staff provided logistical support and documented the process but were not engaged with the deliberations of the panels

Mathematics COE Standard Setting: Description of Activities

Day I

- Welcome/Orientation/Administrative Tasks
- Panel Selection Process
- Overview of Standard Setting Process
- Review of Assessment
 - Learning Standards
 - COE Development , Scoring and Augmentation Process
 - EOC Test Blueprint and COE Blueprint
- Taking/Scoring the “Assessment” (Tasks)
- Review of Performance Level Descriptors or PLDs
- Review of Ordered Item Booklets

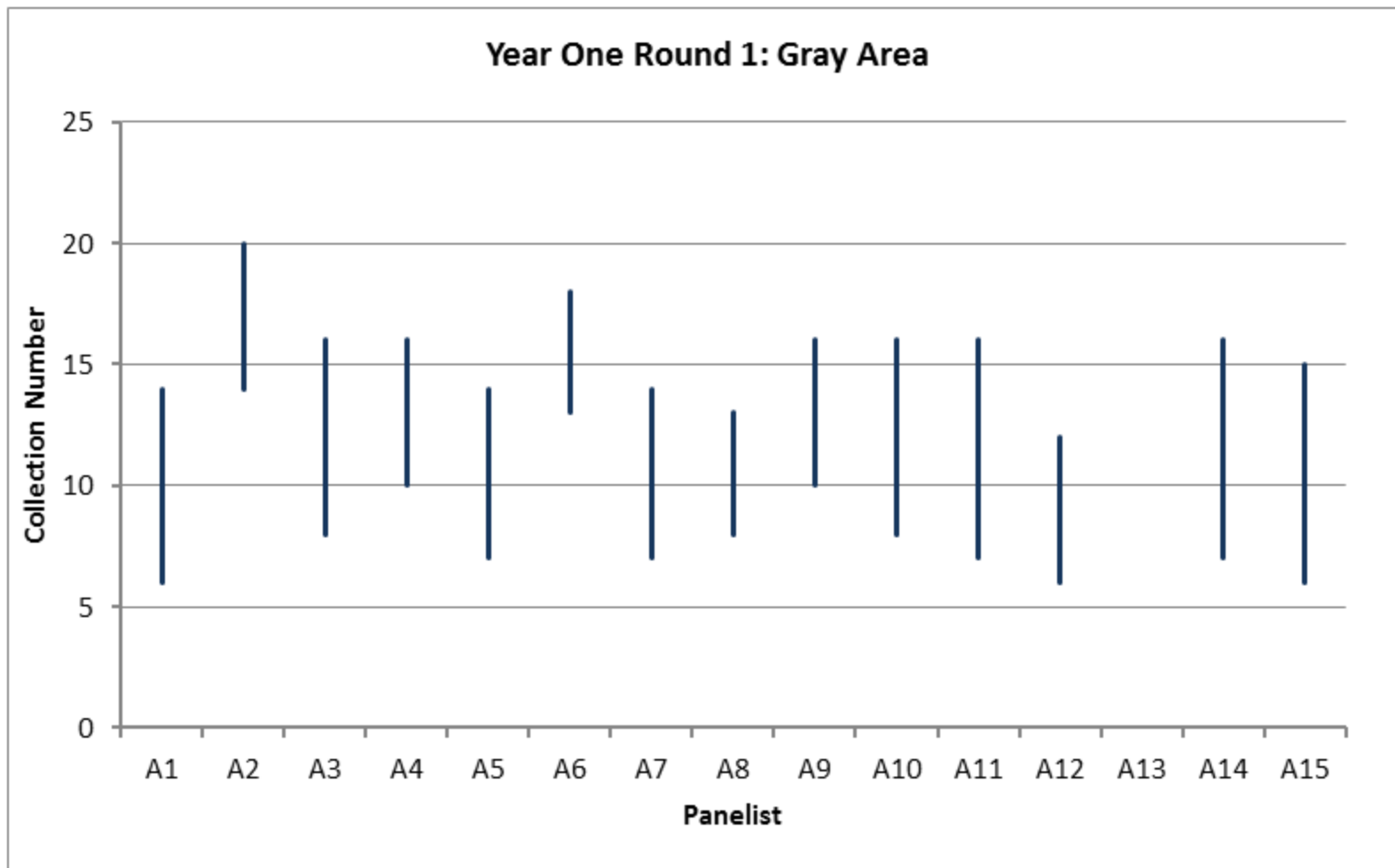
Mathematics COE Standard Setting: Description of Activities

Day 2

- Small Table Discussion of PLDs
- Total Group Discussion
- Summary of Standard Setting Procedure
- Sample Practice Standard Setting
- Round I Ratings – “Range Finding”
 - Identify “gray area” using 20 collections
- Discussion of round I ratings
 - Provide display of ratings
 - Arrive at consensus “gray area”

Ratings from the Year 1 COE Standard Setting Panel

ROUND 1: Range finding (Gray Area)



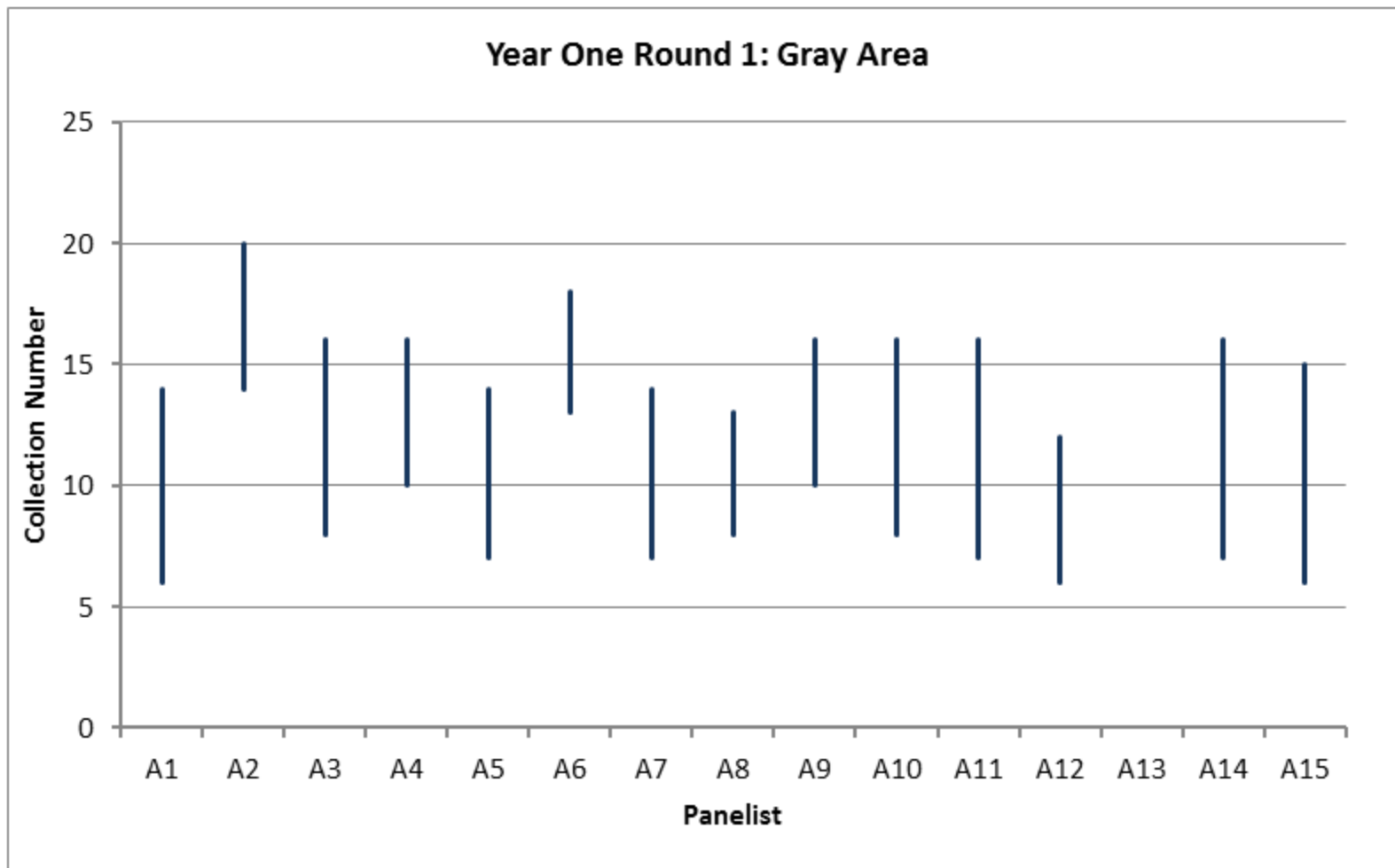
Mathematics COE Standard Setting: Description of Activities

Day 3

- Review of standard setting process for rounds 2 and 3
- Round 2 Ratings – “Pinpointing #1”
 - Provide an expanded “gray area” set of collections
 - Provide score points for each collection
- Discussion of round 2 ratings
- Presentation of Impact Data
- Round 3 Ratings – “Pinpointing #2”
- Discussion of results
- Recommendations to Articulation Committee
- Articulation Committee Discussion

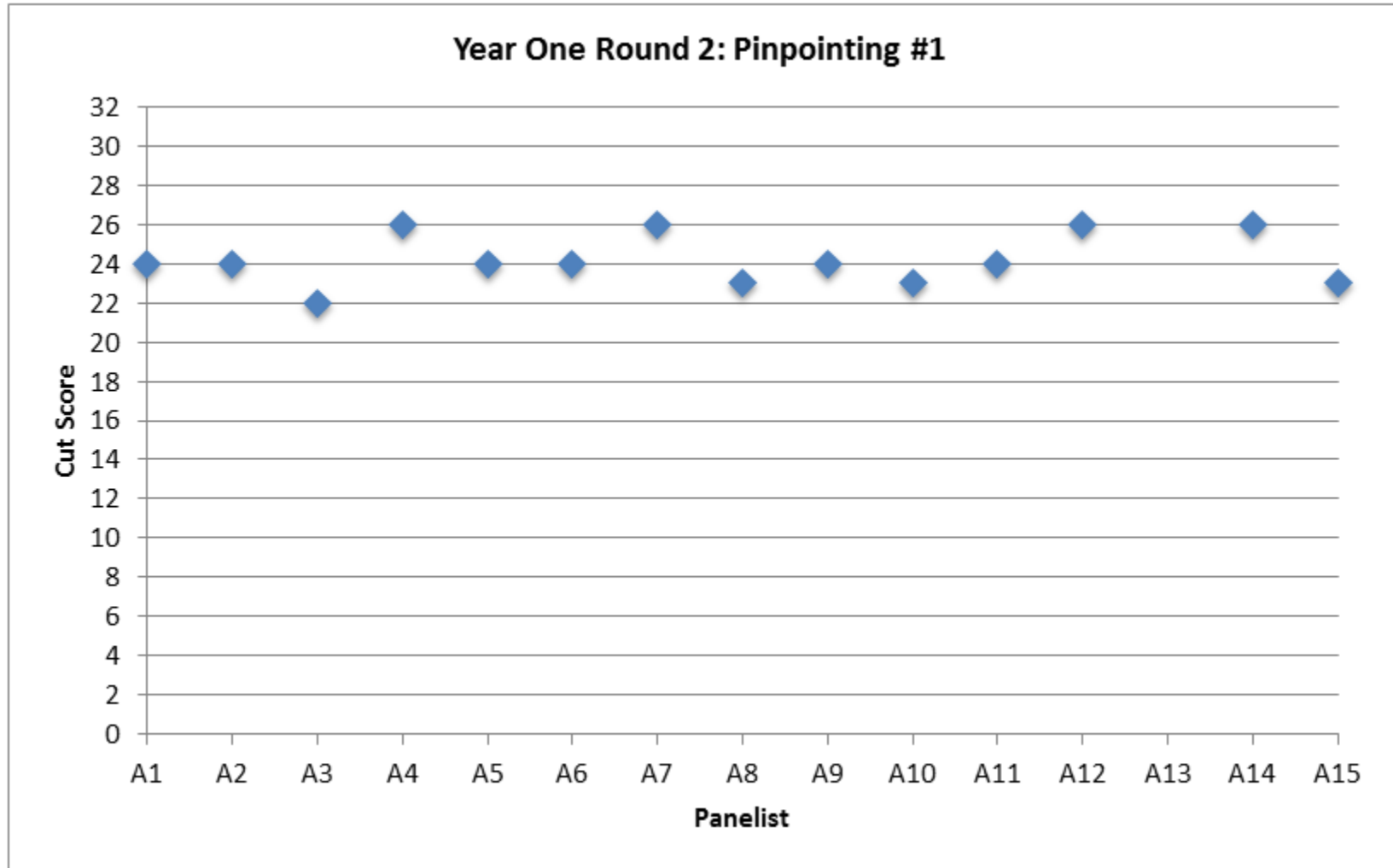
Ratings from the Year 1 COE Standard Setting Panel

ROUND 1: Range finding (Gray Area)



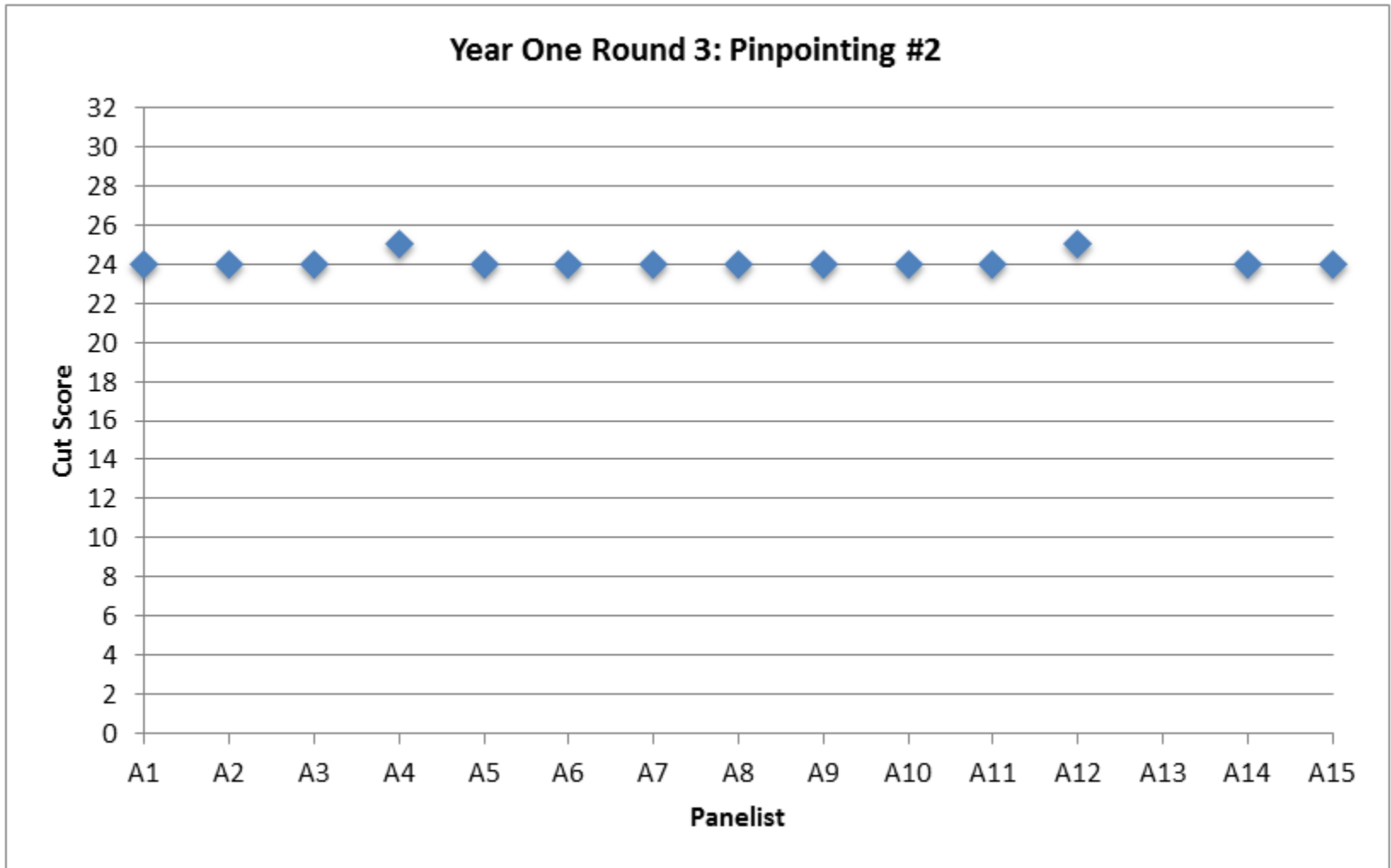
Ratings from the Year 1 COE Standard Setting Panel

ROUND 2: Groups had score information



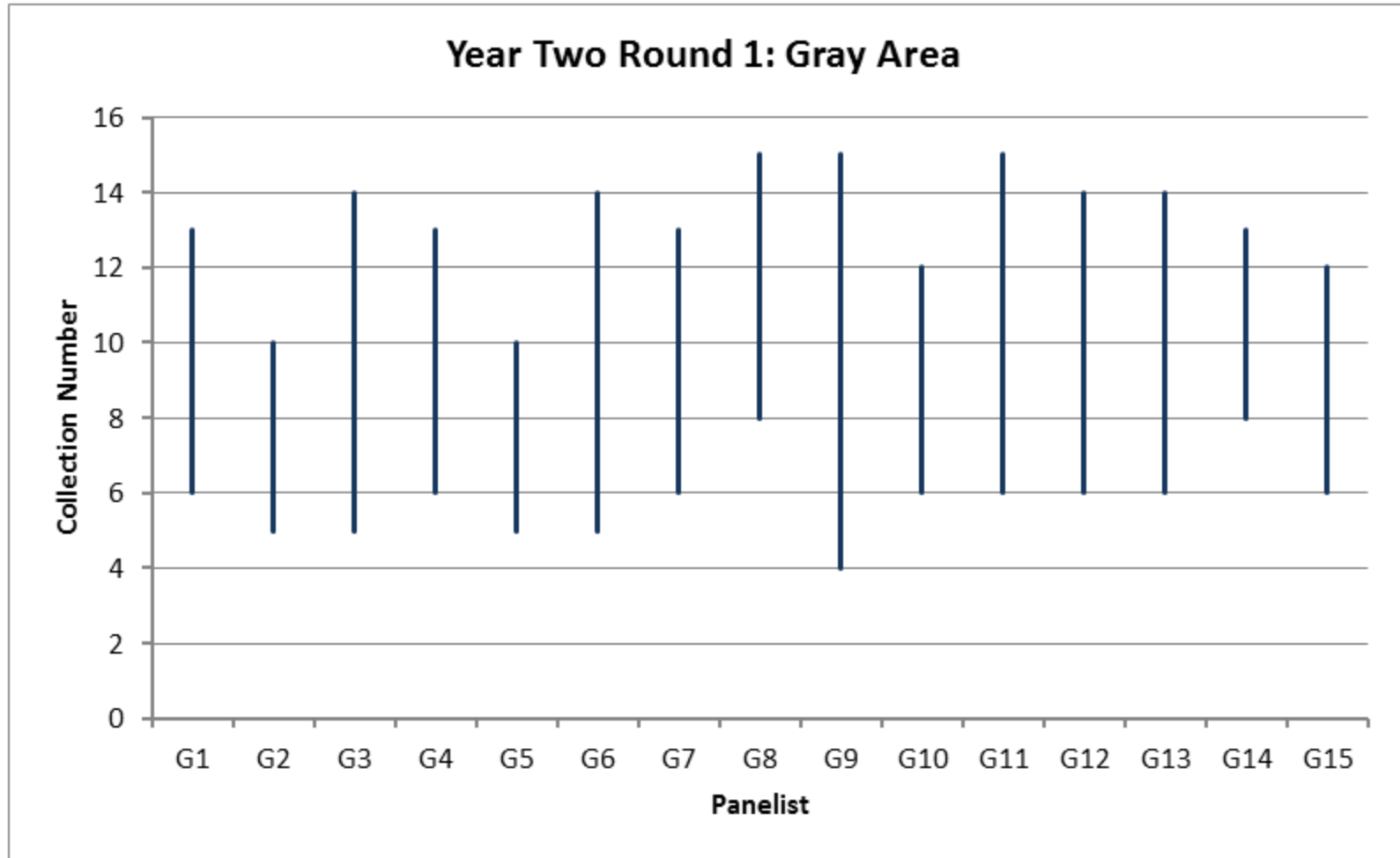
Ratings from the Year 1 COE Standard Setting Panel

ROUND 3: Group had Impact Data information



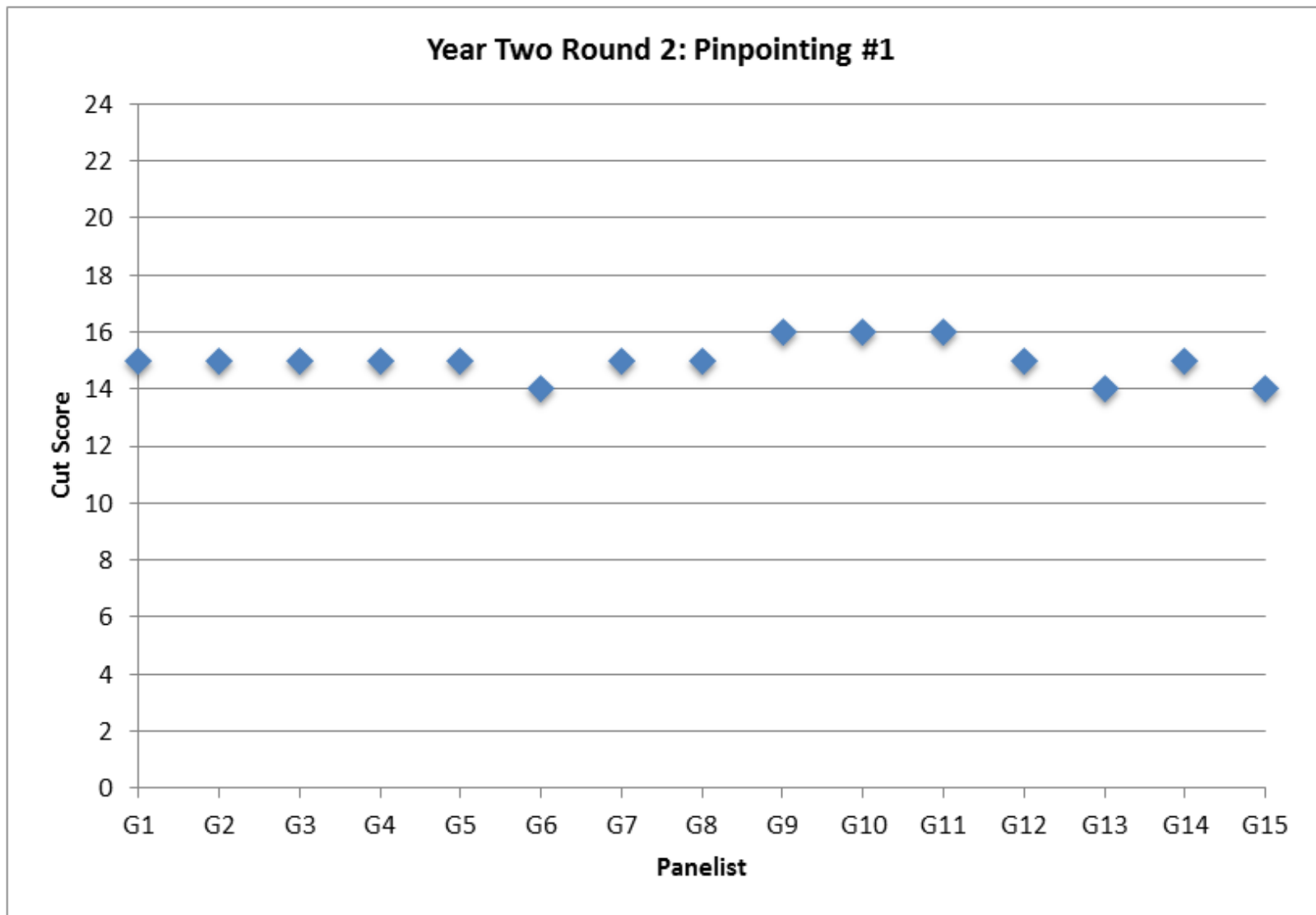
Ratings from the Year 2 COE Standard Setting Panel

ROUND 1: Range finding (Gray Area)



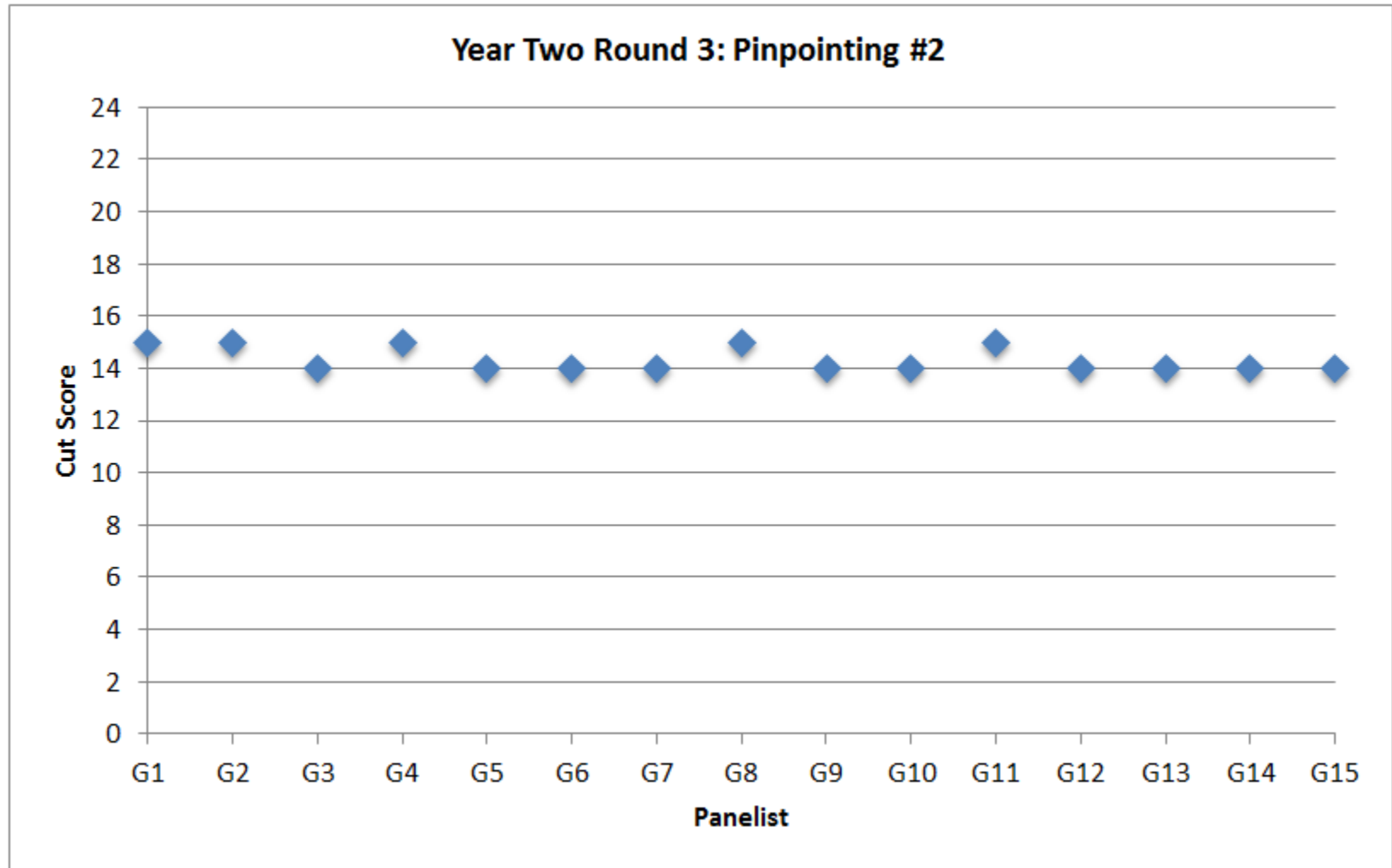
Ratings from the Year 2 COE Standard Setting Panel

ROUND 2: Groups had score information



Ratings from the Year 2 COE Standard Setting Panel

ROUND 3: Group had Impact Data information



Summary of Recommendations from Course & Articulation Panels: **Proficient**

Year One	Recommendation	% Proficient
Course Panel	Average points: 24.1 Cut score: 25 points	74.03
Articulation Committee	Cut score 24 points	78.14

Year Two	Recommendation	% Proficient
Course Panel	Average points: 14.3 Cut score: 15 points	72.49
Articulation Committee	Cut score: 14 points	79.93

Course and articulation panel recommendation for raw score cut: Proficient

Course & Articulation Panels Recommended Cut Scores

	Year 1	Year 2
Course panels	24.1/ 25	14.3/ 15
Articulation panel	24	14
Total Points on Collection	32	24

Superintendent's Recommendation

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

...the State Board of Education adopt the cut score of 24 points for Proficient on the Mathematics Year 1 Collection of Evidence as forwarded by the Articulation panel.

...the State Board of Education adopt the cut score of 14 points for Proficient on the Mathematics Year 2 Collection of Evidence as forwarded by the Articulation panel.

