



Missouri

End-of-Course Assessments

Missouri Department of Elementary and Secondary Education

**Standard Setting Report
Phase II Assessments
November 2–5, 2009**

English I
Algebra II
Geometry
American History
Government

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CHAPTER 1: INTRODUCTION

1.1 Introduction

One purpose of assessment is to establish clear guidelines for educational decision making. By assigning meaning to test scores, standard setting allows policymakers, administrators, teachers, and parents to make statements about the level of proficiency of individual students and groups of students. The purpose of this chapter is to provide documentation of the achievement-level-setting (or standard-setting) event conducted for the Missouri End-of-Course (MO EOC) Assessments on November 2–5, 2009.

1.2 Goal of the Standard Setting

The main goal of the standard-setting event was to establish three cut scores for each test in the MO EOC Assessments:

1. The cut score that differentiates *Below Basic* performance from *Basic* performance
2. The cut score that differentiates *Basic* performance from *Proficient* performance
3. The cut score that differentiates *Proficient* performance from *Advanced* performance

In other words, the determination of three cut scores yields four performance categories for each assessment.

1.3 Overview of the Standard Setting

During the November 2009 event, achievement-level-setting activities were undertaken for five MO EOC Assessments: English I, Algebra II, Geometry, American History, and Government. These five assessments are being administered operationally for the first time during the 2009–2010 school year.

It should be noted that the original plan for achievement-level setting included sessions for Integrated Math II and Integrated Math III. However, before the event, DESE made the determination to discontinue these two assessments due to extremely low actual enrollments for the Fall 2009 assessments and low projections of the number of students who would enroll to take these assessments in Spring 2010. Additionally, DESE received only five participant nominations for the Integrated Math panels, confirming the low participation in these two courses statewide.

CHAPTER 2: STAFF AND PARTICIPANTS

2.1 Staff

Staff from Questar Assessment, Inc., a subcontractor to Riverside Publishing, planned and facilitated the standard-setting workshops in consultation with Riverside’s MO EOC Assessment team. Questar’s most-experienced facilitators—Michael Beck, Sheila Potter, and Leon Dreyfus—served as facilitators for the workshops. Each of these individuals has facilitated standard-setting sessions for multiple clients for both elementary-level and high-school-level assessments.

In addition to the staff from Questar, three psychometricians from Riverside Publishing attended the workshops. Their function was to enter panelist data, produce tables and reports, and oversee data quality control as well as to observe activities in each of the groups. A Riverside Publishing program manager was present for the entire workshop to assist Missouri Department of Elementary and Secondary Education (DESE) staff and the panelists with logistics issues. Content area specialists from Riverside Publishing’s Content Development group were present in the five panel rooms to serve as resources for content-related questions. Finally, curriculum staff from DESE attended the standard-setting workshops to serve as content resources to the appropriate panels.

2.2. Participants

2.2.1 Participant Recruitment

In July of 2009, DESE electronically distributed informational letters and panelist nomination forms to all Missouri district superintendents, Regional Professional Development Center directors, and selected professional educator organizations. In addition, DESE contacted the Director of the Missouri Department of Higher Education’s Curriculum Alignment Initiative. The cover letters described the process and impact of the standard-setting event and provided some preliminary details such as date and location. The letters also stressed that this was a unique opportunity for panels of educators and other individuals to discuss Course-Level Expectations for each applicable course and to review assessment items to determine the appropriate “cut scores” for each achievement level. Each addressee was given the opportunity to nominate one or more classroom teachers, nonteacher educators, post-secondary educators, or business professionals with appropriate content knowledge to be considered for participation in the standard-setting event. The panelist nomination letters and forms were also distributed to an applicable group of education-related professional organizations in Missouri. A list of those organizations is included as Appendix A.

The requirements for participation were as follows:

For classroom teachers: The teacher must have taught the course for which he or she is being nominated to serve as a panelist for a minimum of five years. The teacher should be familiar with the Show-Me Standards and the applicable Course-Level Expectations. Finally, the teacher should be recognized as “outstanding” in professional performance.

For nonteacher educators and post-secondary educators: The educator may be a nonteacher educational staff member in a building or district central office or an

instructor or administrator at a post-secondary institution. The educator must have familiarity with the course content for which he or she is being nominated to serve as a panelist. He or she should be familiar with the Show-Me Standards and applicable Course-Level Expectations. Finally, the educator must be recognized as “outstanding” in professional performance by the individual making the nomination.

For business professionals: The business professional must have familiarity with the content of the course for which he or she is being nominated to serve as a panelist. Additionally, the individual either should use high school course content for the applicable content area in his or her daily professional work *or* be familiar with the knowledge and skills that high school students completing the applicable courses must possess to have a firm foundation for further coursework or for the workplace. Finally, the business professional must not be a current or former employee of the public school system.

Appendix B contains copies of the nomination letters sent to district administrators, RPDC directors, and professional educator organizations. Appendix C contains copies of the nomination forms for classroom teachers, nonteacher educators, and business professionals. Appendix D contains a copy of the panelist qualification guidelines that were mailed with the nomination packets.

2.2.2 Panel Characteristics

A total of 100 panelist nomination forms were received by DESE by September 1, 2009: 30 for English I, 18 for Algebra I, 16 for Geometry, 23 for American History, and 13 for Government. (Some individuals were nominated to serve on more than one panel. An additional five panelists were nominated to serve on Integrated Mathematics II and III panels, for which standard setting did not occur. Three of those individuals, who were all classroom teachers, were assigned to the Algebra II and Geometry panels.) From these nomination forms, DESE’s Curriculum and Assessment staff members chose panelists based upon expertise, demographic characteristics, and types of schools and student populations represented.

An effort was made to ensure representation of the state’s urban, suburban, and rural schools and communities, as well as to include representation from the state’s 11 RPDC regions. Additionally, as much as possible given the nomination pool, an attempt was made to include panelists with expertise in working with students with special needs and English-language learner students. By design, panel slots were heavily populated with classroom teachers. Additionally, with the exception of the American History panel, each panel included one representative of the Missouri Department of Higher Education’s Curriculum Alignment Initiative. These individuals have been involved in developing draft competencies for entry into college-level coursework. Historically, DESE has had difficulty, even with targeted recruiting, locating minority panelists to create panels that are demographically similar to Missouri’s population. However, an attempt was made to include educators on each panel who work in districts that serve significant numbers of minority children.

In a few instances, more than one panelist from the same school district was nominated for the same content area. In these cases, DESE chose only one of the nominees to serve on the panel to avoid overrepresentation of any one district on the panels.

A total of 73 panelists participated in the standard-setting workshop. Three members of the English I panel and two members of the Geometry panel had participated in an earlier achievement-level-setting workshop for other Missouri assessments. A small portion (approximately 10 percent) of the panelists had worked on some phase of standards development or assessment development at the state level. The remaining panelists were involved in leadership activities in their individual districts as they implemented EOC Assessments and aligned curriculum to CLEs. More than half of each panel was made up of active classroom teachers in the relevant content area; several other panel members were nonteacher professional educators, such as administrators and curriculum coordinators. Table 2.1 contains summary information about the demographic characteristics of each panel. Appendix E contains detailed information about the demographic characteristics of each panel.

Table 2.1: Summary of Panel Characteristics for Phase II Assessments

Category	Panel				
	English I	Algebra II	Geometry	American History	Government
Gender					
Male	2	3	6	10	6
Female	14	13	10	3	6
Race					
White	15	15	16	12	11
Other	1	1	0	1	1
Community Size					
Rural	8	10	11	8	3
Suburban	6	5	4	3	6
Urban	1	1	1	2	3
Not Applicable	1	0	0	0	0
Position					
Classroom Teacher	9	13	13	11	7
Nonteacher Educator	6	1	2	2	3
Higher Education Professional	1	2	1	0	1
Business Professional	0	0	0	0	1
RPDC Region					
Heart of Missouri	3	1	1	1	1
Kansas City	4	1	3	1	2
Missouri Western	0	0	1	0	0
Northeast	1	0	0	0	0
Northwest	0	1	0	0	0
St. Louis	3	5	2	4	5
South Central	1	2	3	3	2
Southeast	0	3	3	1	1
Southwest	2	3	2	1	1
West Central	1	0	1	2	0
Not Applicable	1	0	0	0	0
Totals	16	16	16	13	12

CHAPTER 3: PREPARATION AND EXECUTION

3.1 Development of Achievement-Level Descriptors

The MO EOC Assessments use the same achievement-level labels used for the grade-level Missouri Assessment Program (MAP): Advanced, Proficient, Basic, and Below Basic. For each of these levels, the achievement-level descriptor (ALD) describes the specific knowledge and skills that a student at that level must be able to demonstrate. As suggested by the technical advisory committee (TAC), Riverside drafted ALDs and presented the drafts to DESE. Prior to the standard-setting workshop, DESE conducted sessions devoted to revising these ALDs.

3.2 Overview of Standard-Setting Activities

3.2.1 Methodology and Data Considerations

The specific methodology used for the standard-setting activities was a modified Angoff procedure, as recommended by the state's TAC. The Angoff procedure and its modifications are well-recognized and heavily researched methods for establishing student performance standards for tests such as the EOC. Missouri achievement-level-setting workshops for the grade-level Missouri Assessment Program (MAP) used an item-mapping procedure commonly known as Bookmark standard setting; however, that method requires placing the items in a difficulty-ordered item book, which necessitates that the item difficulty parameters be known. In the case of the 2009 MO EOC Assessments, because the operational assessment window had not ended at the time of the event, parameter estimates from the operational test form were not available. Additionally, the method for and timing of this standard-setting event mirrored the Phase I event that took place in the fall of 2008. In that case, the standard setting was scheduled for fall due to federal submission requirements, and the modified Angoff method was used because operational data were not available at the time of the event.

The modified Angoff method does not require placing the items in difficulty order; it was therefore a suitable choice of methods for this event.

The modified Angoff method requires three distinct rounds of panelist judgments. Between the first and second rounds, Riverside Publishing provided the panelists with item-difficulty data for their consideration. Because operational data were not available in November, the item data were derived from the Spring 2009 field test event. Panelists were appropriately cautioned about the limitations of such data.

Before the last round of judgments, Riverside Publishing staff provided the panelists with statewide impact data for the assessment. These data were intended to serve as an anchor for the panelists' recommendations. Again, because actual performance data were not available, the data were based on projected statewide score distributions generated from the Spring 2009 field test event. It is likely that a stand-alone field test event would produce lower-than-expected results due to decreased student motivation; therefore, Riverside Publishing psychometricians would consider the field test data "lower-bound" estimates of actual student performance in an operational event. As with the item-level data estimates, the facilitators cautioned the panelists about relying too much on these impact data.

Despite the limitations of the field test data for the standard-setting activities, we believe that providing panelists with even tentative data was desirable, both to mirror procedures used for establishing standards for previous Missouri assessments and to provide panelists with an “external reality check” on their evolving recommendations. Past technical advisory committee discussions confirmed the use of these projected statewide impact data.

In addition to the caveats about item level data and impact data, panel facilitators clearly communicated to the panelists that the results of their standard-setting activities would be purely advisory to DESE. DESE would consider the recommendations and present them to the state board of education for approval.

3.2.2 Description of the Test Forms and Considerations

The MO EOC Phase II Assessments are composed of only selected response (multiple-choice) items. DESE chose to use the MO EOC Spring 2010 operational forms for the standard-setting event. These forms were selected from the several available operational forms because they would be the most widely used in the 2009–2010 test administration year. Although the final printed test booklets were not available yet at the time of the event, Riverside staff presented the panelists with prototypes that contained all the test items in the same order and with the same “look and feel” as the final printed test booklets.

3.3 Specific Standard-Setting Activities

The Standard-Setting Session Agendas provided general guides regarding the time devoted to each activity. Copies of the agendas are included as Appendix F. Questar facilitators held closely to the times contained in the agenda. They used identical processes, including presentation slides and scripts, across all five sessions to minimize any intersession differences related to facilitator or session variance.

The following sections provide detail about the processes that Questar and Riverside Publishing followed during the course of the standard-setting workshop.

3.3.1 General Process Overview

The first 90 minutes of the three-day session served as an introduction and overview to the general standard-setting processes. First, Dr. Andrea Wood, Director of Assessment for DESE, oriented the panelists to the MO EOC program and briefly outlined the session purpose and intended outcomes.

Next, Michael Beck of Questar led a general overview, “What Is Standard Setting?” Its purpose was to ensure a common understanding of the fundamental elements of the process. Mr. Beck included a brief overview of the general process of establishing student performance standards, ground rules for panelist activities, and some key elements for the panelists to focus on when attempting to set standards. Mr. Beck also advised the panelists that their work was advisory to DESE. This introduction was a high-level overview of the standard-setting process; individual facilitators provided more detail about each step in the process after the panels broke into content-specific groups. The PowerPoint slides presented during the opening session are included as Appendix G of this report.

Finally, Dr. Sheila Potter of Questar provided a general overview of ALDs and their importance to the standard-setting process. Since the panels would be reviewing, editing, and expanding on draft versions of the ALDs provided by the state, it was important for panelists to understand the critical role of ALDs in the standard-setting process. Following this activity, panelists divided into the content-specific panel break-out rooms, where all remaining work for the sessions took place.

3.3.2 Panelists Take the Operational Assessments

After reconvening in the content-area panels, panelists first introduced themselves and signed DESE-provided confidentiality forms. Facilitators introduced themselves and reiterated the high-level standard-setting processes that Mr. Beck had discussed during the opening session. Facilitators then allowed the panelists time to take and score the Spring 2010 form of the operational assessment. For this activity, panelists had access to the test administration procedures, the actual test content, and all relevant scoring materials. Field test items that were included in these forms were removed from the test books. Because these were “live” materials, facilitators stressed the confidentiality of all of the items.

The primary purpose of this activity was to familiarize panelists with the actual, complete assessment content before beginning the standard-setting judgments. Following this review of the tests, each panel spent a short time reacting to the assessment content: difficulty, sources of challenge, scoring issues, and general and specific reactions. This exercise provided the panelists, especially those not familiar with the MO EOC Assessments, with a context concerning the definition of *Proficient* as conveyed by the assessments.

3.3.3 Panelists Discuss and Fine-Tune the ALDs

At the standard-setting workshop, participants devoted a significant portion of time to fine-tuning the draft ALDs for each assessment. The facilitators provided the panelists with draft copies of the appropriate ALDs, copies of the MO EOC Assessment blueprint, and the appropriate Course-Level Expectations (CLEs). Using these materials as references and drawing on the expertise of the panelists, the Questar facilitators led each panel in an extended discussion and exercise to refine and elaborate each of the ALDs. Once this activity was complete, the panels relied on the resulting ALDs as a reference during the actual standard-setting activities. In addition, the panelists were allowed to make appropriate, though generally minor, revisions and refinements to the ALDs during and after the standard-setting activities.

All content-area panels began this activity with a review of the draft ALDs for the particular content area. Separate panels of Missouri educators had developed these draft ALDs during DESE-led sessions several weeks earlier. The ALD review activity was highly interactive, with panelists suggesting changes and other refinements—both substantive and editorial—to the draft ALDs. The ultimate task was to operationalize specific behaviors indicating performance at the Advanced, Proficient, Basic, and Below Basic levels in the content area. The activity involved brainstorming, with each panelist’s ideas recorded and considered without expecting consensus. Panel suggestions were written on the draft ALDs, a copy of which was given to each panelist, or on chart paper

displayed around the room. Panelists were later able to refer to these pages, along with the original drafts, during the actual judgment activities. The thoroughness of the ALD refinement activities and the extent to which the panelists, individually and as a group, internalized the ALDs significantly impacts the soundness of the subsequent standard-setting activities. For this reason, approximately one and a half hours was devoted to this activity in the session agenda.

At the conclusion of the standard-setting sessions, DESE collected the panelist recommendations for ALD revisions for consideration in the wording of the final ALDs. Appendix H contains a copy of the draft ALDs that were distributed to the panelists at the outset of the standard-setting workshop. The panels' final edits are indicated within the draft ALDs.

3.3.4 Orientation to the Modified Angoff Procedures

After the ALD review activity was complete, facilitators oriented the panels to the specific tasks involved with the modified Angoff standard-setting process. The modified Angoff process requires panelists to read and make judgments about each successive item in the test book, using the following procedures. When reading an item, panelists were to consider the item's importance in the context of the underlying Course-Level Expectation (CLE), the task(s) required of the student, and the item's difficulty. They were to decide what percentage of minimally Proficient students should be able to answer the item correctly. Panelists were then to decide what percentage of minimally Advanced students would answer the item correctly. Finally, they were to decide what percentage of minimally Basic students would answer the item correctly. (While the MO EOC Assessments contain four levels of student performance, cuts are made at only three locations on the score distribution.) The panelists were instructed to consider their judgments in this order—Proficient, Advanced, and Basic—as it anchors the item judgments on the most important cut, Proficient. In addition, once panelists make their judgment for the Proficient students, they have a clearer, more defined range of values to consider for the other two cuts.

The facilitators included the following important points in their presentations:

- Panelists should focus on the *threshold* of performance in each category.
- Panelists should review and recall what each performance descriptor means.
- Panelists should focus on the group of students who would take the MO EOC Assessment students statewide, not just the students in the school or district in which they work.

Finally, the facilitators explained that the panelists' judgments should be made independently and anonymously and that security of the testing materials should be maintained at all times.

The steps outlined in sections 3.3.1 through 3.3.4 composed the activities of the first day of the workshop. The second day began with an overview of the previous day's activities and outcomes, after which panelists took a five-item selected response qualifying test concerning the standard-setting procedures they were about to use. A copy of this instrument is provided as Appendix I. This qualifying test was used to ensure that all

panelists understood the importance of the ALDs and selected elements of the modified Angoff procedure before beginning the process of making item judgments.

Before moving on to the Round 1 judgments, facilitators asked the panelists to complete and sign a form indicating that they understood the information they had received and discussed and that they felt prepared to make their Round 1 judgments. All panelists so indicated. An example of this form is included as Appendix J.

3.3.5 Round 1 Judgments

At this point, panelists were ready to make their Round 1 judgments. This work was completed anonymously (via judge identification numbers known only to the individual panelist and Riverside Publishing staff) and independently. Panelists indicated their judgments on specially designed scannable rating sheets developed for each content area. These rating sheets contained three fields for each test item: one for Basic, one for Proficient, and one for Advanced. As panelists made their judgments for each item, facilitators instructed them to “bubble in” one value for each achievement level (in other words, for Item 1, the panelist entered a number corresponding to the percentage of students expected to choose a correct answer at the minimally Basic level, a number for the minimally Proficient level, and a number for the minimally Advanced level). Panelists followed this procedure for all the test items. An example rating sheet is included as Appendix K.

Most panelists completed their first round of judgments within 60 minutes; however, there was no time limit for this activity, and some panelists required 90 minutes to complete their judgments. This is not unusual for the first round of judgments in a modified Angoff workshop; often some panelists are still struggling to understand the task at this point, thus requiring more time to make their judgments. After panelists completed their judgments, they turned in their rating sheets and were excused for the evening.

3.3.6 Feedback and Discussion of Round 1 Judgments

During the evening, the Riverside Publishing psychometricians prepared reports of the Round 1 judgment results. The next morning’s session began with an overview of these reports. The first report was a table displaying all three raw score cuts as determined individually by each panelist’s judgments. This table also contained the entire panel’s average, median, highest, and lowest raw score cuts, as well as the standard deviation of all the panelists’ judgments for each of the three raw score cuts. The second report contained a frequency display of all three cut scores (Basic, Proficient, and Advanced) recommended by each panelist. This bar graph displayed all the panelists’ judgments on a single graph so that areas of dispersion or overlap in the raw cut scores would be apparent. These reports were anonymous; ID numbers, rather than names, were used to identify individual panelists.

The facilitators spent time reviewing these reports with the participants to ensure that everyone understood how to interpret the information contained in them. Using the Round 1 results, facilitators then led an extended discussion of the Round 1 judgments. Most of the work focused on the interim judgments of panelists at an individual test item level. Facilitators actively engaged all the panelists in the discussion to gauge whether

they had indicated the item percentage values that they intended, that the reasoning processes they followed in making their judgments were consistent with good practice, and that the panelists clearly understood the mechanics of making item judgments. Throughout these discussions, facilitators focused on the key elements of the standard-setting process: establishing the *threshold* of each cut, projecting the cuts for a *statewide* population of these students, and focusing on the particular *course* and *performance level* of the target populations.

Much like a jury deliberation, this discussion also allowed the panelists to hear their peers' comments and rationales for their judgments. This phase took around one hour, depending on the session; facilitators permitted discussion to continue until they perceived that all panelists were prepared to make their second round of judgments.

Next, facilitators distributed statewide item difficulty data derived from the 2008 field test event. The derived item difficulties were item *p*-values, or the proportion of students who answered the item correctly in the 2009 field test event. Recall from section 3.2.1 that the data used to derive the item difficulty values were collected during a stand-alone field test event. During the presentation of the item difficulty data, facilitators advised the panelists that caution should be taken in interpreting the item difficulty data, since student motivation may not have been the same as it would be on an operational assessment. Facilitators also explained that these data were relevant, but not critical, to the process of setting standards.

3.3.7 Round 2 Judgments

During Round 2, panelists again worked independently to make judgments about the percentage of students at the threshold of each achievement level who would answer each item correctly. Facilitators explained to the panelists that they were free to maintain their Round 1 judgments or to revise them as they deemed appropriate. Before beginning this round of judgments, panelists were once more reminded of the key elements of the process and were focused specifically on the ALDs for their assessment. Again, there was no time limit, although this round required significantly less time than did Round 1 because the panelists more clearly understood the judgment process. In addition, they were increasingly familiar with the specific items for which they were making the judgments. Further, many panelists had begun to formulate some or all of their Round 2 item judgments during the discussion of the Round 1 results.

After panelists completed their Round 2 judgments and recorded their recommendations on their rating sheets, they submitted the forms and were excused for lunch. After all rating sheets were collected, Riverside psychometricians prepared the reports of the Round 2 judgments.

3.3.8 Feedback and Discussion of Round 2 Judgments

When the panels convened after the lunch break, facilitators presented the results of the Round 2 judgments. The reports showing the Round 2 results were used to guide another discussion of specific items. The presentation and discussion at this stage were similar to, although more focused than, those following Round 1.

Following this discussion, facilitators provided panelists with estimated statewide impact data—that is, the percentages of students statewide whose performance likely would be

labeled Below Basic, Basic, Proficient, or Advanced were the panels' Round 2 judgments adopted. The panels' median Round 2 judgments were used to determine cut scores for this report. Again, facilitators advised the panelists that the impact data were relevant to, but not essential for, setting performance standards. (This cautionary information was especially important in the case of MO EOC Assessments, as the data were not grounded in an operational administration of the assessments.)

When facilitators were comfortable that all panelists were prepared to make their final recommendations, they proceeded to Round 3 of judgments.

3.3.9 Round 3 of Judgments, Meeting Evaluation, and Final Inspection of ALDs

For Round 3, the panelists' judgments consisted of one recommended cut score for each achievement level; panelists were not required to make item-level judgments. Panelists were given unlimited time to complete their Round 3 (final) recommendations, although most completed their judgments within 20 minutes. All panelists clearly understood that only the Round 3 judgments counted as their recommendations and that the three rounds were not combined in any way to form the proposed cuts.

After completing their final round of judgments, panelists completed a written evaluation of the process. This evaluation covered the panelists' opinions of the adequacy of the training provided and their comfort with and confidence in their judgments on a round-by-round basis. The form also contained spaces for the panelists to write other comments concerning the workshop. A copy of this evaluation is included as Appendix L of this report.

After facilitators collected the panelist evaluations, they allowed the panels time for a final review of the ALDs. During this time, panelists were allowed to discuss and, if necessary, fine-tune or revise the ALDs. Finally, panelists were thanked for their participation and dismissed.

CHAPTER 4: RESULTS

4.1 Session Results by Panel and Round

Appendixes M, N, O, P, and Q contain the feedback reports by round for English I, Algebra II, Geometry, Government, and American History, respectively. Selected data from these graphs and tables are summarized below for ease of cross-round and cross-content-area comparison.

The standard-setting literature typically considers the *median* recommendation to be the best indicator of a panel’s judgment, as the median would not be impacted by the judgments of a few outlying panelists. In the case of this standard-setting event, as a review of Appendixes M through Q indicates, all median and mean Round 3 cut scores are within a single rounded raw-score point for all of the content areas. Therefore, the choice of a measure of central tendency for these particular panels would not markedly impact the resulting cut scores.

Table 4.1 contains the median panel cut scores for all rounds and content areas. As the data in Table 4.1 indicate, the panels did not make significant changes to their recommended cut scores across the three rounds of judgments. This is not to say that individual panelists made the same recommendations across rounds. In fact, across the 15 sets of judgments between rounds (5 content areas with 3 cut scores each), the average difference in the number of raw score points between cut scores was 0.67 between Rounds 1 and 2, 0.40 between Rounds 2 and 3, and 0.93 between Rounds 1 and 3. (The median raw-score change between any pair of rounds was 0.)

Table 4.1: Median Recommended Cut Scores by Content Area and Round

Cut*	Content Area														
	English I			Algebra II			Geometry			Government			American History		
	B	P	A	B	P	A	B	P	A	B	P	A	B	P	A
Round 1	18	26	32	14	23	33	17	27	33	15	25	33	18	26	32
Round 2	18	26	33	14	24	33	17	24	32	15	26	34	19	25	32
Round 3/Final	16	25	33	16	24	33	17	24	32	15	25	34	19	25	32
No. Points Possible	40			40			40			40			40		

*B = Basic; P = Proficient; A = Advanced

As is typically the case with standard-setting activities conducted over multiple rounds, the standard deviations of panelists’ recommendations got smaller across rounds, indicating both an increasing level of panelist understanding of the process and increasing inter-panel agreement based on group discussions between rounds of judgments. This is illustrated graphically through an examination of the frequency bar charts in Appendixes M through Q, as well as statistically in the tabled results. The bars representing Basic, Proficient, and Advanced cut scores clearly become taller and more compact over each round of judgments. While panelists came closer to their peers in judging the most appropriate cut scores, even in Round 3—not unexpectedly—there was still a fair amount of spread in the recommended scores.

Standard errors of the median judgments (*SEJs*) were computed for all cut scores across all panels and are presented in Table 4.2. The *SEJ* is a measure of the degree of variability among the participants in each panel. It is calculated in the following manner:

$$SEJ = SE_{Mean} \times 1.25 ,$$

where SE_{Mean} is the standard error of the mean of the panel’s cut scores. SE_{Mean} is calculated by taking the standard deviation of the participant ratings divided by the square root of the number of panelists. Lower values of *SEJ* indicate greater cut score agreement among the participants within a panel. In no case did the Round 3 *SEJ* reach a whole raw-score unit. Most were lower than half of a raw-score point. This indicates that the final median judgments are highly stable.

Table 4.2: Standard Errors of Median Judgments for Each Cut Score Across Rounds and Panels

Panel	Basic			Proficient			Advanced		
	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3	Round 1	Round 2	Round 3
English	2.20	1.34	0.75	0.38	0.23	0.37	0.07	0.03	0.05
Algebra	0.67	0.63	0.35	0.94	0.62	0.34	0.16	0.13	0.11
Geometry	1.46	0.86	0.51	0.40	0.40	0.40	0.11	0.12	0.08
Government	1.85	0.63	0.24	0.88	0.41	0.19	0.10	0.07	0.02
History	0.98	0.61	0.57	0.71	0.87	0.44	0.21	0.19	0.17

Table 4.3 summarizes the projected statewide percentages of students whose EOC scores will fall in each of the four performance categories. These data are based on the Spring 2009 field test results and may be viewed as “lower-bound” estimates of the likely statewide results that will be obtained at the end of the 2009–2010 school year.

Table 4.3: Projected Statewide Percentages of Students Scoring in the Various Performance Categories on the EOC Assessments, 2009–2010

Assessment	Below Basic	Basic	Proficient	Advanced
English I	9	34	37	20
Algebra II	14	45	33	8
Geometry	18	30	38	14
Government	12	44	34	10
History	23	32	30	15

4.2 Results of Participant Evaluations

Appendix R contains the data collected from panelists for the rating-scale type items on the evaluation forms. For the questions pertaining to the organization and adequacy of information provided in the opening session, the panelists generally provided ratings of 4 or 5 (on a scale of 1 to 5, with 5 being the highest). For the evaluation questions pertaining to the discussions of the achievement-level descriptors and the panelists’ understanding of each of the ALDs after the discussions, in all cases at least 80% of the panelists provided ratings of 4 or 5. The questions pertaining to the panelists’ understanding of the judgment process and feedback on the results of each round

received similar scores. Overall, these data indicate that the panelists generally understood what was expected of them, were comfortable with the process, and were comfortable with the resulting cut scores.

APPENDIX A:

LIST OF MISSOURI EDUCATION-RELATED PROFESSIONAL ORGANIZATIONS

Missouri Migrant Education/English Language Learning
Missouri National Education Association
Missouri National Education Association
Missouri PTA
Missouri Reading Initiative
Missouri School Boards' Association
Missouri School Public Relations Association
Missouri Special Needs Association
Missouri Staff Development Council
Missouri State Council-International Reading Association
Missouri State Teachers Association
Missouri Student Success Network
Missouri Unit Association of Teacher Educators
Missouri United School Insurance Council
Show-Me Curriculum Administrators Association
Show-Me Scholars
Southwest Center for Educational Excellence
SuccessLink
Technology Education Association of Missouri

APPENDIX B:
NOMINATION LETTERS



Missouri Department of Elementary and Secondary Education

— Making a positive difference through education and service —

July 31, 2009

Dear School Administrator,

In 2009-2010, Missouri students will have the opportunity to take the second phase of End-of-Course (EOC) assessments, including tests in Algebra II, Geometry, Integrated Mathematics II and III, English I, American History, and Government. Just as we determined achievement levels for the first phase EOC assessments (Algebra I, English II, and Biology) about a year ago, we will need to define student performance on these EOC assessments as Below Basic, Basic, Proficient or Advanced.

To accomplish this important task, we will conduct an Achievement Level Setting Conference with the assistance of our contractors for EOC assessment development, Riverside Publishing and Questar Assessment. This conference will provide an opportunity for panels of educators and other individuals to discuss course-level expectations for each applicable course and to review assessment items to determine the appropriate "cut scores" for each achievement level. The composition of the achievement level setting panels and the expertise of panelists are critically important to this process. The panel for each EOC assessment will consist of 15-18 members. Within each panel, a minimum of 50 percent of the panelists will be classroom teachers. At least half of the remaining panelists will be non-teacher educators (administrators, curriculum specialists, etc.) with knowledge of the appropriate content area. Each panel will also include non-school employees (parents, business professionals, etc.) with expertise in the appropriate content area. Because you have the opportunity to work with excellent educators, as well as members of your community, we are asking for your input in assembling achievement level setting panels that are knowledgeable and reflective of Missouri's diverse population.

Forms for you to nominate classroom teachers, non-teacher educators and business professionals to serve on EOC achievement level setting panels, along with guidelines for panelist nomination, are posted on the DESE website at <http://www.dese.mo.gov/divimprove/assess/>. These nominations will be placed into a large pool from which we will select final panelists. Selected panelists will be representative of the state's demographic characteristics and geographic make-up. **The EOC Achievement Level Setting Conference will be held on November 2-5, 2009.** Panels for English I, American History, and Integrated Mathematics II and III (combined panel) will meet on **November 2nd and 3rd**; panels for Government, Geometry, and Algebra II will meet on **November 4th and 5th**. Specific location for the conference has not yet been determined, but it will be held in mid-Missouri.

If you are interested in nominating an individual(s) to serve as a panelist, please complete the appropriate form(s) according to the specified guidelines and return it to the Curriculum and Assessment Section by e-mail, mail or fax. **Nomination forms must be postmarked, faxed, or e-mailed on or before September 1, 2009, to be considered for panel selection. Return address and fax number are printed on the forms.**

Prior to submitting nominations, please contact any individual you wish to nominate to ensure his/her interest and availability if selected to participate as a panelist. It is very important that panelists are available for both days of the conference for their content area. All participants will be reimbursed for travel expenses and meals not provided during the conference. Additionally, those panelists that are not otherwise being compensated (by their employer, school district, etc.) will receive a stipend of \$100 for each full day of work. For teachers that are on contract (and, therefore not requesting a stipend) school districts will be reimbursed for the cost of substitutes. We will notify all potential panelists of the status of their nomination in early October. Those nominees selected to participate in the Achievement Level Setting Conference will receive further information about the conference at that time. Thank you for your assistance in this important endeavor. Please feel free to contact the Curriculum and Assessment Section at 573-751-2625 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Stan Johnson". The signature is written in dark ink and is positioned below the word "Sincerely,".

Stan Johnson, Assistant Commissioner
Division of School Improvement



Missouri Department of Elementary and Secondary Education

— *Making a positive difference through education and service* —

July 31, 2009

TO: RPDC Directors
FROM: Michael Muenks, Coordinator, Curriculum and Assessment
RE: End-of-Course Assessment Achievement Level Setting

In 2009-10, Missouri students will have the opportunity to take End-of-Course (EOC) assessments in Geometry, Algebra II, Integrated Mathematics II and III, English II, American History, and Government (Phase II EOC tests). From November 2-5, DESE's Assessment Section will conduct an achievement level setting conference with the assistance of Riverside Publishing and Questar Assessment to determine the scores that will be used to define student performance as Below Basic, Basic, Proficient or Advanced. Panels for English I, American History, and Integrated Mathematics II and III (combined panel) will meet on November 2nd and 3rd; panels for Geometry, Algebra II, and Government will meet on November 4th and 5th. Specific location for the conference has not yet been determined, but it will be held in mid-Missouri.

This conference will provide an opportunity for panels of educators and other individuals to discuss course-level expectations for each applicable course and to review assessment items to determine the appropriate "cut scores" for each achievement level. The composition of the achievement level setting panels and the expertise of panelists are critically important to this process. We anticipate including at least two post-secondary education representatives on each panel.

I am requesting your assistance in identifying teacher educators or other post-secondary educators that have expertise in the appropriate course content to serve as panelists. Nomination guidelines and forms are posted on the DESE website at <http://www.dese.mo.gov/divimprove/assess/>. If you would like to nominate an individual to serve as a panelist, please return the completed nomination form to the Curriculum and Assessment Section by e-mail, mail or fax no later than September 1, 2009 (mailing address and fax number are printed on the form).

Prior to submitting nominations, please contact any individual you wish to nominate to ensure his/her interest and availability if selected to participate as a panelist. It is very important that panelists are available for both days on which their panel will meet. All participants will be reimbursed for travel expenses and meals not provided during the conference. Additionally, those panelists that are not otherwise being compensated by their employer will receive a stipend of \$100 for each full day of work. We will notify all panelists of the status of their nomination in early October. Those nominees selected

to participate in the Achievement Level Setting Conference will receive further information about the conference at that time.

Feel free to contact the Curriculum and Assessment Section at 573-751-2625 or e-mail map@dese.mo.gov if you have any questions.

July 31, 2009

Dear Colleague in Education,

In 2009-2010, Missouri students will have the opportunity to take the second phase of End-of-Course (EOC) assessments, including tests in Algebra II, Geometry, Integrated Mathematics II and III, English I, American History, and Government. Just as we determined achievement levels for the first phase EOC assessments (Algebra I, English II, and Biology) about a year ago, we will need to define student performance on these EOC assessments as Below Basic, Basic, Proficient or Advanced.

To accomplish this important task, we will conduct an Achievement Level Setting Conference with the assistance of our contractors for EOC assessment development, Riverside Publishing and Questar Assessment. This conference will provide an opportunity for panels of educators and other individuals to discuss course-level expectations for each applicable course and to review assessment items to determine the appropriate “cut scores” for each achievement level. The composition of the achievement level setting panels and the expertise of panelists are critically important to this process. The panel for each EOC assessment will consist of 15-18 members. Within each panel, a minimum of 50 percent of the panelists will be classroom teachers. At least half of the remaining panelists will be non-teacher educators (administrators, curriculum specialists, etc.) with knowledge of the appropriate content area. Each panel will also include non-school employees (parents, business professionals, etc.) with expertise in the appropriate content area. Because you have the opportunity to work with excellent educators, as well as members of communities throughout the state, we are asking for your input in assembling achievement level setting panels that are knowledgeable and reflective of Missouri’s diverse population.

Forms for you to nominate individuals to serve on EOC achievement level setting panels, along with guidelines for panelist nomination, are posted on the DESE website at <http://www.dese.mo.gov/divimprove/assess/>. These nominations will be placed into a large pool from which we will select final panelists. Selected panelists will be representative of the state’s demographic characteristics and geographic make-up. **The EOC Achievement Level Setting Conference will be held on November 2-5, 2009.** Panels for English I, American History, and Integrated Mathematics II and III (combined panel) will meet on **November 2nd and 3rd**; panels for Government, Geometry, and Algebra II will meet on **November 4th and 5th**. Specific location for the conference has not yet been determined, but it will be held in mid-Missouri.

If you are interested in nominating an individual(s) to serve as a panelist, please complete the appropriate form(s) according to the specified guidelines and return it to the Curriculum and Assessment Section by e-mail, mail, or fax. **Nomination forms must be postmarked, faxed, or e-mailed on or before September 1, 2009, to be considered for panel selection. Return address and fax number are printed on the forms.**

Prior to submitting nominations, please contact any individual you wish to nominate to ensure his/her interest and availability if selected to participate as a panelist. It is very important that panelists are available for both days of the conference for their content area. All participants will be reimbursed for travel expenses and meals not provided during the conference. Additionally, those panelists that are not otherwise being compensated (by their employer, school district, etc.) will receive a stipend of \$100 for each full day of work. For teachers that are on contract (and, therefore not requesting a stipend) school districts will be reimbursed for the cost of substitutes. We will notify all potential panelists of the status of their nomination in early October. Those nominees selected to participate in the Achievement Level Setting Conference will receive further information about the conference at that time. Thank you for your assistance in this important endeavor. Please feel free to contact the Curriculum and Assessment Section at 573-751-2625 if you have any questions.

Sincerely,

Stan Johnson, Assistant Commissioner
Division of School Improvement

APPENDIX C:
NOMINATION FORMS



**PHASE II END-OF-COURSE ASSESSMENT ACHIEVEMENT LEVEL SETTING
CLASSROOM TEACHER NOMINATION**

Directions

Complete this form for each individual you wish to nominate to serve as a panelist for Phase II End-of-Course Assessment Achievement Level Setting. Please verify spelling of first and last name of the individual you are nominating, and ensure that all information is complete and accurate.

E-MAIL, FAX OR MAIL: the completed form no later than October 5, 2009

E-MAIL: sara.hagenhoff@dese.mo.gov

FAX: (573) 526-7861

MAIL: MO Department of Elementary and Secondary Education, ATTN: Sara Hagenhoff
P.O Box 480
Jefferson City, MO 65102

QUESTIONS: Call: (573) 751-2625 or Email: sara.hagenhoff@dese.mo.gov

Content Area

END-OF-COURSE ASSESSMENT FOR WHICH NOMINEE SHOULD SERVE AS A PANELIST (please check one):

Algebra II Geometry Integrated Mathematics II/III English I American History Government

Years of experience in teaching the course indicated above: _____

Participant Information

CURRENT NAME (LAST, FIRST, MIDDLE INITIAL) Please Print:

STREET ADDRESS:

CITY, STATE, ZIP CODE:

HOME E-MAIL ADDRESS

HOME PHONE NUMBER:

RACE/ETHNICITY (optional):

Asian/Pac Isl. Black Hispanic Native Am. Indian White

CURRENT COURSE ASSIGNMENT:

NUMBER OF YEARS IN CURRENT POSITION:

AREAS OF EXPERTISE (Mark all that apply):

Regular Education Special Education English Language Learners (ELL)

GENDER: Male Female

District Information

SCHOOL DISTRICT NAME:

COUNTY-DISTRICT CODE:

SCHOOL BUILDING NAME:

SCHOOL CODE:

SCHOOL EMAIL ADDRESS:

SCHOOL PHONE NUMBER

Experience/Expertise

Summarize the nominee's involvement in education initiatives that are pertinent to Phase II End-of-Course assessment achievement level setting (e.g., Show-Me Standards development/review, Course-Level/Grade-Level Expectations development/review, EOC development activities, Regional Professional Development Center professional development activities).

Professional Organizations/Affiliations

Individual Providing Nomination

NAME/TITLE

PHONE NUMBER

E-MAIL ADDRESS



PHASE II END-OF-COURSE ASSESSMENT ACHIEVEMENT LEVEL SETTING NON-TEACHER EDUCATOR NOMINATION (INCLUDING POST-SECONDARY EDUCATOR)

Directions

Complete this form for each individual you wish to nominate to serve as a panelist for Phase II End-of-Course Assessment Achievement Level Setting. Please verify spelling of first and last name of the individual you are nominating, and ensure that all information is complete and accurate.

E-MAIL, FAX OR MAIL the completed form no later than **October 5, 2009**, to Sara Hagenhoff

E-MAIL: sara.hagenhoff@dese.mo.gov

FAX: (573) 526-7861

MAIL: MO Department of Elementary and Secondary Education, ATTN: Sara Hagenhoff

P.O. Box 480

Jefferson City, MO 65102

QUESTIONS: Call: (573) 751-2625 or Email: sara.hagenhoff@dese.mo.gov

Content Area

END-OF-COURSE ASSESSMENT FOR WHICH NOMINEE SHOULD SERVE AS A PANELIST (please check one):

Algebra II Geometry Integrated Mathematics II/III English I American History Government

Participant Information

CURRENT NAME (LAST, FIRST, MIDDLE INITIAL) Please Print:

HOME ADDRESS:

CITY, STATE, ZIP CODE:

HOME E-MAIL ADDRESS

HOME PHONE NUMBER:

RACE/ETHNICITY (optional): Asian/Pac Isl. Black Hispanic
 Native Am. Indian White

GENDER: Male Female

District Information (If nominee is a post-secondary educator, please provide name of institution.)

SCHOOL DISTRICT NAME:

COUNTY-DISTRICT CODE:

SCHOOL BUILDING NAME:

SCHOOL CODE:

SCHOOL EMAIL ADDRESS:

SCHOOL PHONE NUMBER

Experience/Expertise

Summarize the nominee's involvement in education initiatives that are pertinent to End-of-Course assessment achievement level setting (e.g., Show-Me Standards development/review, Grade-Level/Course-Level Expectations development/review, EOC development activities)

CURRENT POSITION/TITLE:

PREVIOUS TEACHING EXPERIENCE

Grade Level(s): _____ Years: _____ Subject Area(s): _____

OF YEARS IN CURRENT POSITION: _____

AREAS OF EXPERTISE (Mark all that apply):

Regular Education Special Education English Language Learners (ELL)

Professional Organizations/Affiliations

Individual Providing Nomination

NAME/TITLE

PHONE NUMBER

E-MAIL ADDRESS



**PHASE II END-OF-COURSE ASSESSMENT ACHIEVEMENT LEVEL SETTING BUSINESS
PROFESSIONAL NOMINATION FORM**

Directions

Complete this form for each individual you wish to nominate to serve as a panelist for Phase II End-of-Course Assessment Achievement Level Setting. Please verify spelling of first and last name of the individual you are nominating, and ensure that all information is complete and accurate.

E-MAIL, FAX OR MAIL the completed form no later than **September 1, 2009**, to Sara Hagenhoff:

E-MAIL: sara.hagenhoff@dese.mo.gov

FAX: (573) 526-7861

MAIL: MO Department of Elementary and Secondary Education, ATTN: Sara Hagenhoff
P.O. Box 480
Jefferson City, MO 65102

QUESTIONS: Call: (573) 751-2625 or Email: sara.hagenhoff@dese.mo.gov

Content Area

END-OF-COURSE ASSESSMENT FOR WHICH NOMINEE SHOULD SERVE AS A PANELIST (please check one):

- Algebra II Geometry Integrated Mathematics II/III English I American History Government

Participant Information

CURRENT NAME (LAST, FIRST, MIDDLE INITIAL) Please Print:

EMPLOYER:

TITLE:

HOME ADDRESS:

CITY, STATE, ZIP CODE:

HOME E-MAIL ADDRESS

HOME PHONE NUMBER:

RACE/ETHNICITY (optional): Asian/Pac Isl. Black Hispanic
 Native Am. Indian White

GENDER: Male Female

Experience/Expertise

Explain why you believe this individual would be an asset to the Phase II End-of-Course Assessment Achievement Level Setting Panel:

Professional Organizations/Affiliations

Individual Providing Nomination

NAME/TITLE

PHONE NUMBER

SCHOOL DISTRICT/EMPLOYER

E-MAIL ADDRESS

APPENDIX D:

PANELIST QUALIFICATION GUIDELINES

**GUIDELINES FOR PANELIST NOMINATION
PHASE II END-OF-COURSE ASSESSMENT ACHIEVEMENT LEVEL SETTING**

Qualifications of Classroom Teachers:

- Must have taught the course for which they are being nominated to serve as a panelist for a minimum of five years.
- Should be familiar with the Show-Me Standards and the applicable Course-Level Expectations.
- Should be recognized as “outstanding” in professional performance.

Qualifications of Non-Teacher Educators and Post-Secondary Educators:

- May be a non-teacher educational staff member in a building or district central office, or an instructor or administrator at a post-secondary institution.
- Must have familiarity with the course content for which they are being nominated to serve as a panelist.
- Should be familiar with the Show-Me Standards and applicable Course-Level Expectations.
- Must be recognized as “outstanding” in professional performance by the individual making the nomination.

Qualifications of Business Professionals:

- Must have familiarity with the content of the course for which they are being nominated to serve as a panelist (Algebra II, Geometry, Integrated Mathematics II and III, English I, American History, or Government).
- Should either:
 - use high school course content for the applicable content area in their daily professional work
 - OR be familiar with the knowledge and skills that high school students completing the applicable courses must possess to have a firm foundation for further coursework or for the workplace.
- Should not be a current or former employee of the public school system.

General Information to Share with Nominees:

- It is imperative that panelists participate fully in all conference activities. **Before making a nomination, please verify that any individual you nominate is all available for ALL applicable conference dates (November 2-3 for English I, American History, and Integrated Mathematics II and III; November 4-5 for Algebra II, Geometry, and Government).**
- A total of 15-18 panelists per End-of-Course assessment will be selected from the pool of nominations. A minimum of half of the members of each panel will be classroom teachers. At least half of the remaining panelists will be non-teacher educators. Each panel will also include members of the business/professional community.
- All nominees will receive notice of the status of their nomination in early October.
- Selected panelists will receive a stipend of \$100 per day for their work if they are not otherwise being compensated by their employer. (Classroom teachers may request a stipend if not on contract with their school district on meeting days.) Participants will be reimbursed for mileage at the State’s approved rate, lodging, and meals not provided during the conference.

Making a Nomination:

- Download and complete the correct nomination form for each individual(s) you wish to nominate:
 - Classroom Teacher Nomination
 - Non-Teacher Educator Nomination
 - Business/Professional Nomination
- Make sure the form is completed fully and accurately. Incomplete forms will not be placed in the pool for consideration. Please verify all information on each form prior to submitting nominations.
- Mail, e-mail or fax the nomination form(s) to DESE on or before September 18, 2009. Forms postmarked, e-mailed or faxed after September 18, 2009, will NOT be accepted.

PLEASE CONTACT THE CURRICULUM AND ASSESSMENT SECTION AT 573-751-2625 OR E-MAIL sara.hagenhoff@dese.mo.gov IF YOU HAVE FURTHER QUESTIONS ABOUT COMPLETING NOMINATION FORMS.

APPENDIX E:

PANEL DEMOGRAPHIC CHARACTERISTICS

Appendix Table E.1: Panel Characteristics for English I

District	Position	Gender	Ethnicity	Community Type	RPDC Region	% FRL*	% Minority*
Francis Howell	Classroom Teacher	Female	White	Suburban	St. Louis	13%	11%
Boonville R-I	Classroom Teacher	Female	White	Rural	Heart of Missouri	46%	16%
Blue Springs	Nonteacher educator	Female	White	Suburban	Kansas City	21%	19%
Affton	Classroom Teacher	Female	White	Suburban	St. Louis	32%	15%
Lee's Summit R-7	Classroom Teacher	Female	White	Suburban	Kansas City	13%	19%
N/A (MC3)	Nonteacher educator	Female	White	N/A	N/A		
Milan C-2	Classroom Teacher	Female	White	Rural	Northeast	67%	39%
St. Louis Public	Classroom Teacher	Female	White	Urban	St. Louis	72%	86%
Lebanon R-III	Classroom Teacher	Female	White	Rural	Southwest	52%	5%
Butler	Nonteacher educator	Female	White	Rural	West Central	50%	6%
Raytown C-2	Nonteacher educator	Female	White	Suburban	Kansas City	49%	55%
N/A (William Woods University)	Higher Ed.	Female	Native American Indian	Rural	Heart of Missouri		
Richland R-I	Classroom Teacher	Male	White	Rural	South Central	71%	7%
Willard R-2	Classroom Teacher	Female	White	Rural	Southwest	38%	5%
Park Hill	Nonteacher educator	Male	White	Suburban	Kansas City	22%	12%
Prairie Home R-V	Nonteacher educator	Female	White	Rural	Heart of Missouri	26%	3%

*Percent free and reduced lunch (FRL) and percent minority refer to the population of the district represented by the panelist.

N/A = Not available

Appendix Table E.2: Panel Characteristics for Algebra II

District	Position	Gender	Ethnicity	Community Type	RPDC Region	% FRL*	% Minority*
Forsyth R-3	Classroom Teacher	F	White	Rural	Southwest	65%	4%
Pattonville	Classroom Teacher	M	White	Suburban	St. Louis	36%	38%
Francis Howell	Classroom Teacher	F	White	Suburban	St. Louis	13%	11%
Boonville R-I	Nonteacher Educator	M	White	Rural	Heart of Missouri	46%	16%
Jennings	Classroom Teacher	M	African American	Urban	St. Louis	84%	99%
Norwood R-I	Classroom Teacher	F	White	Rural	Southwest	62%	0%
Fredericktown	Classroom Teacher	F	White	Rural	Southeast	53%	3%
N/A (St. Charles Community College)	Higher Education	F	White	Suburban	St. Louis		
North Pemiscot R-I	Classroom Teacher	F	White	Rural	Southeast	71%	19%
Webster Groves	Classroom Teacher	F	White	Suburban	St. Louis	19%	27%
Washington	Classroom Teacher	F	White	Rural	Southeast	23%	4%
Sikeston	Classroom Teacher	F	White	Rural	Southeast	60%	39%
N/A (Northwest Missouri State University)	Higher Education	F	White	Rural	Northwest		
St. James R-I	Classroom Teacher	F	White	Rural	South Central	55%	6%
Park Hill	Classroom Teacher	F	White	Suburban	Kansas City	22%	22%
Rolla 31	Classroom Teacher	F	White	Rural	South Central	42%	11%

*Percent free and reduced lunch (FRL) and percent minority refer to the population of the district represented by the panelist.

N/A = Not available

Appendix Table E.3: Panel Characteristics for Geometry

District	Position	Gender	Ethnicity	Community Type	RPDC Region	% FRL*	% Minority*
St. James R-I	Regular Ed.	M	White	Rural	South Central	55%	6%
Kearney R-I	Regular Ed.	M	White	Rural	Missouri Western	11%	4%
Sikeston	Regular Ed.	F	White	Rural	Southeast	60%	39%
N/A (Mineral Area College)	Regular Ed.	F	White	Rural	South Central		
North St. Francois R-I	Regular Ed.	F	White	Rural	Southeast	51%	3%
Southern Reynolds County R-2	Regular Ed.	F	White	Rural	South Central	67%	3%
Richland	Regular Ed.	F	White	Rural	Southeast	53%	4%
Prairie Home R-V	Regular Ed.	F	White	Rural	Heart of Missouri	26%	3%
Ray-Pec	Regular Ed.	F	White	Rural	West Central	21%	14%
Center 58	Regular Ed.	F	White	Urban	Kansas City	67%	76%
Francis Howell	Regular Ed.	F	White	Suburban	St. Louis	13%	11%
Marshfield R-I	Regular Ed.	M	White	Rural	Southwest	42%	4%
Lees Summit	Regular Ed.	F	White	Suburban	Kansas City	13%	19%
Ferguson-Florissant	Regular Ed.	M	White	Suburban	St. Louis	64%	79%
Fairplay	Regular Ed.	M	White	Rural	Southwest	63%	1%
Fort Osage	Regular Ed.	M	White	Suburban	Kansas City	43%	16%

*Percent free and reduced lunch (FRL) and percent minority refer to the population of the district represented by the panelist.

N/A = Not available

Appendix Table E.4: Panel Characteristics for Government

District	Position	Gender	Ethnicity	Community Type	RPDC Region	% FRL*	% Minority*
N/A (Missouri Bar)	Noneducator	Female	White	Suburban	Heart of Missouri		
North Kansas City	Nonteacher Educator	Female	White	Suburban	Kansas City	39%	28%
Hazelwood	Nonteacher Educator	Female	White	Urban	St. Louis	53%	70%
Waynesville	Classroom Teacher	Male	White	Urban	South Central	39%	39%
Independence	Classroom Teacher	Male	White	Suburban	Kansas City	55%	25%
Jefferson College	Higher Education	Male	White	Suburban	St. Louis		
Sikeston R-6	Classroom Teacher	Female	White	Rural	Southeast	60%	39%
Affton	Classroom Teacher	Male	Asian/ Pacific Islander	Urban	St. Louis	32%	15%
Salem R-80	Classroom Teacher	Male	White	Rural	South Central	56%	5%
Francis Howell	Classroom Teacher	Female	White	Suburban	St. Louis	13%	11%
Neosho R-5	Classroom teacher	Male	White	Rural	Southwest	56%	17%
Rockwood	Nonteacher Educator	Female	White	Suburban	St. Louis	13%	17%

*Percent free and reduced lunch (FRL) and percent minority refer to the population of the district represented by the panelist.

N/A = Not available

Appendix Table E.5: Panel Characteristics for American History

District	Position	Gender	Ethnicity	Community Type	RPDC Region	% FRL*	% Minority*
Neosho R-5	Classroom teacher	F	White	Rural	Southwest	56%	17%
Prairie Home R-V	Classroom teacher	M	White	Rural	Heart of Missouri	26%	3%
Holden	Classroom teacher	M	White	Rural	West Central	38%	3%
Rolla 31	Classroom teacher	M	White	Rural	South Central	42%	11%
Ferguson-Florissant	Nonteacher educator	M	White	Suburban	St. Louis	64%	79%
St. James	Classroom teacher	M	White	Rural	South Central	55%	6%
Sikeston R-6	Classroom teacher	M	White	Rural	Southeast	60%	39%
Hazelwood	Classroom teacher	M	White	Urban	St. Louis	53%	70%
Dixon	Classroom teacher	M	White	Rural	South Central	45%	5%
Warrensburg R-VI	Classroom teacher	M	White	Rural	West Central	33%	15%
Francis Howell	Classroom teacher	F	White	Suburban	St. Louis	13%	11%
Park Hill	Nonteacher educator	M	White	Suburban	Kansas City	22%	12%
University City	Classroom teacher	F	African American	Urban	St. Louis	59%	88%
Neosho R-5	Classroom teacher	F	White	Rural	Southwest	56%	17%
Prairie Home R-V	Classroom teacher	M	White	Rural	Heart of Missouri	26%	3%

*Percent free and reduced lunch (FRL) and percent minority refer to the population of the district represented by the panelist.

N/A = Not available

APPENDIX F:
PARTICIPANT AGENDAS

MISSOURI EOC STANDARD SETTING

November 2–3, 2009 English I & American History

Participant Agenda

Day 1—Morning

7:45 AM: Participants Arrive for Registration and Breakfast

- Welcome, Introductions, Logistics(DESE staff)
(Large-Group session—all panels together)
- Overview of MO EOC Assessment System(DESE)
- Overview of the two days of sessions(Mike Beck [Questar])
- Intro. to Achievement-Level Descriptors (ALDs) (Sheila Potter [Questar])

(Panelists now break into 3 individual groups, separately facilitated; all subsequent panel work will take place in the separate sessions.)

- Setting Performance Standards—General Process
- “Experience” the Assessments

12:00 PM: Lunch

Day 1—Afternoon

- Definitions and Description of Performance Standards
- Orientation to the Specific Standard-Setting Methodology
- Preparation for Round 1 of Judgments
- First Round of Judges’ Work (until completed)

5:30 PM: Participants Excused

Day 2—Morning

7:45 AM: Participants Arrive for Registration and Breakfast

- Review of Day 1 Activities and Discussions
- Feedback & Discussion of Round 1 Judgments
- Preparation for Round 2 Judgments (until completed)
- Round 2 of Judges’ Work

12:00 PM: Lunch

Day 2—Afternoon

- Review of Round 2 Judgments
- Preparation for Final Judgments
- Final Round of Judgments & Evaluation (until completed)
- Final review of ALDs & Session Wrapup

4:45 PM: Participants Excused

MISSOURI EOC STANDARD SETTING

November 4–5, 2009: Algebra II, Geometry, & Government

Participant Agenda

Day 1—Morning

7:45 AM: Participants Arrive for Registration and Breakfast

- Welcome, Introductions, Logistics(DESE staff)
(*Large-Group session—all panels together*)
- Overview of MO EOC Assessment System(DESE)
- Overview of the two days of sessions(Mike Beck [Questar])
- Intro. to Achievement-Level Descriptors (ALDs) (Sheila Potter [Questar])

(*Panelists now break into 3 individual groups, separately facilitated; all subsequent panel work will take place in the separate sessions.*)

- Setting Performance Standards—General Process
- “Experience” the Assessments

12:00 PM: Lunch

Day 1—Afternoon

- Definitions and Description of Performance Standards
- Orientation to the Specific Standard-Setting Methodology
- Preparation for Round 1 of Judgments
- First Round of Judges’ Work (until completed)

5:30 PM: Participants Excused

Day 2—Morning

7:45 AM: Participants Arrive for Registration and Breakfast

- Review of Day 1 Activities and Discussions
- Feedback & Discussion of Round 1 Judgments
- Preparation for Round 2 Judgments (until completed)
- Round 2 of Judges’ Work

12:00 PM: Lunch

Day 2—Afternoon

- Review of Round 2 Judgments
- Preparation for Final Judgments
- Final Round of Judgments & Evaluation (until completed)
- Final review of ALDs & Session Wrapup

4:45 PM: Participants Excused

APPENDIX G

OPENING SESSION POWERPOINT PRESENTATION

Setting the Standard

Achievement Level-Setting Conference Missouri End-of-Course Assessments

English I, American History – November 2-3, 2009
Algebra II, Geometry, Government – November 4-5, 2009

Statewide Assessment in Missouri - A Brief History

- Missouri S.B. 380 – The Outstanding Schools Act
 - Passed in 1993
 - Required development of academic performance standards
 - Mandated statewide assessments to measure student progress toward standards
- The Missouri Assessment Program (MAP)
 - Designed to evaluate student performance relative to Show-Me Standards
 - First administration in 1996 (began with grade span Mathematics test)
 - Developed over the next decade to include assessments in multiple grades and content areas

No Child Left Behind (NCLB)

- Federal legislation passed in 2001
- By 2005-2006, states required to assess students in Mathematics and Communication Arts in all grades 3-8 and once in high school
- Science added in 2007 – States required to assess once in each grade range (elementary, middle, and high school)
- Goal is to have all students reach "Proficiency" by 2014
- States create unique definitions of "Proficiency"

Impact of NCLB on MAP

- Added grade-level assessments for grades 3-8 and 10 in Mathematics and grades 3-8 and 11 in Communication Arts in Spring 2006
- Added Science assessments for grades 5, 8, and 11 in Spring 2007
- Established achievement levels of Below Basic, Basic, Proficient, and Advanced for all MAP-assessed grade levels and content areas

Missouri End-of-Course (EOC) Assessments

- New approach to high school assessment in Missouri
- Recommended by Missouri State Board of Education and task force on high school assessment
- Designed to be administered when students complete specific course content rather than at the end of a grade level

Purposes of Missouri EOC Assessments

- According to the Missouri State Board of Education, Missouri EOC Assessments are intended to:
 - measure and reflect student mastery toward post secondary readiness
 - identify students' strengths and weaknesses
 - communicate expectations for all students to patrons and community
 - serve as the basis of state and national accountability plans
 - evaluate programs

Missouri EOC Assessment Development

- **Phase I – Algebra I, English II, Biology**
 - Implemented in 2008-2009
 - Replaced high school MAP assessments in Mathematics, Communication Arts, and Science
- **Phase II – Algebra II, Geometry, English I, American History, Government**
 - Implemented in 2009-2010

About Missouri EOC Assessments...

- Phase I EOC Assessments include both multiple choice items and performance items and are designed to be administered in two 55-minute class periods
- Phase II EOC Assessments include multiple choice items only and can be administered in one 55-minute class period.
- Flexible administration – Districts can administer during fall, spring, or summer window.
- Can contribute to course grades (local decision)
- Provide data for state and federal accountability

Achievement Level-Setting for Phase II Missouri EOC Assessments

- **What is the task?**
 - To determine what score on a Missouri EOC Assessment separates "Below Basic" from "Basic" performance, "Basic" from "Proficient" performance, and "Proficient" from "Advanced" performance
 - To define what characteristics of student performance should be demonstrated at each performance level

Achievement Level-Setting for Phase II Missouri EOC Assessments

- **Why is it important?**
 - Defining achievement levels helps us answer the question, "How good is good enough?"
 - Achievement levels provide a common measure and a common vocabulary for educators, parents, and other stakeholders to talk about student performance.
 - Achievement levels provide us with a way of looking at student performance and progress over time.

Achievement Level-Setting for Phase II Missouri EOC Assessments

- **Who is involved?**
 - Approximately 15 panelists per Missouri EOC Assessment
 - Panels include classroom teachers (at least 50 percent), non-teacher educators, representatives of postsecondary education, and other professionals
 - Panelists nominated by building and district administrators, professional educator organizations, and postsecondary education community
 - Panels selected to be geographically and demographically representative of Missouri's population

Achievement Level-Setting for Phase II Missouri EOC Assessments

- **Roles and responsibilities**
 - **Riverside Publishing Company** (Missouri's contractor for EOC Assessments) – Overseeing achievement level-setting process and providing onsite data
 - **Questar Assessment** (Riverside Publishing Company's subcontractor for achievement level setting) – Training and facilitating in large and small group sessions
 - **DESE Curriculum and Assessment staff** – Available to answer questions about test development and content, and conference logistics
 - **Regional Instructional Facilitators** – Present in each room during small group sessions to serve as content resources
 - **Panelists** – Evaluate test content and data to recommend cut scores and to revise achievement level descriptors

Achievement Level-Setting for Phase II Missouri EOC Assessments

- The Achievement Level-Setting Process
 - Modified Angoff method as recommended by Missouri's TAC
 - Training in large and small groups
 - Review of test items and content
 - Rounds of judgments of cutscores for each achievement level
 - Consideration of 2008-2009 field test data
 - Review and revision of achievement level descriptors

Achievement Level-Setting for Phase II Missouri EOC Assessments

- Results:
 - Recommended cut scores for each Phase II Missouri EOC Assessment
 - Recommended achievement level descriptors for each Phase II Missouri EOC Assessment

Final Determination of Achievement Levels for Phase II Missouri EOC Assessments

Recommended cutscores and achievement level descriptors will be presented to the Missouri State Board of Education in January, 2010.

Standard Setting Overview

Missouri End-of-Course (EOC) Assessments

November, 2009

1

Session Overview - Day 1

- I. What is "standard setting" - in general and for the EOC Assessments?
- II. Describe the performance categories; refine achievement-level descriptors.
- III. Review and discuss the actual EOC test.
- IV. The "Angoff procedure" – how it works; "Practice" and "Warm-up"
- V. Round 1 of Recommendations

2

Setting Performance Standards

- *Who's Involved?* State and contractor roles
- *Why Questar?* Who's facilitating? Our role:
Not content experts, but facilitators

3

Setting Performance Standards

- *Who's Involved?* State and contractor roles
- *Why Questar?* Who's facilitating? Our role
- *Why you?* Individually and collectively:

You are the *experts*.
You *represent* various audiences.

4

Setting Performance Standards

- *Who's Involved?* State and contractor roles
- *Why Questar?* Who's facilitating? Our role
- *Why you?* Individually and collectively:

You are the *experts*.
You *represent* various audiences.
You are *judges*, not psychometricians.

5

Setting Performance Standards

- *Who's Involved?* State and contractor roles
- *Why Questar?* Who's facilitating? Our role
- *Why you?* Individually and collectively:

You are the *experts*.
You *represent* various audiences.
You are *judges*, not psychometricians.
You are *advisors*, not policy makers.

6

Groundrules

NO DISCUSSIONS about the *EOC program or its underlying content standards*

OR

7

Groundrules

NO DISCUSSIONS about the *EOC program*
OR

- why to set standards
- the philosophy of educational assessment
- why these particular tasks/assessments
- why a particular procedure is being used

8

Groundrules

NO DISCUSSIONS about the *EOC program*
OR

- why to set standards
- the philosophy of educational assessment
- why these particular tasks/assessments
- why a particular procedure is being used

Confidentiality - all materials & discussions.

9

Groundrules

NO DISCUSSIONS about the *EOC program*
OR

- why to set standards
- the philosophy of educational assessment
- why these particular tasks/assessments
- the fairness of assessing special students
- why a particular procedure is being used

Confidentiality of all materials & discussions

All discussions should be *as a group*.

Overarching Principle to Guide our Work

First expounded by, unarguably, the world's leading philosopher and intellectual

Dave Barry

11

Overarching Principle to Guide our Work

"If you had to identify, in one word, the reason why the human race has not achieved, and never will achieve, its full potential, that word would be . . . *meetings*."

12

What IS Standard Setting?

- another frame of reference to interpret test scores
 ("How good is *good*"?)
- a routine, daily activity

15

What IS Standard Setting?

- another frame of reference to interpret test scores ("How good is *good*"?)
- a routine, daily activity
- true "criterion-referencing"

16

What IS Standard Setting?

- another frame of reference to interpret test scores ("How good is *good*"?)
- a routine, daily activity
- true "criterion-referencing"
- a *semi*-quantitative, *semi*-standardized, socio-political judgment process

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What IS Standard Setting?

- just a frame of reference for test scores
 - a routine, daily activity
 - true "criterion-referencing"
 - essentially, a judgment process
- **NOT** "science" !

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4 Keys to Being a Great Judge

1. Judgments vs. Data

17

4 Keys to Being a Great Judge

1. Judgments vs. Data

2. "Should" vs. "Will"

18

4 Keys to Being a Great Judge

1. Judgments vs. Data
2. "Should" vs. "Will"
3. Consider *ALL Missouri* students who will take this EOC assessment.

19

4 Keys to Being a Great Judge

1. Judgments vs. Data
2. "Should" vs. "Will"
3. Consider *ALL Missouri* students who took this EOC assessment
4. Think of *threshold* students, not *all* who are Proficient.

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Advice on Setting Standards

- Set demanding, but *attainable* standards.

21

Advice on Setting Standards

- Set demanding, but *attainable* standards.
- What "*should be*" probably shouldn't disregard what "*is*."

21

Advice on Setting Standards

- Set demanding, but *attainable* standards.
- What "*should be*" probably shouldn't disregard what "*is*."
- Focus on *concrete* behaviors, skills, responses.

21

Advice on Setting Standards

- Set demanding, but *attainable* standards.
- What "*should be*" probably shouldn't disregard what "*is*."
- Focus on *concrete* behaviors, skills, responses.
- Item difficulty resides in the answer choices, not the item "*stem*."

21

Who was the 7th President
of the United States?

25

Who was the 7th President
of the United States?

- A. Augie Busch
- B. Stan Musial
- C. Andrew Jackson
- D. Mark Twain
- E. George Washington Carver

26

Who was the 7th President
of the United States?

- A. Abraham Lincoln
- B. Harry Truman
- C. Andrew Jackson
- D. Nellie Tayloe Ross
- E. George Bush

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Who was the 7th President
of the United States?

- A. Martin VanBuren
- B. John Quincy Adams
- C. Andrew Jackson
- D. James Monroe
- E. John F. Kennedy

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Advice on Setting Standards

- Set demanding, but *attainable* standards.
- What “*should be*” shouldn’t disregard what “*is*.”
- Focus on the *concrete*.
- Remember to review the options for all items.

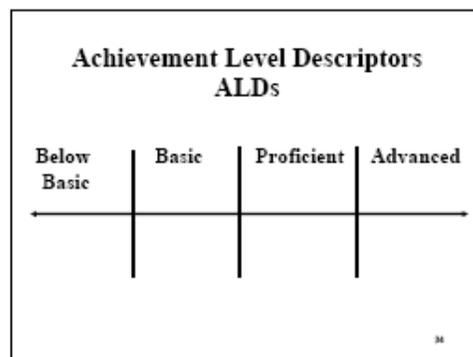
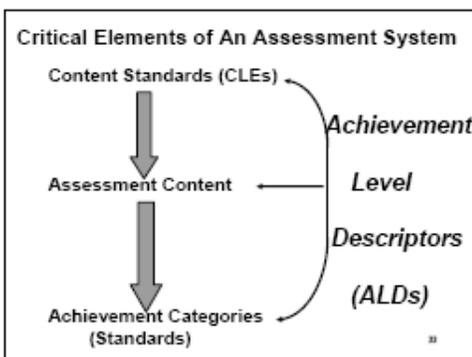
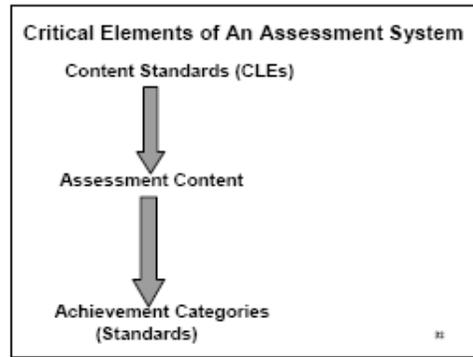
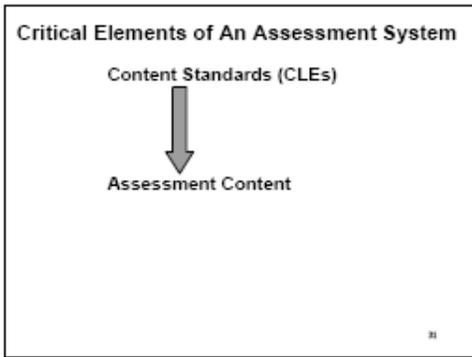
Use your best judgment !!

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Critical Elements of An Assessment System

**Content Standards =
Course-Level Expectations
(CLEs)**

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Achievement Level Descriptors ALDs

Written *draft* statements describing in content-specific terms the level of knowledge and skills required at each performance/achievement category – *Below Basic, Basic Proficient, Advanced*



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Achievement Level Descriptors ALDs

Anchors for your decisions consisting of:

- Labels, i.e., BB, B, P, A
- Introductory paragraphs - general descriptions of Achievement Levels
- Lists of specific behaviors - what students should know and be able to do



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**Achievement Level Descriptors
ALDs**

Why are they important?
Standard-setting ANCHORS for classifying student performance and determining cut scores.
Reporting tools to help students, teachers, parents *interpret* what learners know and can do, and what they do not know and cannot do.



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**Achievement Level Descriptors
ALDs**

- Are derived from the Course Level Expectations CLEs.
- Are based on *assessable* CLEs.
- Describe in general terms behaviors assessed specifically on the EOC assessments.

Not everything that can be counted counts, and not everything that counts can be counted.
 Albert Einstein

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**Achievement Level Descriptors
ALDs – Your Task**

Determine what these *general* ALDs mean **concretely** for students taking each EOC assessment.

How??

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**Achievement Level Descriptors
ALDs – Your Task**

- Beginning with the *Proficient* category, describe the assessed students *concretely*.
- What do they know? What can they do?
- What skills do they possess in order to demonstrate this behavior?
- What does the skill look like?
- What are examples?
- What behaviors/actions “fit” a certain category?

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ALDs – Your Task

Advanced

- Demonstrate thorough understanding
- Demonstrate higher-level skills
- Use wide range of strategies to understand
- Consistently apply

Proficient

- Demonstrate understanding of skills and processes
- Use a range of strategies to understand and apply

Basic

- Demonstrate incomplete or partial understanding
- Demonstrate skills inconsistently
- Use some strategies

Below Basic

- Demonstrate little understanding
- Demonstrate skills inconsistently or incorrectly
- Use few strategies

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**Achievement Level Descriptors
ALDs – Your Task**

- Action verbs - e.g., determine, evaluate, analyze, identify, compare, describe, explain
- Qualifiers - adjectives and adverbs that describe:
 - Differences in amount (most, various, few, both, limited)
 - Degree of
 - understanding (complex, clear, relevant, little, incomplete)
 - frequency (consistently, inconsistently, rarely)
 - effectiveness (highly, moderately, somewhat, thorough)

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**Achievement Level Descriptors
ALDs – Your Task**

QUALITY & CLARITY

- High-quality, clear *anchors* for setting achievement standards
- High-quality, clear *targets* to assist teachers in
 - designing instruction and assessment
 - supporting acquisition of pre-requisite knowledge and skills
 - providing “on-target” intervention and practice
 - evaluating and grading

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APPENDIX H:

DRAFT ALDS WITH PANEL EDITS MARKED

Missouri End-of-Course Assessment Achievement Level Descriptors English I

Achievement Levels

Advanced: Students performing at the Advanced level on the Missouri English I End-of-Course Assessment consistently demonstrate a thorough understanding of the skills and processes identified in the Course Level Reading Expectations for English I. They demonstrate higher-level skills in reading processes and in responding to both fiction and nonfiction texts. In addition to understanding and applying the skills at the Proficient level, students scoring at the Advanced level use a range of strategies to comprehend and interpret a variety of texts, demonstrate a thorough understanding of literary forms, and consistently apply different strategies for accessing and summarizing information.

Proficient: Students performing at the Proficient level on the Missouri English I End-of-Course Assessment demonstrate an understanding of the skills and processes identified in the Course Level Reading Expectations for English I. They demonstrate these skills in reading processes and in responding to both fiction and nonfiction texts. In addition to understanding and applying the skills at the Basic level, students scoring at the Proficient level use a range of strategies to comprehend and interpret a variety of texts, demonstrate an understanding of literary forms, and apply strategies for accessing and summarizing information.

Basic: Students performing at the Basic level on the Missouri English I End-of-Course Assessment demonstrate an incomplete understanding of the skills and processes identified in the Course Level Reading Expectations for English I. They demonstrate these skills inconsistently in reading processes and in responding to both fiction and nonfiction texts. In addition to understanding and applying the skills at the Below Basic level, students scoring at the Basic level use some strategies to comprehend and interpret a variety of texts, demonstrate a partial understanding of literary forms, and inconsistently apply few strategies for accessing and summarizing information.

Below Basic: Students performing at the Below Basic level on the Missouri English I End-of-Course Assessment demonstrate little understanding of the skills and processes identified in the Course Level Reading Expectations for English I. They demonstrate these skills inconsistently and/or incorrectly in reading processes and in responding to both fiction and nonfiction texts. Students scoring at the Below Basic level use few strategies to comprehend and interpret texts, demonstrate little understanding of literary forms, and apply few strategies for accessing information.

Achievement Descriptors

Advanced

Reading—In both fiction and nonfiction, a student can

- ✓ Determine vocabulary meaning
- ✓ Analyze the main idea and evaluate supporting details
- ✓ Make connections—compare, contrast, evaluate
- ✓ Evaluate text features
- ✓ Analyze and evaluate figurative language and literary techniques
- ✓ Draw insightful conclusions ~~to evaluate text~~
- ✓ Summarize and paraphrase complex ideas and information
- ✓ Evaluate literary elements
- ✓ Evaluate proposed solutions
- ✓ Evaluate accuracy and adequacy of evidence
- ✓ Analyze organizational patterns
- ✓ Evaluate the author's point of view, viewpoint/perspective, and purpose
- ✓ Evaluate the author's style and word choice

Proficient

Reading—In both fiction and nonfiction, a student can

- ✓ Determine vocabulary meaning
- ✓ Identify the main idea and supporting details
- ✓ Make connections—compare, contrast, analyze
- ✓ Analyze text features
- ✓ Analyze figurative language and literary techniques
- ✓ Draw accurate conclusions
- ✓ Summarize and paraphrase ideas and information
- ✓ Analyze literary elements
- ✓ Analyze proposed solutions
- ✓ Analyze accuracy and adequacy of evidence
- ✓ ~~Analyze~~ Explain organizational patterns

- ✓ Analyze the author's point of view, viewpoint/perspective, and purpose
- ✓ Analyze the author's style and word choice

Basic

Reading—In fiction and nonfiction, a student can

- ✓ Determine vocabulary meaning
- ✓ Identify the main idea and major details
- ✓ Make simple connections—compare, contrast
- ✓ Identify text features
- ✓ Identify figurative language and literary techniques
- ✓ Draw conclusions
- ✓ Summarize and paraphrase basic ideas and information
- ✓ Identify basic literary elements
- ✓ Identify proposed solutions
- ✓ Determine reliability of evidence
- ✓ Identify organizational patterns
- ✓ Identify author's point of view and purpose
- ✓ Identify the author's style and word choice

Below Basic

Reading—In fiction and nonfiction, a student can

- ✓ Determine vocabulary meaning
- ✓ Identify the main idea and some details
- ✓ Make simple connections
- ✓ Identify simple text features
- ✓ Identify figurative language
- ✓ Identify characters, plot, and setting
- ✓ Identify point of view
- ✓ Determine literal meaning

Missouri End-of-Course Assessment Achievement Level Descriptors Algebra II

Achievement Levels

Advanced: Students performing at the Advanced level on the Missouri Algebra II End-of-Course Assessment demonstrate a thorough understanding of the course-level expectations for Algebra II. They demonstrate these skills in numbers and operations, algebraic relationships, and data and probability. In addition to understanding and applying the skills at the Proficient level, students scoring at the Advanced level use a wide range of strategies to solve problems and demonstrate a thorough understanding of important mathematical content and concepts.

Proficient: Students performing at the Proficient level on the Missouri Algebra II End-of-Course Assessment demonstrate an understanding of most of the course-level expectations for Algebra II. They demonstrate these skills in numbers and operations, algebraic relationships, and data and probability. In addition to understanding and applying the skills at the Basic level, students scoring at the Proficient level use a range of strategies to solve problems and demonstrate an understanding of important mathematical content and concepts.

Basic: Students performing at the Basic level on the Missouri Algebra II End-of-Course Assessment demonstrate some understanding of the course-level expectations for Algebra II. They demonstrate these skills in numbers and operations, algebraic relationships, and data and probability. In addition to understanding and applying the skills at the Below Basic level, students scoring at the Basic level use some strategies to solve problems and demonstrate some understanding of important mathematical content and concepts.

Below Basic: Students performing at the Below Basic level on the Missouri Algebra II End-of-Course Assessment demonstrate a limited understanding of the course-level expectations for Algebra II. They demonstrate these skills in numbers and operations, algebraic relationships, and data and probability. In addition to demonstrating these skills, students scoring at the Below Basic level use very few strategies to solve problems and demonstrate a limited understanding of important mathematical content and concepts.

Achievement Descriptors

Advanced

Algebraic Relationships—Using algebraic relationships, a student can

- ✓ Describe the effect of parameter changes on logarithmic and rational functions
- ✓ Compare and contrast properties of rational functions
- ✓ Use symbolic algebra to represent and solve problems that involve logarithmic relationships
- ✓ Describe and use algebraic manipulations, inverse, or composition of functions
- ~~✓ Compare and contrast properties of rational functions~~
- ✓ Use and solve equivalent forms of logarithmic, radical, and rational equations
- ✓ Use and solve systems of quadratic equations or inequalities with 2 variables
- ✓ Identify quantitative relationships and determine type(s) of functions that might model the situation to solve a problem, including logarithmic and rational functions
- ✓ Analyze logarithmic functions by investigating intercepts, domain and range, and asymptotes

Data and Probability—Using data and probability, a student can

- ~~✓ Given one-variable quantitative data, describe its shape and calculate summary statistics~~
- ✓ Describe the concept of probability distribution
- ✓ Compute the probability of compound events

Proficient

Algebraic Relationships—Using algebraic relationships, a student can

- ✓ Compare and contrast various forms of representations of patterns
- ✓ Describe the effect of parameter changes on quadratic, cubic, absolute value, and square root functions
- ✓ Compare and contrast the properties of exponential and logarithmic functions
- ✓ Use symbolic algebra to represent and solve problems that involve exponential or quadratic relationships

- ✓ Describe and use algebraic manipulations, including factoring or imaginary numbers, to simplify expressions
- ✓ Use and solve equivalent forms of quadratic and exponential equations
- ✓ Use and solve systems of linear inequalities with two variables
- ✓ Identify quantitative relationships and determine type(s) of functions that might model the situation to solve a problem, including quadratic and exponential growth/decay
- ✓ Analyze exponential functions by investigating rates of change, intercepts, domain and range, and asymptotes
- ~~✓ Identify quantitative relationships that can be modeled by exponential or quadratic functions to solve a problem~~

Data and Probability—Using data and probability, a student can

- ✓ Given a scatterplot, determine a type of function that models the data
- ✓ Given one-variable quantitative data, calculate summary statistics
- ✓ Use and describe the concepts of conditional probability
- ~~✓ Given one-variable quantitative data, display the distribution and describe its shape~~
- ~~✓ Describe the concept of probability distribution~~
- ~~✓ Compute the probability of compound events~~

Basic

Numbers and Operations—Using numbers and operations, a student can

- ✓ Compare and order irrational numbers, including finding their approximate location on a number line
- ✓ Use real numbers and various models, drawings, etc. to solve problems

Algebraic Relationships—Using algebraic relationships, a student can

- ✓ Generalize patterns using explicitly or recursively defined linear or exponential functions
- ✓ Describe the effect of parameter changes on exponential functions
- ✓ Compare and contrast the properties of linear and exponential functions

- ~~✓ Describe the effect of parameter changes on exponential functions~~
- ~~✓ Describe and use algebraic manipulations, including rules of exponents, to simplify expressions~~
- ✓ Use symbolic algebra to represent and solve problems that involve linear relationships
- ✓ Describe and use algebraic manipulations, including rules of exponents, to simplify expressions
- ✓ Use and solve equivalent forms of absolute value and linear equations
- ✓ Use and solve systems of linear equations with two variables
- ✓ Identify quantitative relationships that can be modeled by linear functions to solve a problem

Data and Probability—Using data and probability, a student can

- ✓ Given a scatterplot, determine an equation for a line of best fit
- ✓ Given one-variable quantitative data, display the distribution and describe its shape
- ✓ Apply statistical measures of center to solve problems
- ~~✓ Given a scatterplot, determine an equation for a line of best fit~~
- ~~✓ Use and describe the concepts of conditional probability~~

Below Basic

Numbers and Operations—Using numbers and operations, a student can

- ✓ Compare and order rational numbers, including finding approximate locations on a number line

Algebraic Relationships—Using algebraic relationships, a student can

- ✓ Generalize patterns using explicitly or recursively defined single operation functions
- ✓ Describe the effects of parameter changes on linear functions
- ✓ Compare the properties of linear functions
- ✓ Describe and use algebraic manipulations, including order of operations, to simplify expressions

- ✓ Use and solve equivalent forms of linear equations

Data and Probability—Using data and probability, a student can

- ✓ Use appropriate graphical representations of data
- ✓ Describe the concept of sample space
- ✓ Determine the probability of two independent events

Missouri End-of-Course Assessment Achievement Level Descriptors Geometry

Achievement Levels

Advanced: Students performing at the Advanced level on the Missouri Geometry End-of-Course Assessment demonstrate a thorough understanding of the course-level expectations for Geometry. They demonstrate these skills in algebraic relationships, geometric and spatial relationships, and measurement. In addition to understanding and applying the skills at the Proficient level, students scoring at the Advanced level use a wide range of strategies to solve problems and demonstrate a thorough understanding of important mathematical content and concepts.

Proficient: Students performing at the Proficient level on the Missouri Geometry End-of-Course Assessment demonstrate an understanding of most of the course-level expectations for Geometry. They demonstrate these skills in algebraic relationships, geometric and spatial relationships, and measurement. In addition to understanding and applying the skills at the Basic level, students scoring at the Proficient level use a range of strategies to solve problems and demonstrate an understanding of important mathematical content and concepts.

Basic: Students performing at the Basic level on the Missouri Geometry End-of-Course Assessment demonstrate some understanding of the course-level expectations for Geometry. They demonstrate these skills in algebraic relationships, geometric and spatial relationships, and measurement. In addition to understanding and applying the skills at the Below Basic level, students scoring at the Basic level use some strategies to solve problems and demonstrate some understanding of important mathematical content and concepts.

Below Basic: Students performing at the Below Basic level on the Missouri Geometry End-of-Course Assessment demonstrate a limited understanding of the course-level expectations for Geometry. They demonstrate these skills in algebraic relationships, geometric and spatial relationships, and measurement. In addition to demonstrating these skills, students scoring at the Below Basic level use very few strategies to solve problems and demonstrate a limited understanding of important mathematical content and concepts.

Achievement Descriptors

Advanced

Algebraic Relationships—Using algebraic relationships, a student can

- ✓ Compare and contrast various forms of representations of patterns (exponential)

Geometric and Spatial Relationships—Using geometric and spatial relationships, a student can

- ✓ Use inductive and deductive reasoning to prove theorems and critique arguments made by others
- ✓ Make conjectures involving 2-dimensional objects represented with Cartesian coordinates
- ✓ Apply constructions and the coordinate plane to represent translations, reflections, rotations, and dilations of objects
- ~~✓ Identify types of symmetries of 3-dimensional figures~~
- ✓ Draw vertex-edge graphs or networks to find optimal solutions
- ✓ Draw representations of 3-dimensional geometric objects from different perspectives

Measurement—Using measurement relationships, a student can

- ✓ Solve problems of angle measure involving polygons

Proficient

Algebraic Relationships—Using algebraic relationships, a student can

- ✓ Identify quantitative relationships and determine the type(s) of function that might model the situation to solve the problem (exponential)
- ✓ Analyze linear functions by investigating rates of change and intercepts
- ✓ Apply appropriate properties of exponents to solve equations
- ✓ Compare and contrast various forms of representations of patterns (quadratic)

Geometric and Spatial Relationships—Using geometric and spatial relationships, a student can

- ✓ Use inductive and deductive reasoning to establish the validity of geometric conjectures
- ✓ Solve problems involving 2-dimensional objects represented with Cartesian

coordinates

- ✓ Use constructions and the coordinate plane to represent translations, reflections, rotations, and dilations of objects
- ✓ Identify types of symmetries of 3-dimensional figures
- ✓ Use vertex-edge graphs or networks to find optimal solutions

Measurement—Using measurement relationships, a student can

- ✓ Solve problems of angle measure involving parallel lines cut by a transversal
- ✓ Determine the surface area of geometric figures, including cylinders, cones, and spheres

Basic

Algebraic Relationships—Using algebraic relationships, a student can

- ✓ Generalize patterns using explicitly or recursively defined functions
- ✓ Apply appropriate properties of exponents to simplify expressions
- ✓ Identify quantitative relationships and determine the type(s) of function that might model the situation to solve the problem (absolute value and quadratic)
- ✓ Compare and contrast various forms of representations of patterns (linear)

Geometric and Spatial Relationships—Using geometric and spatial relationships, a student can

- ✓ Identify types of symmetries of 2-dimensional figures (rotational)

Measurement—Using measurement relationships, a student can

- ✓ Solve problems of angle measure involving triangles
- ✓ Determine the volume of geometric figures, including cylinders, cones, and spheres

Below Basic

Algebraic Relationships—Using algebraic relationships, a student can

- ✓ Identify quantitative relationships and determine the type(s) of function that might model the situation to solve the problem (linear)

✓ **Geometric and Spatial Relationships**—Using geometric and spatial relationships, a student can

✓ Identify types of symmetries of 2-dimensional figures (line)

Measurement—Using measurement relationships, a student can

✓ Determine the volume of geometric figures (prism and pyramids)

Missouri End-of-Course Assessment Achievement Level Descriptors Government

Achievement Levels

Advanced: Students performing at the Advanced level on the Missouri End-of-Course Assessment demonstrate a thorough understanding of the course-level expectations for Government. They demonstrate these skills in addition to understanding and applying the skills at the Proficient level. Students scoring at the Advanced level use a wide range of strategies to understand and apply the concepts of government.

Proficient: Students performing at the Proficient level on the Missouri End-of-Course Assessment demonstrate an understanding of the course-level expectations for Government. They demonstrate these skills in addition to understanding and applying the skills at the Basic level. Students scoring at the Proficient level use a range of strategies to understand and apply the concepts of government.

Basic: Students performing at the Basic level on the Missouri End-of-Course Assessment demonstrate a partial understanding of the course-level expectations for Government. They demonstrate these skills in addition to understanding and applying the skills at the Below Basic level. Students scoring at the Basic level use some strategies to understand and apply the concepts of government.

Below Basic: Students performing at the Below Basic level on the Missouri End-of-Course Assessment demonstrate a limited understanding of the course-level expectations for Government. In addition to demonstrating these skills, students scoring at the Below Basic level use few strategies and demonstrate a limited understanding of important government content and concepts.

Achievement Descriptors

Advanced

Knowledge of the principles expressed in documents shaping constitutional democracy in the United States—A student can

- ✓ Apply the principles of constitutional democracy to complex historical and contemporary issues
- ✓ Thoroughly assess the changing roles of government
- ✓ Describe the historical foundations of the United States governmental system by citing the influence of different documents and writings
- ✓ Determine the civic responsibilities of individual citizens
- ✓ Identify and give clear examples of democracies and republics
- ✓ Explain the relevance of constitutional principles and make complex connections to different ~~foundational~~ historical documents and court cases

Knowledge of principles and processes of governance systems—A student can

- ✓ Describe in detail the structure of federal and state levels of government and the purposes of ~~both federal and state~~ laws
- ✓ Thoroughly explain the importance of government principles
- ✓ Evaluate the roles and influence of political parties and interest groups
- ✓ Thoroughly explain ~~Explain various~~ processes pertaining to ~~different~~ governmental systems

Proficient

Knowledge of the principles expressed in documents shaping constitutional democracy in the United States—A student can

- ✓ Apply the principles of constitutional democracy to historical and contemporary issues
- ✓ Assess the changing roles of government
- ✓ Describe the historical foundations of the United States governmental system
- ✓ Determine the civic responsibilities of individual citizens
- ✓ Identify and give examples of democracies and republics
- ✓ Explain the relevance and connection of constitutional principles in different historical documents and court cases

Knowledge of principles and processes of governance systems—A student can

- ✓ Describe the structure of federal and state levels of government and the purposes of laws
- ✓ Explain the importance of government principles
- ✓ Evaluate the roles and influence of political parties and interest groups
- ✓ Explain the processes pertaining to governmental systems

Basic

Knowledge of the principles expressed in documents shaping constitutional democracy in the United States—A student can

- ✓ Describe the principles of constitutional democracy
- ✓ Explain the changing roles of government
- ✓ ~~Explain~~ Identify the historical foundations of the United States governmental system
- ✓ Describe the civic responsibilities of individual citizens
- ✓ Identify democracies and republics
- ✓ Describe the relevance of different historical documents

Knowledge of principles and processes of governance systems—A student can

- ✓ Identify the structure of government and the purposes of laws
- ✓ Define different government principles
- ✓ Identify the roles and influence of political parties and interest groups
- ✓ Recognize the processes pertaining to governance systems

Below Basic

Knowledge of the principles expressed in documents shaping constitutional democracy in the United States—A student can

- ✓ Identify the principles of constitutional democracy
- ✓ Recognize the changing roles of government
- ✓ Recognize the historical foundations of the United States governmental system
- ✓ Identify the civic responsibilities of individual citizens
- ✓ Inconsistently identifies democracies and republics
- ✓ Identify different relevant historical documents

Knowledge of principles and processes of governance systems—A student can

- ✓ Inconsistently identifies the structure of government and the purposes of laws
- ✓ Inconsistently defines different government principles
- ✓ Identify the roles and influence of political parties and interest groups
- ✓ Recognize the processes pertaining to governance systems

Missouri End-of-Course Assessment Achievement Level Descriptors American History

Achievement Levels

Advanced: Students performing at the Advanced level on the Missouri End-of-Course Assessment demonstrate a thorough understanding of the course-level expectations for American History. They demonstrate these skills in addition to understanding and applying the skills at the Proficient level. Students scoring at the Advanced level effectively and consistently demonstrate an understanding and apply concepts in American history.

Proficient: Students performing at the Proficient level on the Missouri End-of-Course Assessment demonstrate an understanding of the course-level expectations for American History. They demonstrate these skills in addition to understanding and applying the skills at the Basic level. Students scoring at the Proficient level demonstrate understanding and apply concepts in American history.

Basic: Students performing at the Basic level on the Missouri End-of-Course Assessment demonstrate a partial understanding of the course-level expectations for American History. They demonstrate these skills in addition to understanding and applying the skills at the Below Basic level. Students scoring at the Basic level use some strategies to demonstrate partial understanding and apply concepts in American history.

Below Basic: Students performing at the Below Basic level on the Missouri End-of-Course Assessment demonstrate a limited understanding of the course-level expectations for American History. In addition to demonstrating these skills, students scoring at the Below Basic level use few strategies and demonstrate a limited understanding of important content and concepts in American History.

Achievement Descriptors

Advanced

Knowledge of continuity and change in the history of Missouri and the United States—A student can

- ✓ Describe various motivations and challenges for people migrating from many regions of the world and the interactions of cultures and religious traditions that have contributed to America's history from Reconstruction to the present
- ✓ Analyze the evolution of American democracy by recognizing events and movements that expanded the role of the government, civic participation, and civil rights from Reconstruction to the present
- ✓ Apply various major economic concepts in the context of the historical period studied
- ✓ Thoroughly explain the importance of various government principles within the context of United States history from Reconstruction to the present
- ✓ Analyze the various roles and influence of political parties and interest groups from Reconstruction to the present
- ✓ Describe the historical development of various aspects of the American economy
- ✓ Thoroughly analyze the interplay of people, business, labor unions, and government with respect to regulation and to fiscal and monetary policy in the United States economy
- ✓ ~~Effectively survey~~ Explain the functions and effects of major economic institutions of the United States economy
- ✓ Identify the ~~various~~ roles of the government in the United States economy
- ✓ Distinguish ~~major~~ patterns and issues with regard to population distribution, demographics, settlements, migrations, and cultures in the United States

- ✓ Identify and ~~thoroughly~~ explain criteria that give regions their identities in different periods of United States history; connect ideas about how and why regions change
- ✓ Describe and evaluate the evolution of United States domestic and foreign policies from Reconstruction to the present by citing specific policy-shaping events

Knowledge of continuity and change in the history of the world—A student can

- ✓ ~~Effectively analyze~~ Analyze various aspects of twentieth-century wars pertinent to United States history

Proficient

Knowledge of continuity and change in the history of Missouri and the United States—A student can

- ✓ Describe the migrations of people from many regions of the world and the interactions of cultures and religious traditions that have contributed to America's history from Reconstruction to the present
- ✓ Analyze the evolution of American democracy—its ideas, institutions, and political processes from Reconstruction to the present
- ✓ ~~Apply~~ Explain major economic concepts in the context of the historical period studied
- ✓ Explain the importance of government principles within the context of United States history from Reconstruction to the present
- ✓ Analyze the significance of the roles and influence of political parties and interest groups from Reconstruction to the present
- ✓ Describe significant aspects of the historical development of the American economy
- ✓ Analyze the roles people, business, labor unions, and government play in the United States economy
- ✓ ~~Draw conclusions about~~ Survey the functions and effects of major economic institutions of the United States economy.
- ✓ Identify ~~the~~ significant roles of government in the United States economy
- ✓ Distinguish major patterns and issues with regard to population distribution, demographics, settlements, migrations, and cultures in the United States

- ✓ List ~~and explain~~ criteria that give regions their identities in different periods of United States history; explain how and why regions change
- ✓ ~~Analyze the evolution~~ Describe the changes of United States domestic and foreign policies from Reconstruction to the present

Knowledge of continuity and change in the history of the world—A student can

- ✓ ~~Analyze~~ Demonstrate an understanding of the causes and impacts of the wars in the twentieth-century that are pertinent to United States history

Basic

Knowledge of continuity and change in the history of Missouri and the United States—A student can

- ✓ Identify the migrations of people from many regions of the world that have contributed to America's history from Reconstruction to the present
- ✓ Explain the evolution of American democracy—its ideas, institutions, and political processes from Reconstruction to the present
- ✓ Describe major economic concepts in the context of the historical period studied
- ✓ Describe the importance of government principles within the context of United States history from Reconstruction to the present
- ✓ Explain the roles and influence of political parties and interest groups from Reconstruction to the present
- ✓ Explain the roles people, business, labor unions, and government play in the United States economy
- ✓ Identify the functions and effects of major economic institutions of the United States economy
- ✓ Describe major patterns and issues with regard to population distribution, demographics, settlements, migrations, and cultures in the United States
- ✓ Identify criteria that give regions their identities in different periods of United States history; describe how and why regions change
- ✓ ~~Describe the evolution of~~ United States domestic and foreign policies from Reconstruction to the present

Knowledge of continuity and change in the history of the world—A student can

- ✓ Describe the wars of the twentieth-century pertinent to United States history

Below Basic

Knowledge of continuity and change in the history of Missouri and the United States—A student can

- ✓ Describe the evolution of American democracy—its ideas, institutions, and political processes from Reconstruction to the present
- ✓ Identify major economic concepts
- ✓ Identify government principles
- ✓ Describe the roles and influence of political parties and interest groups from Reconstruction to the present
- ✓ Describe the roles people, business, labor unions, and government play in the United States economy
- ✓ Identify major patterns and issues with regard to population distribution, demographics, settlements, migrations, and cultures in the United States
- ✓ Identify United States domestic and foreign policies from Reconstruction to the present

Knowledge of continuity and change in the history of the world—A student can

- ✓ Identify the wars of the twentieth-century pertinent to United States history

APPENDIX I:
QUALIFYING TEST

Pre-Standard Setting Self-Evaluation Assessment for Judges of the Missouri EOC Assessments

1. Why are Achievement Level Descriptors such an integral part of the standard-setting process?
 - A. They provide an anchor, giving concrete meaning to the terms Basic, Proficient, and Advanced.
 - B. They describe critical knowledge and skills that all students at a given performance level should possess.
 - C. They define all of the items that are contained on the EOC.
 - D. They summarize elements of the Course-Level Expectations for the course.

2. Which of these statements about standard setting is TRUE?
 - A. Panelists should use their best judgment to make their recommendations, but should rely *more* on various empirical data to be provided during the sessions.
 - B. While the EOC assessments are given statewide, judges should make recommendations based on the unique characteristics of *their* districts since other panelists will focus on other district types.
 - C. A judge who concludes that the “proper” cut score for Proficient is 24 should make a final recommendation of 22 or 23 to account for errors that are present in any assessment.
 - D. Judges must consider both the “stem” *and* answer options in selected-response items in deciding what percent of students should answer correctly.

3. Joe the Judge decided that about 50% of the typical Proficient students in Missouri taking the EOC assessment should answer Item 32 correctly. He coded 50% under Proficient on his Rating Form. What error did he make?
 - A. He should have coded 45% since some percent of special-needs students will take the assessment.
 - B. He should have considered *barely* Proficient, not *typical* Proficient, students.
 - C. He should reconsider his judgment, as 50% correct couldn’t possibly be considered Proficient.
 - D. He made no error here. This was the correct procedure.

4. Judge Jan thought that a particular item on her EOC assessment was clear, and that it measured content that was very important. She also thought that students should answer this correctly if they were Proficient performers. Which of these percents should she most likely enter for Proficient on her Rating Form?

- A. 90%—because almost all students whose course achievement is Proficient should answer correctly
- B. 65%—because this is the approximate percent that corresponds to “pass” in the school’s grading system
- C. 50%—because many students taking this test will be learning-disabled or disadvantaged or won’t take the assessment seriously
- D. 35%—because large proportions of students taking this test aren’t receiving instruction following the state’s content standards

5. Which of these sets of “Angoff” judgments for a selected-response (SR) item appears to be *improper* and why?

	Cut Score		
	Below Basic/ Basic	Basic/ Proficient	Proficient/ Advanced
A.	25%	35%	40%
B.	80%	90%	100%
C.	50%	50%	55%
D.	40%	75%	95%

- A. A, because these are unrealistically low expectations for a SR item.
- B. B, because it is unreasonable to expect students to score this well on a SR item.
- C. C, because the judge doesn’t expect higher-achieving students to perform any better on the item than lower-achieving students.
- D. D, because the increase in percents across the three groups is unrealistically large.

APPENDIX J:
MID-PROCESS EVALUATION

MISSOURI EOC STANDARD SETTING

November 2–5, 2009

Mid-Process Evaluation

I understand the background information related to the standard-setting procedures and I am ready to begin.

_____ YES

_____ NO

If no, use the space below to identify the issues or procedures you would like the facilitator to review before the formal standard setting begins.

APPENDIX K:
EXAMPLE RATING SHEET

**Missouri End of Course
Standard Setting 2009
Rating Form**

ID #

--	--	--	--	--

1	1	1	1	1
2	2	2	2	2
3	3	3	3	3

English I

Round

1	2
---	---

Item	Perf Level	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
1	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		
2	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		
3	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		
4	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		
5	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		
6	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		
7	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		
8	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		
9	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		
10	Basic	<input type="radio"/>																		
	Proficient	<input type="radio"/>																		
	Advanced	<input type="radio"/>																		

**Missouri End of Course Standard Setting 2009
Rating Form**

		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
11	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
12	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
13	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
14	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
15	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
16	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
29	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
30	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
31	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
32	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		

Missouri End of Course Standard Setting 2009
Rating Form

		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
33	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
34	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
35	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
36	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
37	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
38	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
39	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
40	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
41	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
42	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		

**Missouri End of Course Standard Setting 2009
Rating Form**

		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
43	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
44	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
45	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
46	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
47	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
48	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
49	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
50	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
51	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		
52	<input type="checkbox"/> Basic	<input type="radio"/>																		
	<input type="checkbox"/> Proficient	<input type="radio"/>																		
	<input type="checkbox"/> Advanced	<input type="radio"/>																		

APPENDIX L:
PARTICIPANT EVALUATION FORM

MISSOURI EOC STANDARD SETTING

November 2–5, 2009

Participant Evaluation Form

This form contains six sections, five of which ask for feedback on specific aspects of this standard-setting session. The last section asks for general reactions to the standard-setting session. Please fill out each of these sections as completely as possible in order to provide information that will help in the improvement of similar sessions in the future. Your identification number is used for analysis purposes only. Your responses to these questions will be held in strict confidence and will be analyzed in conjunction with those of the other judges who participated in this meeting.

Panelist I.D. (optional) _____

Section I: Opening Training Sessions

The following statements seek your judgments about the Opening Sessions for the Missouri End-of-Course standard-setting meeting. Please circle one value on the scale under each statement that best characterizes your judgment.

1. The Opening Session provided adequate background information about the Missouri End-of-Course Assessments.

5	4	3	2	1
Completely		Somewhat		Not at all

2. The topics covered in the Opening Session were appropriate to providing a context for my role in this meeting.

5	4	3	2	1
Completely		Somewhat		Not at all

3. The content of the Opening Sessions was:

5	4	3	2	1
Very useful		Somewhat useful		Not useful

4. The organization of the Opening Sessions was:

5	4	3	2	1
Very good		Acceptable		Very poor

The following statements seek your judgments about the Opening Session for the Missouri End-of-Course standard-setting session. Please write your responses to each prompt on the lines provided.

5. Did you have questions or concerns that were not answered or addressed in the Opening Session? Please indicate these below. (Use the reverse side for additional space.)

6. What was most helpful about the Opening Session?

7. Please use the space below to provide additional comments concerning the adequacy, appropriateness, usefulness, or organization of the Opening Session.

Section II: Discussing *Proficient* Performance

The following statements seek your judgments about the discussions of *Proficient* performance as they relate to Missouri’s End-of-Course Assessments. Please circle the value on the scale under each statement that best characterizes your judgment.

8. The activities used to help operationalize *Proficient* performance were:

5	4	3	2	1
Very useful		Somewhat useful		Not useful

9. By the end of the activity, my conception of *Proficient* performance was:

5	4	3	2	1
Very well formed		Moderately Well Formed		Not Well Formed

10. Please use the space below to provide additional comments concerning the activities around operationalizing *Proficient* performance for Missouri’s End-of-Course Assessments.

Section III: Discussing *Basic* Performance

The following statements seek your judgments about the discussions of *Basic* performance as they relate to Missouri’s End-of-Course Assessments. Please circle the value on the scale under each statement that best represents your judgment.

11. The activities used to help operationalize *Basic* performance were:

5	4	3	2	1
Very useful		Somewhat useful		Not useful

12. By the end of this activity my conception of *Basic* performance was:

5	4	3	2	1
Very well formed		Moderately Well Formed		Not Well Formed

13. Please use the space below to provide additional comments concerning the activities around operationalizing *Basic* performance for Missouri’s End-of-Course assessments.

Section IV: Discussing *Advanced* Performance

The following statements seek your judgments about the discussions of *Advanced* performance as they relate to Missouri’s End-of-Course assessments. Please circle the value on the scale under each statement that best represents your judgment.

14. The activities used to help operationalize *Advanced* performance were:

5	4	3	2	1
Very useful		Somewhat useful		Not useful

15. By the end of this activity my conception of *Advanced* performance was:

5	4	3	2	1
Very well formed		Moderately Well Formed		Not Well Formed

16. Please use the space below to provide additional comments concerning the activities around operationalizing *Advanced* performance for Missouri’s End-of-Course assessments.

Section V: Item Rating Activities

The following statements seek your judgments about the item rating activities as they relate to the Missouri End-of-Course standard-setting meeting. Please circle the value on the scale under each statement that best represents your judgment.

17. Using the sample items to prepare for the actual item rating was:

5	4	3	2	1
Very helpful		Somewhat helpful		Not helpful

18. The explanation of the item data during the sample item portion of the training was:

5	4	3	2	1
Very helpful		Somewhat helpful		Not helpful

19. The Item Rating Form was:

5	4	3	2	1
Very easy to use		Somewhat easy to use		Not at all easy to use

20. The information provided prior to each round of rating was:

5	4	3	2	1
Very useful		Somewhat useful		Not useful

21. My level of understanding of the tasks I was to accomplish for each round was:

5	4	3	2	1
Very good		Acceptable		Very poor

22. The amount of time I had to complete the tasks during each round was:

5	4	3	2	1
Far too long		About right		Far too short

23. Please use the space below to provide additional comments concerning the instructions and explanations you received, the adequacy of the time available, your levels of understanding of the process, or any other aspects of the item rating activities. (Use reverse side for additional space.)

Section VI: The Overall Missouri End-of-Course Standard-Setting Session

The following statements seek your judgments about the overall processes and procedures used during the Missouri End-of-Course standard-setting session in which you participated as a panelist. Please circle the value on the scale under each statement that best represents your judgment.

24. I feel that this standard-setting session provided me an opportunity to use my best judgment in selecting and revising estimates for a recommended standard of *Proficient* performance.

5	4	3	2	1
To a great extent		To some extent		Not at all

25. I feel that this standard-setting meeting provided me an opportunity to use my best judgment in selecting and revising estimates for a recommended standard of *Basic* performance.

5	4	3	2	1
To a great extent		To some extent		Not at all

26. I feel that this standard-setting meeting provided me an opportunity to use my best judgment in selecting and revising estimates for a recommended standard of *Advanced* performance.

5	4	3	2	1
To a great extent		To some extent		Not at all

27. Please provide any comments you wish to share regarding the quality of assistance provided by the standard-setting staff.

28. Please provide any additional comments you wish to share regarding the overall meeting.

APPENDIX M:
RESULTS FOR ENGLISH I

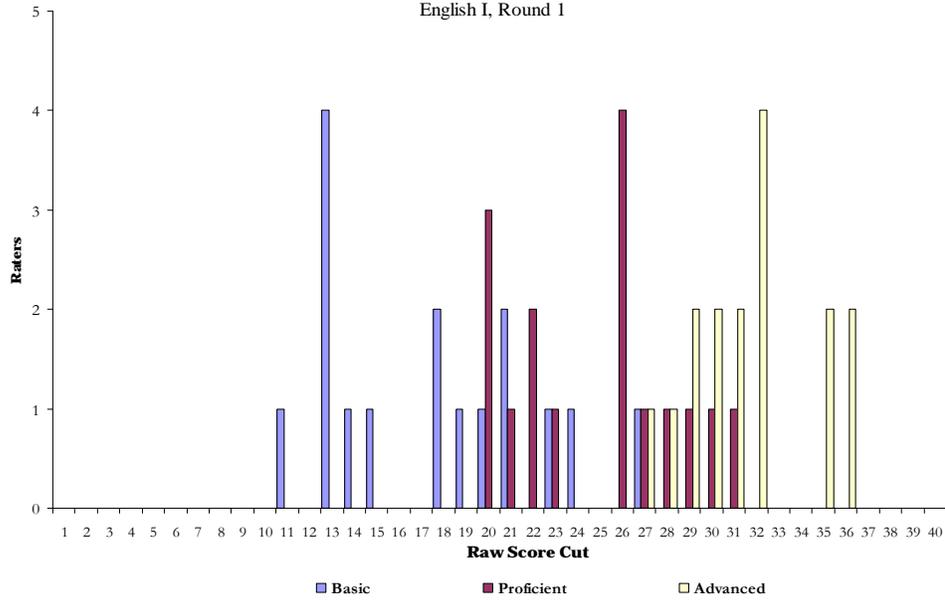
Standard Setting for the Missouri EOC Assessment English I

Round 1 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
12123	27	31	36
12133	24	30	35
12111	18	26	32
12213	13	21	29
12131	18	29	35
12112	11	20	29
12122	13	22	31
12211	19	26	32
12113	21	26	30
12222	15	22	31
12132	23	28	32
12232	21	27	36
12222	20	26	32
12231	13	20	27
12212	13	20	28
12121	14	23	30

Median Rating:	18	26	32
Average Rating:	17.7	24.8	31.6
Standard Deviation:	4.6	3.6	2.7
Lowest Rating:	11	20	27
Highest Rating:	27	31	36
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	16	16	16

Missouri EOC Standard Setting
English I, Round 1

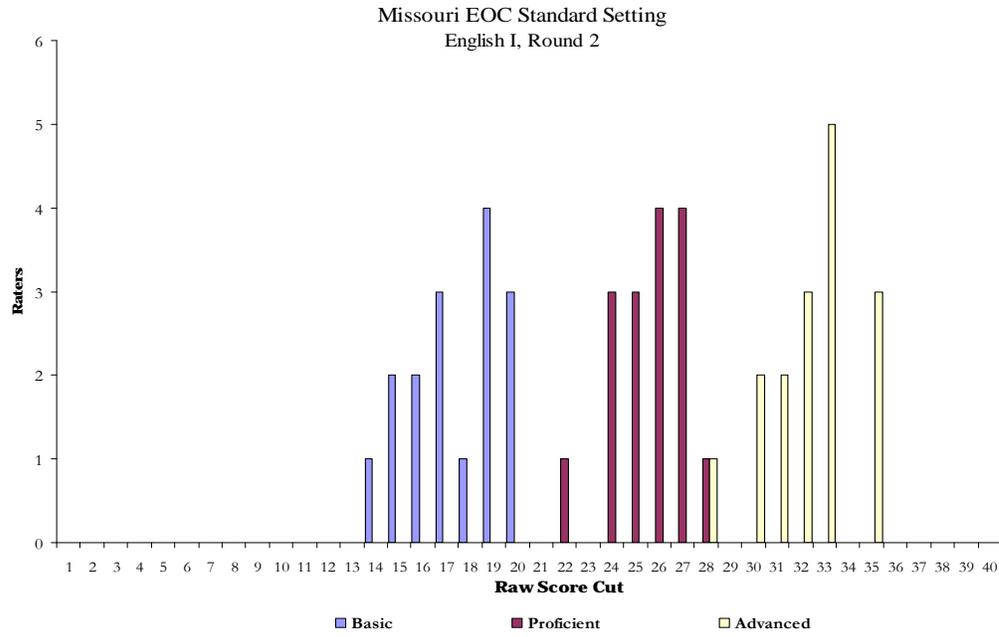


Standard Setting for the Missouri EOC Assessment English I

Round 2 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
12113	19	26	32
12111	17	27	33
12212	17	24	31
12231	19	27	35
12133	15	24	32
12222	20	27	33
12131	16	28	35
12232	16	25	35
12123	20	24	28
12213	18	26	33
12121	15	25	30
12122	17	25	32
12112	19	27	33
12221	14	22	31
12132	20	26	30
12211	19	26	33

Median Rating:	18	26	33
Average Rating:	17.6	25.6	32.3
Standard Deviation:	1.9	1.5	1.9
Lowest Rating:	14	22	28
Highest Rating:	20	28	35
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	16	16	16



IMPACT RESULTS

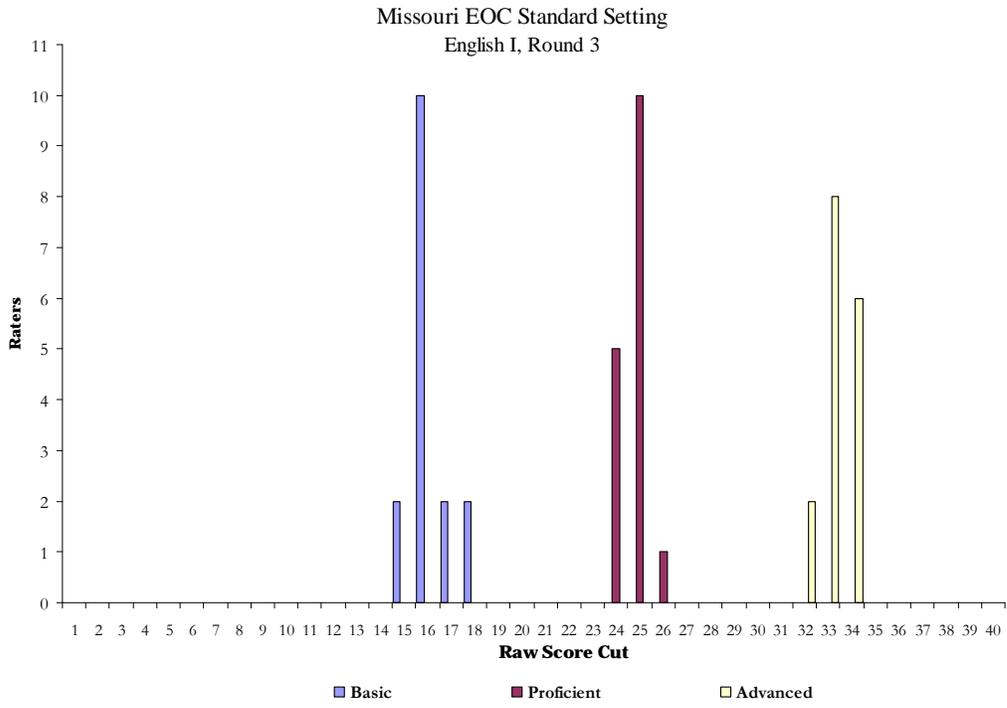
	Minimal	Basic	Proficient	Advanced
Total Population	15.0	33.0	32.0	20.0

Standard Setting for the Missouri EOC Assessment English I

Round 3 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
12111	16	24	33
12112	15	24	32
12113	16	25	34
12121	16	25	33
12122	16	25	33
12123	18	25	34
12131	16	25	33
12132	16	24	32
12133	16	24	33
12211	16	24	33
12212	17	25	33
12213	16	25	33
12221	15	25	34
12222	18	26	34
12231	16	25	34
12232	17	25	34

Median Rating:	16	25	33
Average Rating:	16.3	24.8	33.3
Standard Deviation:	0.8	0.6	0.7
Lowest Rating:	15	24	32
Highest Rating:	18	26	34
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	16	16	16



English I

IMPACT RESULTS

	Minimal	Basic	Proficient	Advanced
Total Population	9.0	34.0	37.0	20.0

APPENDIX N:
RESULTS FOR ALGEBRA II

Standard Setting for the Missouri EOC Assessment

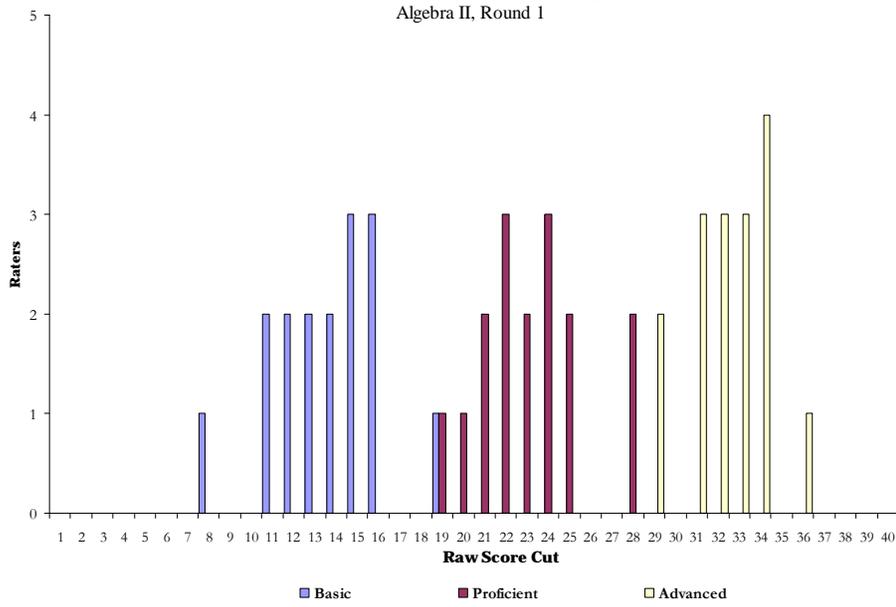
Algebra II

Round 1 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
21111	12	19	34
21112	19	28	34
21113	14	22	32
21121	16	25	32
21122	8	22	29
21123	11	23	33
21131	12	21	31
21132	15	24	32
21133	14	20	29
21211	13	28	36
21212	15	23	31
21213	13	24	34
21221	15	24	33
21222	11	21	33
21223	16	25	34
21231	16	22	31

Median Rating:	14	23	33
Average Rating:	13.8	23.2	32.4
Standard Deviation:	2.5	2.5	1.8
Lowest Rating:	8	19	29
Highest Rating:	19	28	36
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	16	16	16

Missouri EOC Standard Setting
Algebra II, Round 1



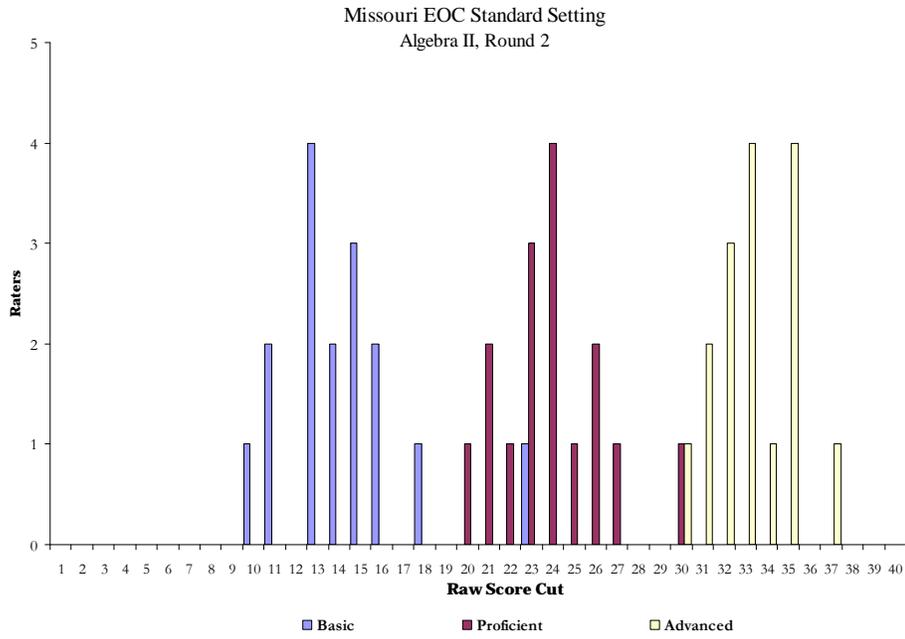
Standard Setting for the Missouri EOC Assessment

Algebra II

Round 2 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
21111	13	20	33
21112	18	26	32
21113	23	30	37
21121	15	24	31
21122	10	24	33
21123	11	23	34
21131	13	22	32
21132	15	24	32
21133	14	21	30
21211	13	27	35
21212	15	23	31
21213	13	24	35
21221	16	26	35
21222	11	21	33
21223	14	25	35
21231	16	23	33

Median Rating:	14	24	33
Average Rating:	14.4	23.9	33.2
Standard Deviation:	3.0	2.4	1.8
Lowest Rating:	10	20	30
Highest Rating:	23	30	37
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	16	16	16



Algebra II

ROUND 2 IMPACT RESULTS

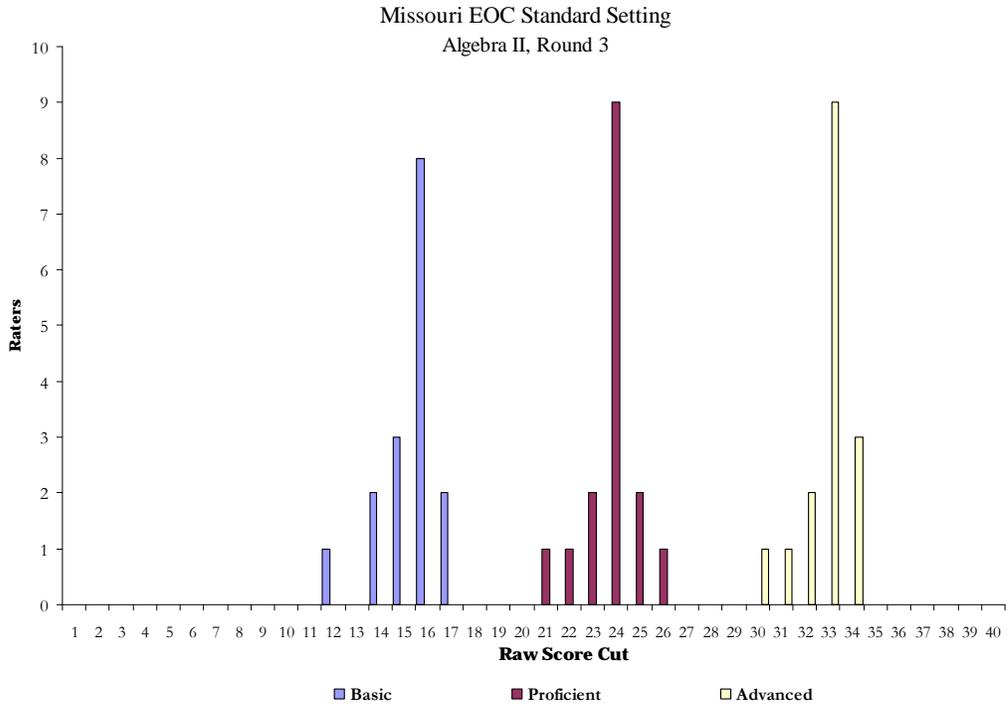
	Below Basic	Basic	Proficient	Advanced
Total Population	7.0	52.0	33.0	8.0

Standard Setting for the Missouri EOC Assessment Algebra II

Round 3 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
21111	16	21	31
21112	17	26	33
21113	14	24	33
21121	17	24	33
21122	12	24	33
21123	14	23	33
21131	15	24	33
21132	16	24	32
21133	16	23	33
21211	16	24	32
21212	16	24	33
21213	15	24	34
21221	16	25	34
21222	16	24	33
21223	15	25	34
21231	16	22	30

Median Rating:	16	24	33
Average Rating:	15.4	23.8	32.8
Standard Deviation:	1.2	1.1	1.0
Lowest Rating:	12	21	30
Highest Rating:	17	26	34
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	16	16	16



Algebra II

FINAL IMPACT RESULTS

	Below Basic	Basic	Proficient	Advanced
Total Population	14.0	45.0	33.0	8.0

APPENDIX O:
RESULTS FOR GEOMETRY

Standard Setting for the Missouri EOC Assessment

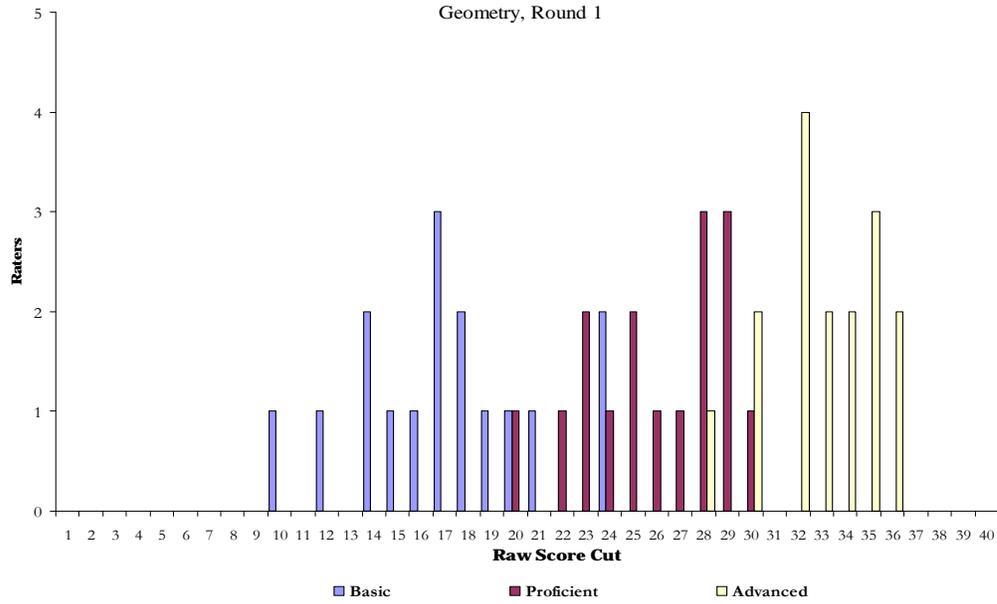
Geometry

Round 1 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
22111	17	26	33
22113	14	22	30
22121	12	29	36
22123	10	20	30
22131	24	28	32
22132	17	23	28
22133	16	25	32
22211	19	28	34
22212	24	30	36
22213	14	24	32
22221	18	28	35
22222	18	29	35
22223	20	27	33
22231	15	23	34
22232	21	29	35
22233	17	25	32

Median Rating:	17	27	33
Average Rating:	17.3	26.0	32.9
Standard Deviation:	3.8	2.9	2.2
Lowest Rating:	10	20	28
Highest Rating:	24	30	36
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	16	16	16

Missouri EOC Standard Setting
Geometry, Round 1

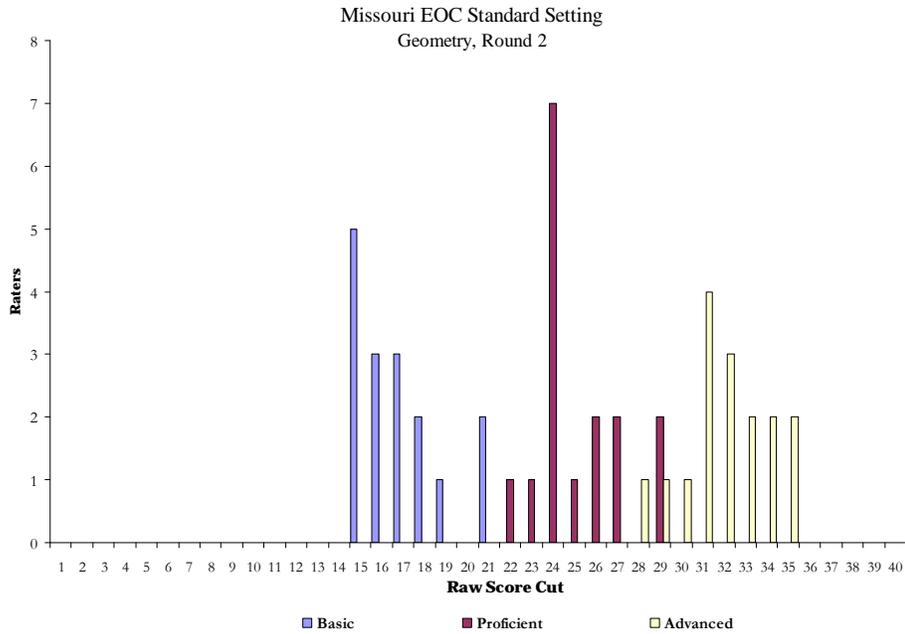


Standard Setting for the Missouri EOC Assessment Geometry

Round 2 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
22111	16	24	31
22113	15	22	28
22121	16	29	35
22123	15	24	34
22131	21	26	31
22131	19	24	30
22133	15	24	31
22211	17	23	29
22212	18	25	33
22213	16	24	31
22221	17	27	34
22222	15	26	33
22223	18	29	35
22231	15	24	32
22232	21	27	32
22233	17	24	32

Median Rating:	17	24	32
Average Rating:	16.9	25.1	31.9
Standard Deviation:	2.0	2.0	2.0
Lowest Rating:	15	22	28
Highest Rating:	21	29	35
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	16	16	16



Geometry

ROUND 2 IMPACT RESULTS

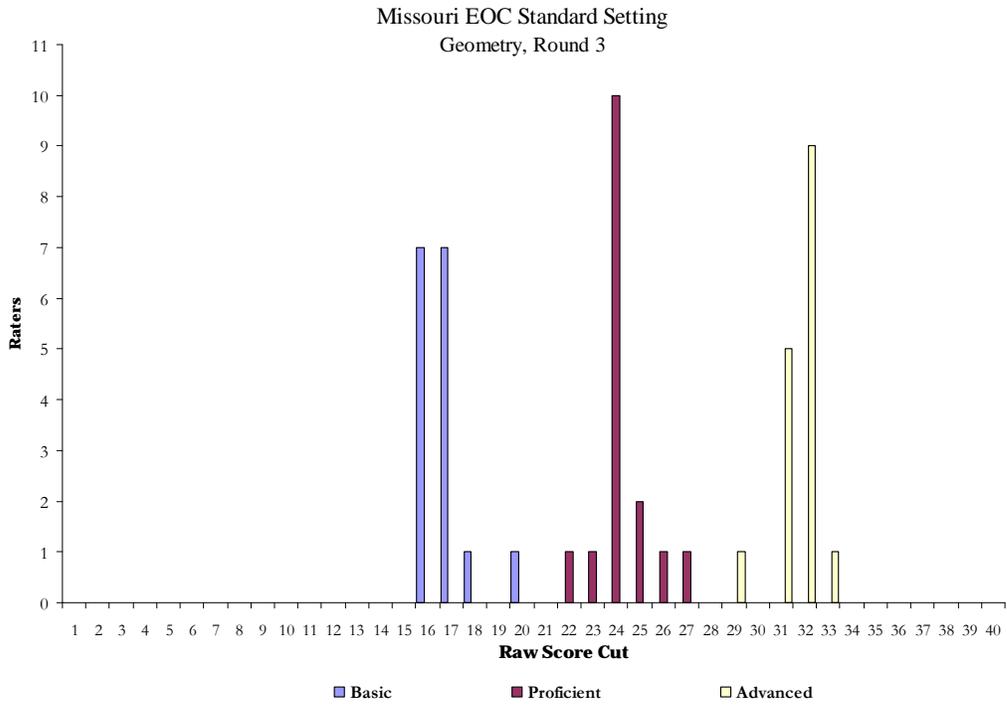
	Below Basic	Basic	Proficient	Advanced
Total Population	18.0	30.0	38.0	14.0
Male	16.0	31.0	37.0	16.0
Female	19.0	33.0	34.0	14.0

Standard Setting for the Missouri EOC Assessment Geometry

Round 3 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
22111	16	24	31
22113	16	24	32
22121	17	25	32
22123	16	24	32
22131	20	26	31
22132	17	22	29
22133	16	24	32
22211	17	24	32
22212	17	24	32
22213	17	25	31
22221	17	24	32
22222	17	24	32
22223	18	27	33
22231	16	24	31
22232	16	23	31
22233	16	24	32

Median Rating:	17	24	32
Average Rating:	16.8	24.3	31.6
Standard Deviation:	1.0	1.1	0.9
Lowest Rating:	16	22	29
Highest Rating:	20	27	33
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	16	16	16



Geometry

FINAL IMPACT RESULTS

	Below Basic	Basic	Proficient	Advanced
Total Population	18.0	30.0	38.0	14.0

APPENDIX P:
RESULTS FOR GOVERNMENT

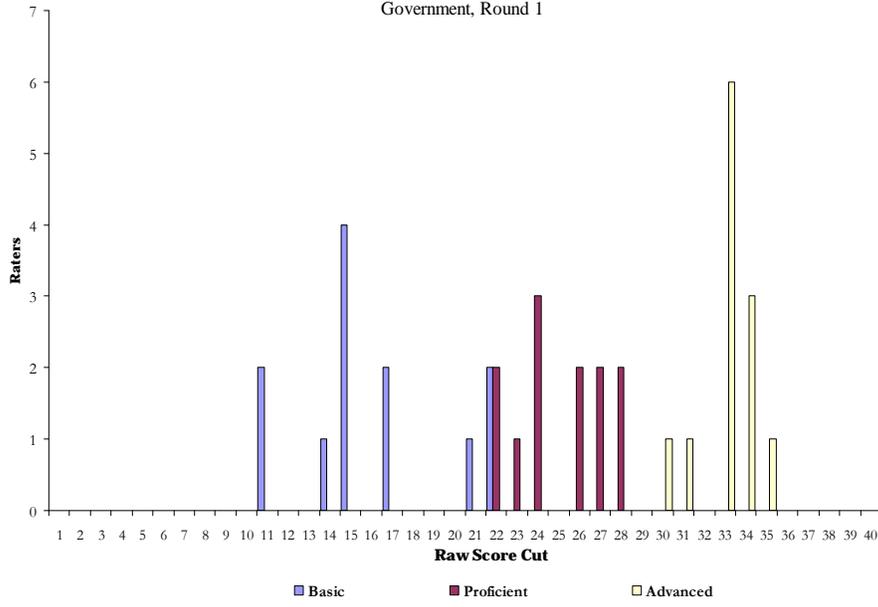
Standard Setting for the Missouri EOC Assessment Government

Round 1 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
22111	17	27	34
23112	22	27	33
23113	14	26	33
23121	15	23	33
23123	15	24	34
23131	22	28	33
23132	17	24	31
23133	15	26	33
23211	11	22	30
23212	11	22	33
23213	15	24	35
23221	21	28	34

Median Rating:	15	25	33
Average Rating:	16.3	25.1	33.0
Standard Deviation:	3.6	2.1	1.3
Lowest Rating:	11	22	30
Highest Rating:	22	28	35
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	12	12	12

Missouri EOC Standard Setting
Government, Round 1

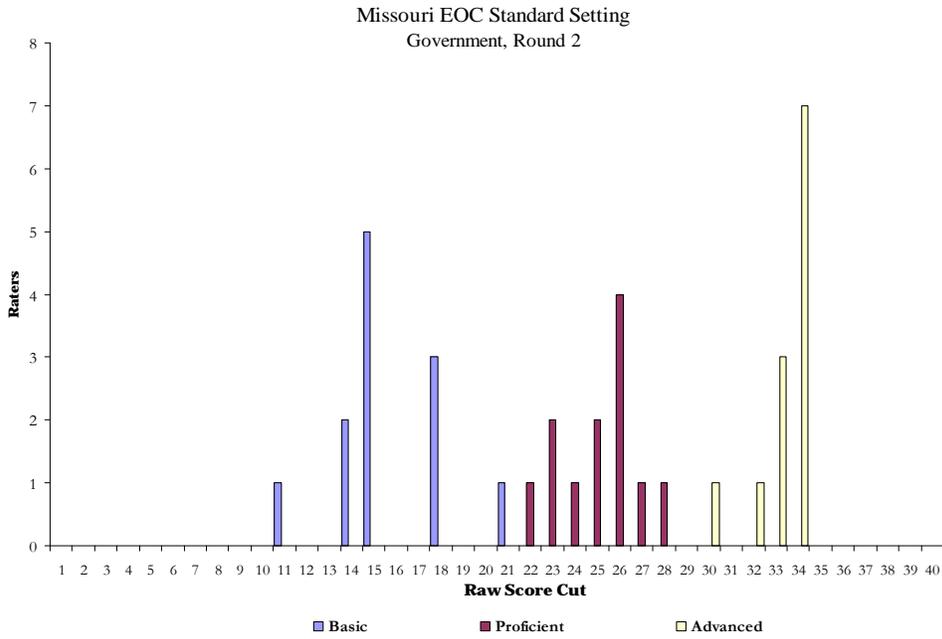


Standard Setting for the Missouri EOC Assessment Government

Round 2 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
23111	15	26	34
23112	18	26	33
23113	14	26	33
23121	15	23	34
23123	15	24	34
23131	21	27	32
23132	18	26	34
23133	14	25	33
23211	11	22	30
23212	15	25	34
23213	15	23	34
23221	18	28	34

Median Rating:	15	26	34
Average Rating:	15.8	25.1	33.3
Standard Deviation:	2.5	1.7	1.2
Lowest Rating:	11	22	30
Highest Rating:	21	28	34
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	12	12	12



Standard Setting for the Missouri EOC Assessment

Government

ROUND 2 IMPACT RESULTS

	Below Basic	Basic	Proficient	Advanced
Round 2	12%	49%	29%	10%

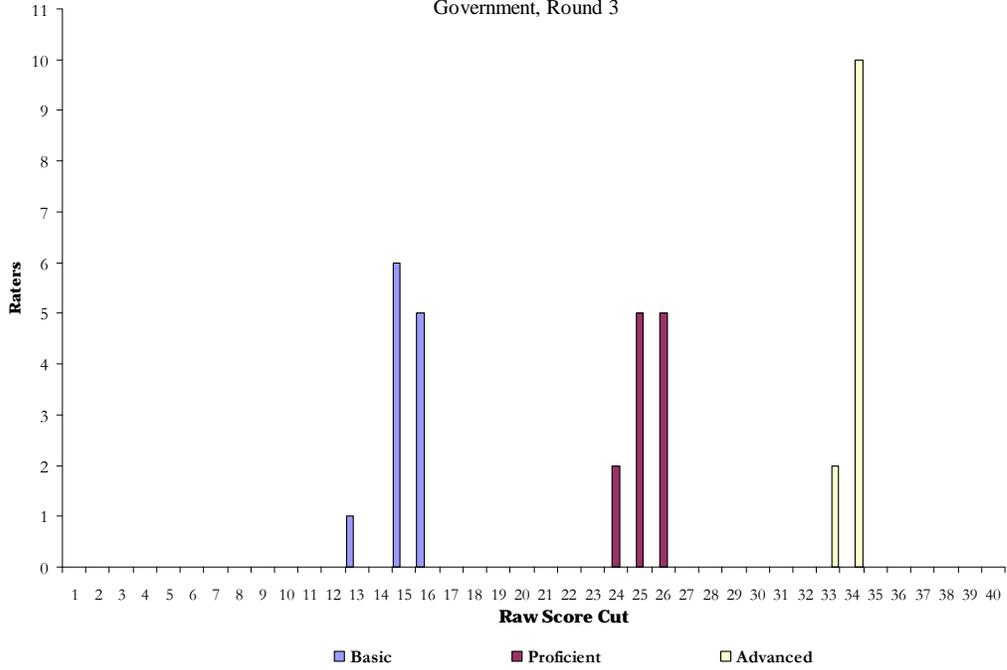
Standard Setting for the Missouri EOC Assessment Government

Round 3 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
23111	15	25	34
23112	16	26	34
23113	16	26	34
23121	15	25	34
23123	15	25	34
23131	15	25	33
23132	15	26	34
23133	13	24	33
23211	16	24	34
23212	16	26	34
23213	16	25	34
23221	15	26	34

Median Rating:	15	25	34
Average Rating:	15.3	25.3	33.8
Standard Deviation:	0.8	0.7	0.4
Lowest Rating:	13	24	33
Highest Rating:	16	26	34
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	12	12	12

Missouri EOC Standard Setting
Government, Round 3



Government				
	Below Basic	Basic	Proficient	Advanced
Total Population	12.0	44.0	34.0	10.0

APPENDIX Q:
RESULTS FOR AMERICAN HISTORY

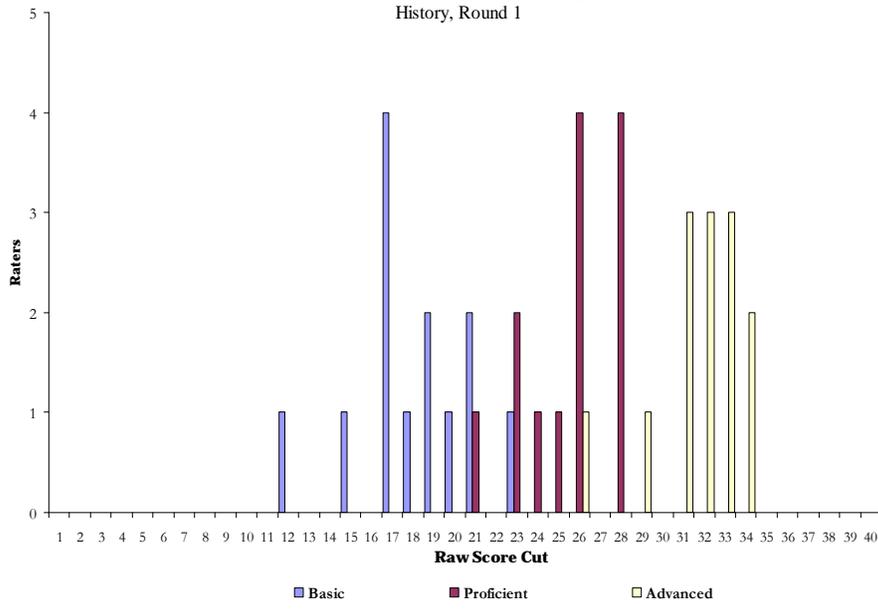
Standard Setting for the Missouri EOC Assessment American History

Round 1 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
11122	12	23	31
11123	17	23	29
11223	19	28	34
11111	17	25	32
11131	21	28	34
11222	15	21	26
11112	18	26	31
11212	17	26	33
11132	23	28	33
11213	17	26	33
11221	21	28	32
11211	20	26	32
11121	19	24	31

Median Rating:	18	26	32
Average Rating:	18.2	25.5	31.6
Standard Deviation:	2.7	2.2	2.1
Lowest Rating:	12	21	26
Highest Rating:	23	28	34
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	13	13	13

Missouri EOC Standard Setting
History, Round 1

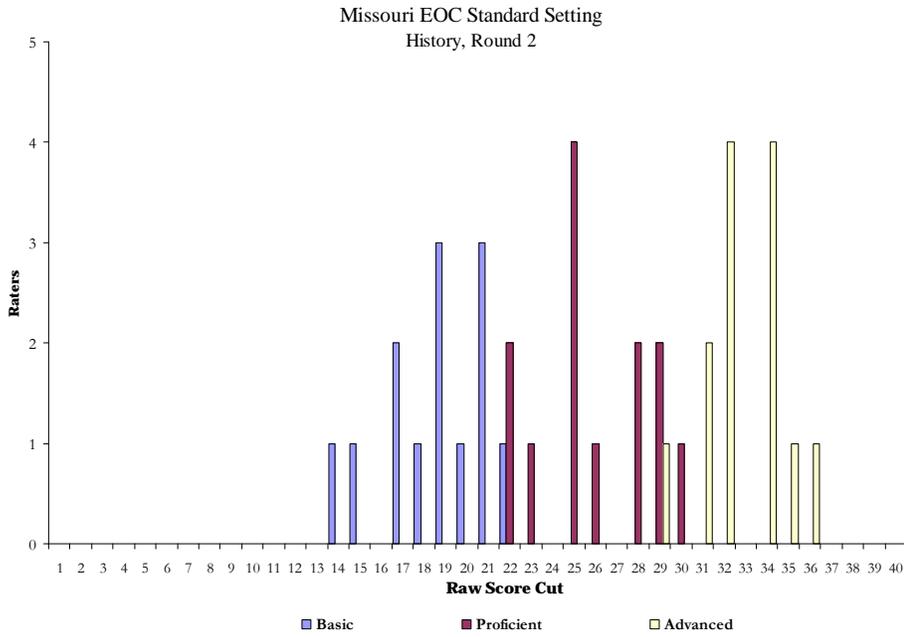


Standard Setting for the Missouri EOC Assessment American History

Round 2 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
11212	17	25	32
11111	18	25	32
11123	19	25	31
11131	15	22	31
11132	19	28	34
11221	21	28	34
11112	22	29	34
11222	17	22	29
11122	14	23	32
11121	20	25	34
11223	21	29	35
11213	21	30	36
11211	19	26	32

Median Rating:	19	25	32
Average Rating:	18.7	25.9	32.8
Standard Deviation:	2.3	2.6	1.8
Lowest Rating:	14	22	29
Highest Rating:	22	30	36
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	13	13	13



Standard Setting for the Missouri EOC Assessment

American History

IMPACT RESULTS

	Below Basic	Basic	Proficient	Advanced
Round 2	23.0	32.0	30.0	15.0

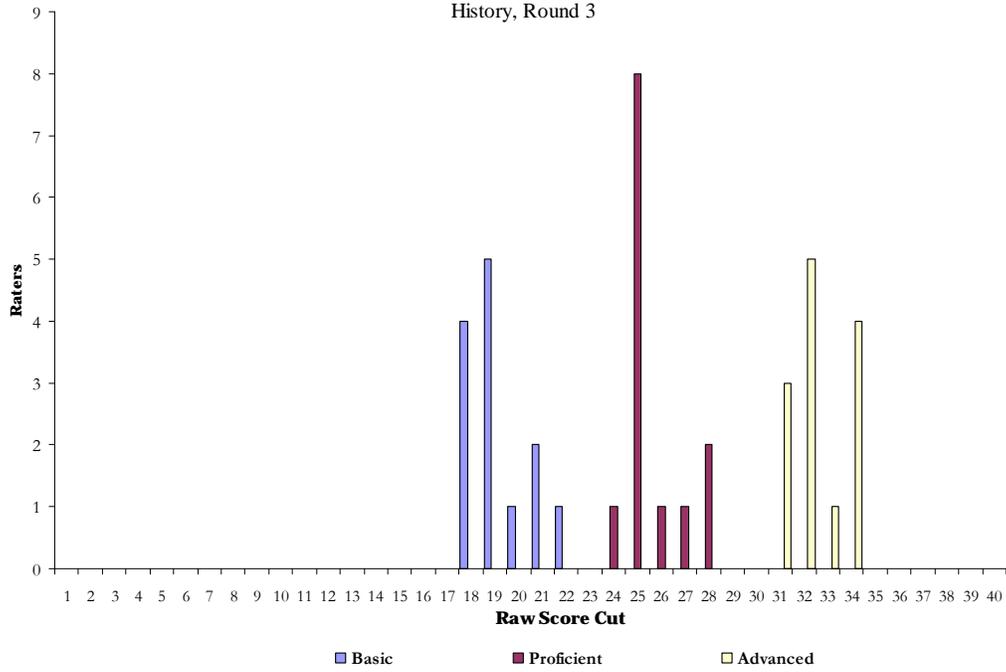
Standard Setting for the Missouri EOC Assessment American History

Round 3 Ratings Summary

Rater	Individual Rater Cut Scores		
	Basic	Proficient	Advanced
11111	19	25	34
11112	20	27	34
11121	18	25	32
11122	18	24	31
11123	19	25	31
11131	21	28	34
11132	19	25	32
11211	19	25	32
11212	18	25	33
11213	18	25	31
11221	22	28	34
11222	21	26	32
11223	19	25	32

Median Rating:	19	25	32
Average Rating:	19.3	25.6	32.5
Standard Deviation:	1.3	1.2	1.2
Lowest Rating:	18	24	31
Highest Rating:	22	28	34
Number of Items:	40	40	40
Points Possible:	40	40	40
Number of Raters:	13	13	13

Missouri EOC Standard Setting
History, Round 3



IMPACT RESULTS				
	Minimal	Basic	Proficient	Advanced
Total Population	23.0	32.0	30.0	15.0

APPENDIX R:
PARTICIPANT EVALUATION FORM DATA

Item 1

The Opening Session provided adequate background information about the Missouri End-of-Course Assessments.

5	4	3	2	1
Completely	Somewhat			Not at all

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	13	81	11	69	10	63	10	83	11	85	55	75
4	3	19	5	31	6	38	2	17	2	15	18	25
3	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	16	100	16	100	12	100	13	100	73	100

Item 2

The topics covered in the Opening Session were appropriate to providing a context for my role in this meeting.

5	4	3	2	1
Completely	Somewhat			Not at all

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	14	88	13	81	10	63	11	92	12	92	60	82
4	2	13	3	19	6	38	1	8	1	8	13	18
3	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	16	100	16	100	12	100	13	100	73	100

Item 3

The content of the Opening Sessions was:

5	4	3	2	1
Very useful		Somewhat useful		Not useful

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	8	50	13	81	6	38	10	84	8	62	45	67
4	8	50	3	19	7	44	2	17	5	39	25	34
3	0	0	0	0	3	19	0	0	0	0	3	4
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	16	100	16	100	12	100	13	100	73	100

Item 4

The organization of the Opening Sessions was:

5	4	3	2	1
Very good		Acceptable		Very poor

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	13	81	13	81	8	50	10	84	9	70	53	73
4	2	13	2	13	5	31	2	17	4	31	15	21
3	1	6	1	6	3	19	0	0	0	0	5	7
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	16	100	16	100	12	100	13	100	73	100

Item 8

The activities used to help operationalize *Proficient* performance were:

5	4	3	2	1
Very useful		Somewhat useful		Not useful

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	5	31	13	81	9	56	7	58	12	92	46	63
4	9	56	3	19	5	31	5	42	1	8	23	32
3	2	13	0	0	1	6	0	0	0	0	3	4
2	0	0	0	0	1	6	0	0	0	0	1	1
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	16	100	16	100	12	100	13	100	73	100

Item 9

By the end of the activity, my conception of *Proficient* performance was:

5	4	3	2	1
Very well formed		Moderately Well Formed		Not Well Formed

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	7	44	7	44	10	63	8	67	11	85	43	59
4	7	44	7	44	5	31	4	33	2	15	25	34
3	2	13	2	13	0	0	0	0	0	0	4	6
2	0	0	0	0	1	6	0	0	0	0	1	1
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	16	100	16	100	12	100	13	100	73	100

Item 11

The activities used to help operationalize *Basic* performance were:

5	4	3	2	1
Very useful		Somewhat useful		Not useful

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	4	25	12	75	10	63	5	42	11	85	42	58
4	9	56	4	25	5	31	7	59	2	15	27	37
3	3	19	0	0	0	0	0	0	0	0	3	4
2	0	0	0	0	1	6	0	0	0	0	1	1
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	16	100	16	100	12	100	13	100	73	100

Item 12

By the end of this activity my conception of *Basic* performance was:

5	4	3	2	1
Very well formed		Moderately Well Formed		Not Well Formed

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	7	44	5	31	10	63	5	42	10	77	37	51
4	7	44	10	63	5	31	6	50	3	23	31	43
3	2	13	1	6	0	0	1	8	0	0	4	6
2	0	0	0	0	1	6	0	0	0	0	1	1
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	16	100	16	100	12	100	13	100	73	100

Item 14

The activities used to help operationalize *Advanced* performance were:

5	4	3	2	1
Very useful	Somewhat useful			Not useful

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	5	36	12	75	9	56	7	58	12	92	45	63
4	8	57	4	25	6	38	3	25	1	8	22	31
3	1	7	0	0	0	0	2	17	0	0	3	4
2	0	0	0	0	1	6	0	0	0	0	1	1
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	14*	100	16	100	16	100	12	100	13	100	71	100

*Two English I panelists did not respond to this question.

Item 15

By the end of this activity my conception of *Advanced* performance was:

5	4	3	2	1
Very well formed	Moderately Well Formed			Not Well Formed

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	7	50	9	56	10	63	7	58	10	77	43	61
4	6	43	6	38	5	31	4	33	3	23	24	34
3	1	7	1	6	0	0	1	8	0	0	3	4
2	0	0	0	0	1	6	0	0	0	0	1	1
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	14*	100	16	100	16	100	12	100	13	100	71	100

*Two English I panelists did not respond to this question.

Item 17

Using the sample items to prepare for the actual item rating was:

5	4	3	2	1
Very helpful	Somewhat helpful			Not helpful

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	8	53	12	80	8	50	8	68	9	69	45	63
4	4	27	1	7	2	13	4	33	2	15	13	18
3	3	20	2	13	5	31	0	0	2	15	12	17
2	0	0	0	0	1	6	0	0	0	0	1	1
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	15*	100	15*	100	16	100	12	100	13	100	71	100

*One English I panelist and one Algebra II panelist did not respond to this question

Item 18

The explanation of the item data during the sample item portion of the training was:

5	4	3	2	1
Very helpful	Somewhat helpful			Not helpful

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	9	57	12	80	7	44	9	75	10	77	47	65
4	7	44	2	13	6	38	3	25	2	15	20	28
3	0	0	1	7	3	19	0	0	1	8	5	7
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	15*	100	16	100	12	100	13	100	72	100

*One Algebra II panelist did not respond to this question

Item 19

The Item Rating Form was:

5	4	3	2	1
Very easy to use	Somewhat easy to use			Not at all easy to use

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	14	93	11	73	12	75	8	67	9	69	54	76
4	1	7	4	27	4	25	3	25	4	31	16	23
3	0	0	0	0	0	0	1	8	0	0	1	1
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	15*	100	15*	100	16	100	12	100	13	100	71	100

*One English II panelist and one Algebra II panelist did not respond to this question.

Item 20

The information provided prior to each round of rating was:

5	4	3	2	1
Very useful	Somewhat useful			Not useful

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	10	63	13	87	12	75	8	67	9	69	52	72
4	6	38	2	13	2	13	2	17	4	31	16	22
3	0	0	0	0	2	13	2	17	0	0	4	6
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	15*	100	16	100	12	100	13	100	72	100

*One Algebra II panelist did not respond to this question.

Item 21

My level of understanding of the tasks I was to accomplish for each round was:

5	4	3	2	1
Very good		Acceptable		Very poor

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	12	75	10	67	13	81	9	75	10	77	54	75
4	3	18	5	33	3	19	1	8	3	23	15	21
3	1	6	0	0	0	0	2	17	0	0	3	4
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	15*	100	16	100	12	100	13	100	72	100

*One Algebra II panelist did not respond to this question.

Item 22

The amount of time I had to complete the tasks during each round was:

5	4	3	2	1
Far too long		About right		Far too short

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	2	13	0	0	0	0	5	42	1	8	8	11
4	1	6	0	0	4	25	0	0	0	92	5	7
3	13	81	15	100	12	75	7	58	12	0	59	82
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	15*	100	16	100	12	100	13	100	72	100

*One Algebra II panelist did not respond to this question.

Item 24

I feel that this standard-setting session provided me an opportunity to use my best judgment in selecting and revising estimates for a recommended standard of *Proficient* performance.

5	4	3	2	1
To a great extent	To some extent			Not at all

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	13	81	11	73	11	69	8	67	12	92	55	76
4	3	19	4	27	4	25	4	33	1	8	16	22
3	0	0	0	0	1	6	0	0	0	0	1	1
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	15*	100	16	100	12	100	13	100	72	100

*One Algebra II panelist did not respond to this question.

Item 25

I feel that this standard-setting meeting provided me an opportunity to use my best judgment in selecting and revising estimates for a recommended standard of *Basic* performance.

5	4	3	2	1
To a great extent	To some extent			Not at all

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	12	75	11	73	12	75	7	58	12	92	54	75
4	4	25	3	20	3	19	4	33	1	8	15	21
3	0	0	1	7	1	6	1	8	0	0	3	4
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	15*	100	16	100	12	100	13	100	72	100

*One Algebra II panelist did not respond to this question.

Item 26.

I feel that this standard-setting meeting provided me an opportunity to use my best judgment in selecting and revising estimates for a recommended standard of *Advanced* performance.

5	4	3	2	1
To a great extent	To some extent			Not at all

Rating	English I		Algebra II		Geometry		Government		History		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
5	12	75	12	80	11	69	9	75	11	85	55	76
4	4	25	3	20	4	25	3	25	2	15	16	22
3	0	0	0	0	1	6	0	0	0	0	1	1
2	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	100	15*	100	16	100	12	100	13	100	72	100

*One Algebra II panelist did not respond to this question.