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## **MEMORANDUM**

**TO:** Members, Utah State Board of Education

**FROM:** Martell Menlove, Ph.D.  
Chief Executive Officer

**DATE:** August 7-8, 2014

**ACTION:** SAGE Standard Setting

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### **Background:**

The SAGE testing window closed June 20, 2014. Student test results will be analyzed over the summer and prepared for the standard setting activity August 11–15.

In a Board study session on August 7, Jon Cohen, Executive Vice President, American Institute of Research (AIR), will present information in regards to the SAGE Standard Setting and respond to Board member questions.

### **Key Points:**

Standard setting is a means of identifying cut scores that indicate whether a student has achieved an established level of proficiency. The standard setting process will involve expert judgment of educators and stakeholders and the SAGE student performance data. CRT, ACT and NAEP data will be used as referents in the standard setting process. The standard-setting procedures are intended to yield reasonable and supportable interpretations about the proficiency of students within a grade level and the growth of students' achievement across grade levels.

More than 200 educators will be involved in the standard setting process. Fifteen stakeholders will be invited to participate in the process. A stakeholder meeting will be held Monday, August 18, 2014, 9:00-11:00 a.m. to share information, receive feedback, and answer questions in regards to the standard setting process and results.

### **Anticipated Action:**

Board members may give specific direction to staff in regards to the standard setting process and/or outcomes.

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AMERICAN INSTITUTES FOR RESEARCH®

**Plan for Setting Proficiency Standards for the  
Utah Statewide Computer-Adaptive Assessment System  
Utah Student Assessment of Growth and Excellence (SAGE)**

**English Language Arts, Grades 3–11**

**Mathematics, Grades 3–8, Secondary Math I, Secondary Math II, Secondary Math III**

**Science, Grades 4 - 8, Biology, Earth Science, Chemistry, Physics**

**August 11 - August 15, 2014**

**SUBMITTED TO:**

Utah State Office of Education (USOE)

**SUBMITTED BY:**

American Institutes for Research  
1000 Thomas Jefferson Street, NW  
Washington, DC 20007

Date of Plan: July 7, 2014

**1000 THOMAS JEFFERSON STREET, NW | WASHINGTON, DC 20007-3835**

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## **SECTION 1: BACKGROUND OF THE STUDENT ASSESSMENT OF GROWTH AND EXCELLENCE (SAGE)**

Utah House Bill 15, passed during the 2012 Utah legislative session, modified the Utah Performance Assessment System for Students (U-PASS) to require school districts and charter schools to administer computer adaptive tests aligned with Utah Core Standards no later than the 2014-15 school years. In compliance with this bill, Utah will begin administering the Student Assessment of Growth and Excellence (SAGE) beginning in the 2013-2014 school years. Grade-level assessments will be administered in mathematics in grades 3 through 8, in English-Language Arts in grades 3 through 11, and in science in grades 4 through 8. In addition, course assessments will be administered for high school math (Math I, Math II, and Math III) and science (Biology, Earth Science, Chemistry, and Physics).

The first operational administration of the SAGE will occur in the winter and spring of 2014. Subsequently, the American Institutes for Research (AIR), under contract to the Utah State Office of Education, Assessment Section (USOE), will convene panels of Utah educators to recommend Proficiency standards on the SAGE assessments in math, science, and English-Language Arts. This document presents a plan for designing and conducting the standard setting workshops.

## **SECTION 2: OVERVIEW**

Standard setting is a means of identifying cut scores that indicate whether a student has achieved an established level of proficiency. Standard setting involves expert judgment that is typically informed by student performance data. A vast literature describes a wide range of standard-setting techniques. Some of these techniques are normative and identify cut scores that yield a desired percentage of examinees placed in two or more categories. Other techniques focus on what students know and are able to do. The latter techniques are better suited to address the current challenge in Utah.

Staff from the American Institutes for Research (AIR) will use the Bookmark procedure (Mitzel, Lewis, Patz, & Green, 2001) to set Proficiency standards. AIR and other test contractors

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have successfully used this method to set standards in many states. With the Bookmark procedure as implemented by AIR, several activities will be required for the workshop:

1. Content Standards
2. Proficiency-Level Descriptors
3. Proficiency Standards
4. Standard-Setting Panel
5. Training
6. Ordered-Item Booklet
7. Impact Data
8. Articulation
9. Benchmarking

Each of these components is briefly described below.

### **Content Standards**

During the standard setting workshops, panelists will examine a set of test items that meet the test blueprint and cover the academic content standards, content strands, and reporting categories. The reporting categories are contained in Appendix A.

### **Proficiency-Level Descriptors**

Proficiency-level descriptors (PLDs) are key elements in standard-setting processes. PLDs define the content area knowledge, skills, and processes that examinees at a proficiency level are expected to possess. The panelists will base their judgments about the location of the Proficiency standards using the PLDs to guide them in placing their bookmarks.

The high level PLDs are contained in Appendix B and the more detailed PLDs are contained in Appendix C (to be added later).

### **Proficiency Standards**

The Utah State Office of Education (USOE) plans to identify a set of Proficiency levels (intervals on the score scale) demarcated by Proficiency standards (cut-scores separating the

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Proficiency levels). These will be used for reporting to parents, teachers, schools and for federal reporting.

**Table 1: Proficiency Levels and Proficiency Standards**

Proficiency Levels and Standards	
Proficiency Levels	Proficiency Standards
Level 4: Highly Proficient	Highly Proficient
Level 3: Proficient	Proficient
Level 2: Approaching Proficient	Approaching Proficient
Level 1: Below Proficient	

The Proficiency standards (cut scores) are needed to distinguish or separate the Proficiency levels. Moreover, because student progress from grade to grade is a major focus of the testing system, these cut scores and the levels of proficiency they represent must increase incrementally from grade to grade. That is, at the same rate of progress, it should not be expected that students who exceed proficiency in the current year would become well below proficient in the next year. It would be difficult to interpret results in which large numbers of students show dramatic changes in Proficiency levels when their progress is consistent with teacher and program expectations.

The standard-setting procedures we propose here are intended to yield reasonable and supportable interpretations about the proficiency of students within a grade level and the growth of students' achievement across grade levels.

In the remainder of this plan, we describe a process for recommending Proficiency standards that USOE can consider. In this plan, standard-setting panels of educators and community representatives will follow the Bookmark standard-setting process to recommend the cut scores.

The cut scores recommended from the process will be:

- *content referenced* because they will be based on a rigorous application of the Utah Academic Content Standards;

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- *articulated* across grades with the help of the vertical scale and student performance data;
  - *reasonable* because they will be based on the expert, informed judgments of the standard-setting panels;
  - *credible* because a diverse group of panelists will follow a rigorous and well-supported standard-setting procedure; and
  - *benchmarked* against empirical external college and career ready indicators.

### ***Standard-Setting Panel***

We propose to convene five separate educator panels to recommend Proficiency standards for the SAGE assessments.

- High School Math
- High School Science
- English Language Arts Grades 3-11
- Mathematics Grades 3-8
- Science Grades 4-8

In addition, we propose to convene a stakeholder panel to review the procedures used and outcomes of the standard setting workshops.

### **Educator Panel**

The recruiting plan for obtaining panelists for the standard-setting workshops is intended to result in representative groups of panelists who will render informed recommendations to the state on the placement of the cut-scores for each Proficiency level. Diverse groups of panelists bring a wide range of perspectives and experience to the standard-setting effort, ensuring that the recommendations forwarded to the superintendent are thoughtful and representative of broad educational constituencies.

AIR will recommend the composition of the panel. The recommendation will be reviewed by The USOE, TAC and the PAC. USOE will recruit the panel. To account for last minute cancellations the USOE would recruit a 10% overage in the number of panelists. The panelists will be comprised mostly of teachers.

Each panel will be divided into grade or course-specific subpanels, as illustrated in Table 2 below. Each sub-panel will be comprised of fourteen educators, each divided into two tables. To the extent possible, tables will equally represent each of the groups described in the recruitment criteria above.

The overall composition of the panelists will be guided by a recruitment matrix similar to the one shown in Table 2. The details of the recruitment matrix will be decided by USOE.

**Table 2: Representative Composition and Diversity Targets for the Standard-Setting Panel**

Panel	Sub-Panel – Subject	Sub Panel - Grade	Teachers of SWD or ELL Students	Teachers of General Education Students	Higher Ed	Stakeholders	Total by Sub-panel	Total by Panel
<b>HS Math</b>	Math	I	1	5	1	1	8	<b>24</b>
	Math	II	1	5	1	1	8	
	Math	III	1	5	1	1	8	
<b>HS Science</b>	Science	Biology	1	11	1	1	14	<b>56</b>
	Science	Earth Science	1	11	1	1	14	
	Science	Chemistry	1	11	1	1	14	
	Science	Physics	1	11	1	1	14	
<b>ELA 3-11</b>	ELA	3 to 5	1	11	1	1	14	<b>42</b>
	ELA	6 to 8	1	11	1	1	14	
	ELA	9 to 11	1	11	1	1	14	
<b>Math 3-8</b>	Math	3 to 4	1	11	1	1	14	<b>42</b>
	Math	5 to 6	1	11	1	1	14	
	Math	7 to 8	1	11	1	1	14	
<b>Science 4 to 8</b>	Science	4 to 6	1	11	1	1	14	<b>28</b>
	Science	7 to 8	1	11	1	1	14	
<b>Total</b>			<b>15</b>	<b>147</b>	<b>15</b>	<b>15</b>	<b>192</b>	<b>192</b>

Notes: The USOE would make sure the panelists are representative in terms of gender and race/ethnicity. Also, the USOE will recruit a 10% overage to compensate for non-participation.

The USOE will obtain a cross-section of educators, following the specifications in Table 2. Where possible, they will recruit classroom teachers who have had teaching experience with students in two or more grade levels to ensure that they have perspective on the content standards, teaching-learning process, and students in the grade levels for which Proficiency standards will be recommended.

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In recruiting panelists, the USOE will seek the same representation of males and females as is found in the teacher population. The same principle will be applied to the geographical representation of panelists. In addition, we will strive for proportional representation of race/ethnicity for panel members as well as administrators and community groups.

There will be 2 – 3 table leaders in each of the 15 rooms that will be used for standard setting. There will be a special training session for table leaders starting at 8am the first day of each group (Monday and Wednesday). Table leaders are chosen because they represent the most senior and experienced members of the standard setting panel. They are expected to see the big picture, be sensitive to the policy goals of the standard setting and help articulate what we are trying to accomplish. Table leaders will be tasked with assisting standard setting staff by:

- facilitating discussions within their table
- assisting with distribution and collection of readiness and recording sheets and secure materials
- alerting workshop staff of confusion or concerns within their tables
- representing panels during stakeholder review meeting

The primary function of table leaders is to aid standard setting staff by helping to facilitate discussions within tables, report concerns of fellow panelists to staff, and assist with the distribution and collection of materials. Throughout the standard setting process, they will view live test items and other confidential assessment materials. Table leaders are asked to assist in ensuring all secure materials remain in the workshop rooms.

Table leaders will represent the views of the panelists during stakeholder review activities that will happen following the completion of standard setting. At least one table leader from each room will be asked to attend the Stakeholders meeting on Monday, August 18<sup>th</sup>.

## **Stakeholder Committee**

While it is critically important to include a range of stakeholders in the standard setting process, experience has shown that the panels will be composed largely of classroom teachers and curriculum specialists with expertise in curriculum and instruction for the target grades and subjects. To ensure that the widest range of stakeholders has meaningful input into the standard setting process, stakeholders will be invited to participate in a final session that will be conducted with a group comprised of both table leaders and other stakeholders, including members from the educational community such as building and district administrators, local school board members, and staff from higher education, as well as members from outside the educational community including parents and business and community representatives. The primary role of the table leaders is to explain to the stakeholders how the panelists arrived at the cut-scores in the workshop.

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Upon arrival, the stakeholder committee will gather together and become familiar with the assessment and the standard setting process. They will hear from the senior leadership in the workshop and be provided with the outcomes of the standard setting. The stakeholders will see the results for ELA, mathematics and science. The stakeholders will be expected to review the process and the outcomes and provide the USOE with comments related to any policy issues that they may identify. The stakeholders will have an opportunity to react to the recommended standards and provide the USOE with feedback about your views of the reasonableness of the recommended standards and the standard setting process. Your feedback will be summarized and be a part of the presentation that the USOE will provide to the Board of Education which must approve the recommended standards.

### **Training**

Training is an essential element of a standard-setting workshop. Training at this meeting will involve a review and discussion of the SAGE, the test specifications, the PLDs for each Proficiency standard and the OIB. The AIR workshop leaders will provide training for the table leaders and the panelists. The USOE will review and approve all training materials used in the standard setting workshop.

Table leader training primarily involves a complete training session on the Bookmark method, how to provide leadership at the tables in the Bookmark process, and management of the secure materials. Panelist training is centered on the Bookmark method, use of the PLDs, and how the response probability (which in this workshop is  $RP = .67$ ) is used to set Bookmarks.

AIR and USOE content experts will be assigned to each of the standard-setting panels to provide training on the content, test specifications, and PLDs. They will provide the panelists with materials on the content standards and test specifications and an explanation of how the pool of items will be developed from the content standards. Panelists will be instructed to use these documents to familiarize themselves with what the content standards are, how the test will be designed, and what students are specifically expected to know.

### **Ordered-item Booklet**

For the SAGE a set of about 60-80 items (proportional to the test blueprint) in each subject and grade will be randomly selected from the item-bank. The items will be selected so

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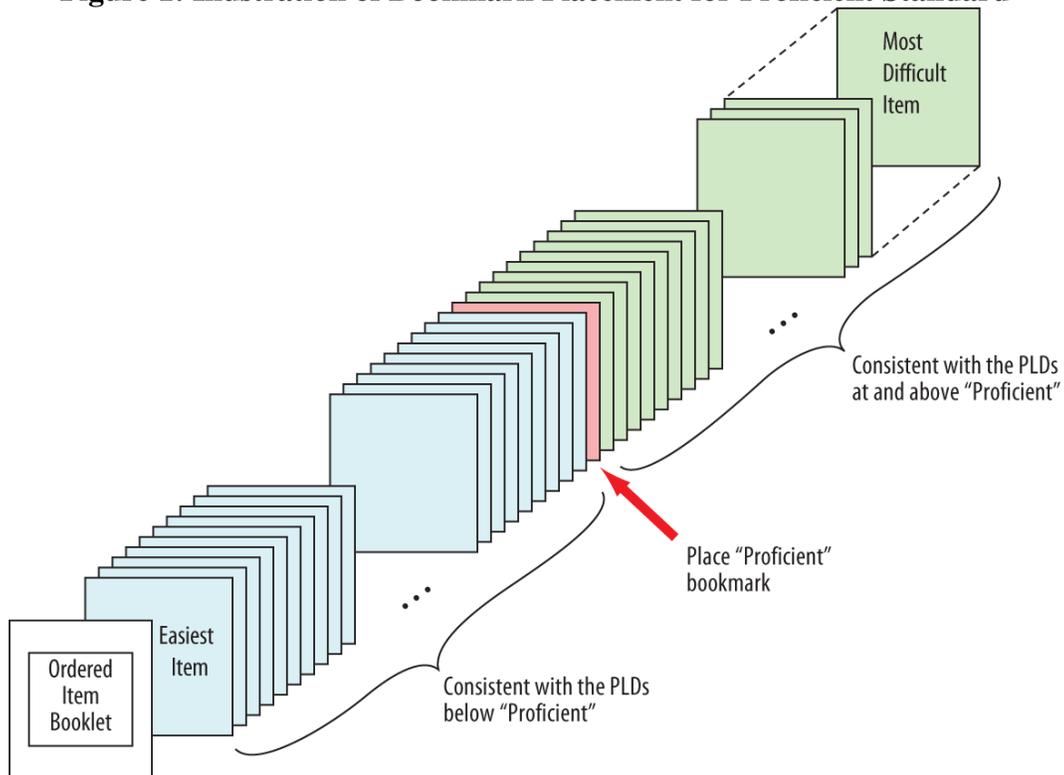
they are representative of the test blueprint and subject to USOE approval. Items will be selected from the bank that has not been flagged for data review.

Items from the representative form will be rank-ordered according to their *RP67* value. For constructed-response items, the ordering will be based on step-level *RP67* values. Constructed-response items will appear multiple times in the ordered-item booklet (OIB), once for each step category.

Standard setters will make content judgments about each item. Using the PLDs as a guide, they will place a bookmark beside the item that best delineates the Proficiency levels. The judgment will be based on their training and the given response probability (*RP67*) level.

Figure 1 illustrates how this is accomplished. In the figure the items are ordered from easy to hard (i.e., the ordered-item booklet). The panelists use the content standards and PLDs to locate the item that best describes the lower bound of each Proficiency standard.

**Figure 1: Illustration of Bookmark Placement for Proficient Standard**



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## Impact Data

The percentage of students in the state who meet or exceed each potential Proficiency standard (i.e., each page in the OIB) will be estimated and provided to the panelists to provide them with context for their decisions about Proficiency standards. Impact data will be introduced before the second round in the standard-setting process to provide contextual information to panelists and an external referent.

For each major demographic group, the percentage of students estimated to meet or exceed the recommended Proficiency standards is estimated. These estimates are based on distributional projections of the density distribution from the field test administration projected onto the representative form used in the standard setting. The distributional projections are accomplished as follows.

The goal in determining the impact data is to estimate how well the students would have performed if they had been administered the representative form used during the standard setting. The ability of student  $i$  in the field test population is estimated by  $\hat{\theta}_i$  with standard error of  $se(\hat{\theta}_i)$ , where  $i = 1, 2, \dots, N$ . For each theta,  $\theta_0$ , one can estimate the probability of person  $i$ 's ability being above given  $\hat{\theta}_i$  as

$$P(\theta_i > \theta_0 | \hat{\theta}_i) = 1 - \Phi\left(\frac{\theta_0 - \hat{\theta}_i}{se(\hat{\theta}_i)}\right),$$

where  $\Phi$  is the cumulative density function (CDF) of a standard normal distribution. The proportion of the population with ability higher than  $\theta$  is then estimated by

$$P(\theta > \theta_0) = \int P(\theta_i > \theta_0 | \hat{\theta}_i) f(\hat{\theta}_i) d\hat{\theta}_i = \frac{1}{N} \sum_{i=1}^N P(\theta_i > \theta_0 | \hat{\theta}_i) = \frac{1}{N} \sum_{i=1}^N \left[ 1 - \Phi\left(\frac{\theta_0 - \hat{\theta}_i}{se(\hat{\theta}_i)}\right) \right].$$

The panelists will be presented with statewide impact data which is the percentage of students meeting and exceeding any given Proficiency standard for each page number in the Bookmark OIB. This will be an estimate of percentages based on how students performed in the field test. Table 3 gives an *illustrative* example of impact data that might be used in the standard setting. This type of impact data (inverse cumulative frequency distributions) *will be provided at*

*the beginning of round 2 and will be permanently on display after that for the standard setters.*

At any time, the standard setters can look at the impact data and see how many students are likely to meet or exceed the standard under consideration.

Although all the columns of information in the table will be available to USOE they may not all be available to the standard setting panel. Some states prefer not to overwhelm the panel with too much data. At the minimum the overall percentages may be presented to the panel. This is a decision that will be made by USOE. The USOE will review and approve the impact data before it is presented to the workshop participants. The RP67 values are used in the background by the psychometricians to order the items but the panelists will not see this column. The RP67 will be based on the 3pl model for multiple choice items and the 2pl partial credit model for constructed response items.

**Table 3: Hypothetical Example of Impact Data  
(e.g., Percent of Students at and Above Each Page in OIB for Grade 3 ELA)**

Illustration of Impact Data for ELA								
RP67 Theta (Not Given to Panelists)	Item Map Page	Overall	Male	Female	White	Black	Hispanic	Asian
		%	%	%	%	%	%	%
3.08	49	0	0	0	0	0	1	0
1.89	48	3	3	4	4	1	1	4
1.16	47	13	12	15	16	3	7	12
0.98	46	18	16	20	21	5	12	16
0.90	45	20	18	23	24	6	14	18
0.74	44	26	23	28	30	8	18	21
0.68	43	28	25	31	32	9	19	23
0.44	42	37	34	41	43	14	24	33
0.34	41	41	38	45	47	16	29	36
0.22	40	46	42	50	52	19	35	41
0.15	39	48	45	52	54	22	38	43
0.14	37	49	46	53	55	22	39	43
0.14	38	49	46	53	55	22	39	43
0.08	36	51	48	55	57	24	42	45
0.07	35	52	48	56	57	25	42	45
-0.01	34	54	51	58	60	28	44	48
-0.15	32	59	56	63	65	33	48	52
-0.15	33	59	56	63	65	33	48	52
-0.16	31	60	57	64	66	33	48	52

Illustration of Impact Data for ELA								
RP67 Theta (Not Given to Panelists)	Item Map Page	Overall	Male	Female	White	Black	Hispanic	Asian
		%	%	%	%	%	%	%
-0.19	30	61	58	65	67	34	49	53
-0.22	29	62	59	66	68	35	49	54
-0.29	28	65	62	69	71	38	51	57
-0.33	27	66	63	70	72	39	52	58
-0.37	26	67	64	71	73	41	53	60
-0.42	25	69	66	72	74	42	55	62
-0.53	24	72	69	75	77	47	59	67
-0.57	23	73	70	76	78	49	61	68
-0.60	22	74	71	77	79	50	62	68
-0.67	21	76	73	79	81	53	64	70
-0.69	20	76	74	79	81	54	65	71
-0.70	19	76	74	80	81	54	65	71
-0.71	18	77	74	80	82	55	65	71
-0.72	17	77	74	80	82	55	66	72
-0.81	16	79	76	82	84	58	67	75
-0.95	15	82	79	85	86	63	70	78
-0.96	14	82	80	85	86	63	71	78
-0.98	13	83	80	85	87	64	71	79
-1.13	12	85	83	88	89	68	76	82
-1.21	11	86	84	89	90	70	78	84
-1.24	10	87	85	89	90	71	78	84
-1.30	9	88	86	90	91	73	78	85
-1.41	8	89	87	92	92	77	79	87
-1.44	7	90	88	92	92	77	80	88
-1.50	6	90	89	93	93	79	81	88
-1.62	5	92	90	94	94	81	84	90
-2.11	4	96	95	97	97	90	91	96
-2.22	3	96	96	97	98	91	93	96
-2.24	2	97	96	98	98	92	93	96
-2.47	1	98	97	98	98	95	95	98

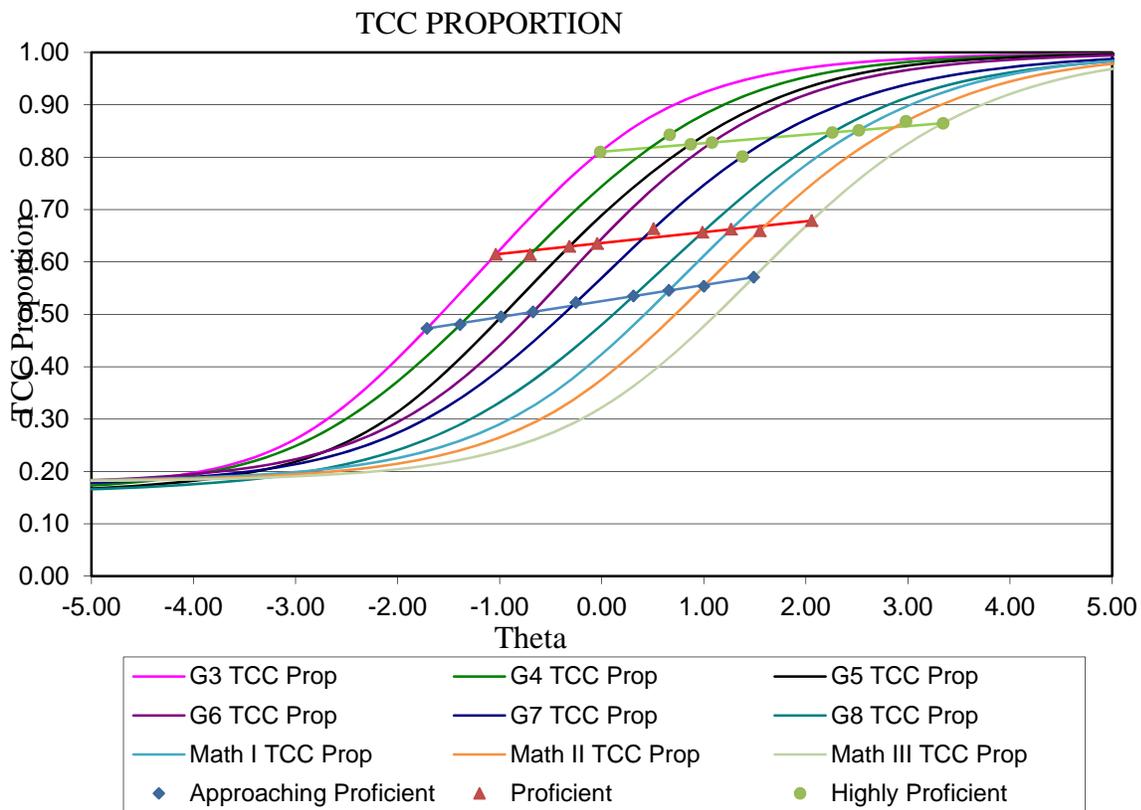
## Articulation

Part of the standard-setting process will include efforts to ensure that the Proficiency standards established across grades are reasonably consistent. It would not make sense, for example, to set high Proficiency standards in grade 3, low Proficiency standards in grade 4, and high Proficiency standards in grade 5.

Let's use Mathematics 3-8 as an illustration of articulation. The panelists in sub-panel 3-4, 5-6 and 7-8 will first recommend cut scores in the anchor grades (grades 4, 6 and 8, respectively). The test characteristic curves will be calculated for all six grades (3-8) in mathematics. A straight line will be drawn from each Proficiency standard from the lowest grade to the highest grade. In general, this represents the best fitting regression line between the anchor grades. There will be a theta associated with the point on the graph where the straight line

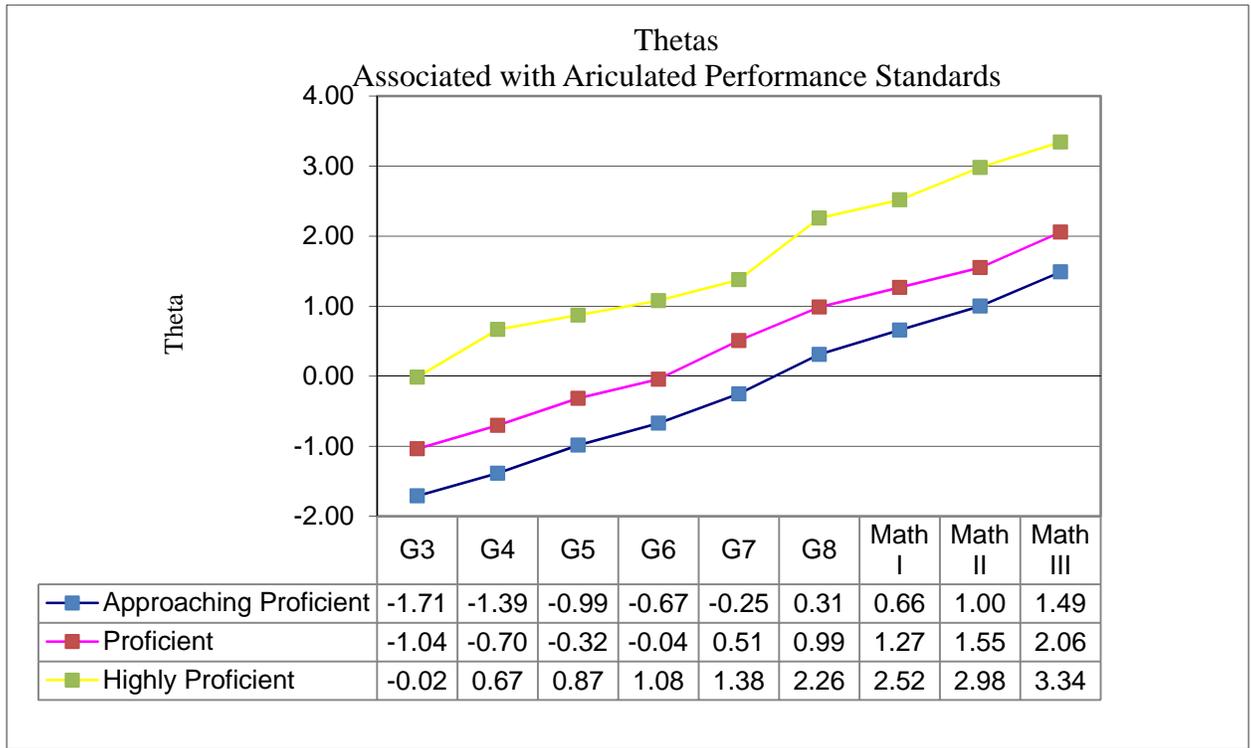
intersects the test characteristic curve for the intermediate grades (3, 5 and 7). This point of intersection will be considered the interpolated cut score for the intermediate grades. This can be seen in Figure 2.

**Figure 2: Articulation Using a Vertical Scale (Simulated Data)**



The articulated standards (expressed in the theta metric) can be graphed on the vertical scale. These standards are provided in Figure 3.

**Figure 3: Articulated Standards Expressed on a Vertical Scale (Simulated Data)**



The panelists will not see the thetas. Instead they will see the page numbers in the within-grade OIBs associated with the thetas. Following the completion of the anchor grades, standard-setting panelists will embark on recommending standards for the intermediate grades. The starting point for the panelists’ deliberations for the intermediate grades will be articulation information presented as page numbers in the OIB. The page numbers in the OIBs associated with each standard for each intermediate grade will be determined by using each standard’s location for the anchor grades and then interpolating the location of the standards across the test characteristic curves for the intermediate grades (see the figure below for an illustration). An illustration of the pages in the ordered-item booklet that represent the standards are in

Table 4.

The standard setters will be encouraged to affirm these interpolated standards unless there are substantial content reasons to deviate from them. The panelists will be instructed that in the final analysis all Proficiency standards must be based on content criteria. The extent to which the panelists adopt these interpolated Proficiency standards as their recommendation will determine the articulation of the standards.

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**Table 4: Hypothetical Example of Articulation Information (Simulated Data)**

Page Numbers in Ordered Item Booklet			
	Proficiency Standards		
Grade	Approaching Proficient	Proficient	Highly Proficient
G3	7	21	45
G4	7	16	45
G5	13	27	46
G6	10	25	52
G7	14	29	50
G8	15	28	52
Math I	12	26	48
Math II	12	26	48
Math III	16	28	48

Articulation information is contrasted with impact data. Impact data are normative and tell the panelists how many students in the state will obtain the standard being contemplated for any page in the OIB. The articulation information will tell the panelists what a reasonable standard might be for the grade under consideration given the standards already established in higher and lower grades and given the requisite content-referenced interpretations. Articulation information will be presented as page numbers in the OIBs and will be used only for assisting in establishing the intermediate grade standards and not the standards for the anchor grades.

Table 5 shows proposed anchor grades for each subpanel that will set standards on multiple grades.

**Table 5. Proposed Anchor and Intermediate Grades for Vertically Linked Subjects**

Order of the Grades in which the Standards are Set				
SAGE	Benchmarks	Anchor Grade	Adjacent Grade #1	Adjacent Grade #2
Math 3-4	Grade 4 (NAEP)	G4	G3	
Math 5-6		G6	G5	
Math 7-8	Grade 8 (NAEP)	G8	G7	
ELA 3-5	Grade 4 (NAEP)	G4	G3	G5
ELA 6-8	Grade 8 (NAEP)	G8	G6	G7
ELA 9-11	Grade 11 (ACT)	G11	G9	G10
Science 4-6	Grade 4 (NAEP)	G4	G5	G6
Science 7-8	Grade 8 (NAEP)	G8	G7	

**Benchmarking**

In addition to having well-articulated Proficiency standards across grades and subjects Utah would also like to have their Proficiency standards benchmarked against college and career ready indicators. The expectation would be that students graduating from high school in Utah are college and career ready and students in the lower grades are on a trajectory to be college and career ready. AIR recommends that Utah use the approach outlined by Phillips (2011) in which the Proficiency standards are benchmarked against an external national referent such as the ACT, SAT or NAEP. Similar procedures have been used by AIR in Oregon, Hawaii and Delaware. From the available data in Utah, AIR recommends that we use the ACT and NAEP as benchmarks for the SAGE Proficiency standards. AIR also recommends that benchmark information be presented to the panelists as part of their initial training and be available to the panelists during round 1 of the standards setting.

*ACT:* Equipercetile benchmarks for the ACT college and career-ready standard on the SAGE scale can be provided. The college and career ready ACT benchmarks are as follows.

**ACT Benchmarks for Utah**

SAGE Test	ACT Grade 11	% College and Career Ready*	OIB Page Number
ELA Grade 11	Reading	41%	
Math I	Mathematics	31% (grade 11)	
Math II	Mathematics	31% (grade 11)	
Math III	Mathematics	31% (grade 11)	
Biology	Science	30% (grade 11)	
Earth Science	Science	30% (grade 11)	
Chemistry	Science	30% (grade 11)	
Physics	Science	30% (grade 11)	
<p>*50% chance of earning a B or higher in a typical first year college course, 75% chance of earning a C.</p>			

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NAEP: Equipercentile benchmarks can be provided for NAEP as follows.

<b>SAGE Test</b>	<b>NAEP</b>	<b>% Proficient</b>	<b>OIB Page Number</b>
<b>ELA Grade 4</b>	<b>Reading Grade 4</b>	<b>37% (2013)</b>	
<b>ELA Grade 8</b>	<b>Reading Grade 8</b>	<b>39% (2013)</b>	
<b>Math Grade 4</b>	<b>Math Grade 4</b>	<b>44% (2013)</b>	
<b>Math Grade 8</b>	<b>Math Grade 8</b>	<b>36% (2013)</b>	
<b>Science Grade 4</b>	<b>Science Grade 4</b>	<b>38% (2011)</b>	
<b>Science Grade 8</b>	<b>Science Grade 8</b>	<b>43% (2011)</b>	

### **SECTION 3: PREPARATION FOR THE STANDARD-SETTING WORKSHOPS**

Preparation for the standard-setting workshops includes identifying and training AIR staff for specific roles and responsibilities before, during, and after the workshops; developing and refining workshop materials; rehearsing workshop procedures; and recruiting standard-setting panelists. We cover each of these steps in the sections below.

#### **WORKSHOP SUPPORT STAFF**

Each workshop will include a *workshop leader* and a *workshop assistant*. In addition, an AIR content area specialist who is familiar with the tests for which standards are being set will participate, and AIR will confirm that a USOE staff person is on hand to answer questions and monitor proceedings of the workshop. The workshop leader will act as host for the standard-

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setting workshop by welcoming panelists, organizing them at their respective tables, and helping them feel comfortable; conduct training and practice; lead discussions that begin rounds 1 and 2; decide when to begin and end each phase of the workshop; and field questions from the panelists and ensure that timely responses are provided. An additional AIR measurement specialist may participate in parts of the workshop by, for example, responding to panelist questions and leading parts of workshop discussions. The workshop assistant will greet panelists when they arrive, register them, provide assigned materials, and ensure the security of test materials at all times. AIR content specialists will provide training on the Utah Academic Content Standards and lead activities to familiarize the panelists with test content and the alignment between test items and the content standards. The workshops will be supported by a team of psychometricians who will enter, quality check, and analyze cut score recommendations from the panelists and produce feedback information for subsequent rounds.

## **WORKSHOP MATERIALS**

### **Content Standards**

AIR content specialists will review the content standards and test specifications so that the participants are clear on what students are expected to know and be able to do in order to respond to the items they will encounter in the OIB.

### **Proficiency Level Descriptors**

#### **Ordered-Item Booklet**

Panelists will access an Ordered Item Booklet that that presents test items on which they will be setting standards, ordered by difficulty. The OIB will be accessed in AIR's Item Tracking System, and panelists will see items exactly how they appear in a live student testing environment. A printed OIB map will also accompany each OIB; this item map will help panelists navigate the OIB and will provide scoring keys for multiple choice items, and target point values for constructed response items. Stimuli (e.g., ELA passages) will be presented alongside each relevant OIB item.

#### **Training and Workshop Management Presentation Slides (following approval by USOE)**

These slides cover all concepts that panelists must internalize (e.g., the cognitive task for placing bookmarks, the response probability criterion) and all steps and reminders in the

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standard-setting process (e.g., steps for completing round 1, review of the standard-setting cognitive task, agreement and articulation information). We will adapt the slides for all panels.

### **Other Workshop Materials**

- One laptop computer per panelist, equipped to access to online test environment, and access to Ordered Item Booklets
- One LCD projector per workshop
- Pens and pencils
- Post-it notes for bookmarking
- Travel and other expense reimbursement forms for panelists to complete

### **WORKSHOP PREPARATION AND REHEARSAL**

AIR will conduct a dress rehearsal for the workshops. All AIR staff involved in the workshops will participate. A workshop leader will rehearse key steps in a standard-setting workshop (e.g., the training phase that focuses on the cognitive task for placing bookmarks, the presentation and use of discussion guiding questions for rounds 1 and 2, the explanation of feedback information, and practice in leading a discussion of feedback information) with all other AIR staff participating as panelists. We will use all workshop materials in the dress rehearsal. USOE will be invited to attend the dress rehearsal.

## **SECTION 4: THE STANDARD SETTING WORKSHOPS**

### **OVERVIEW**

We propose to set Proficiency standards by using the Bookmark procedure, which is structured to ensure that standard-setting panelists recommend cut scores on the basis of their judgment about the content knowledge and skills that each test item requires of students and the relationship of those requirements to the PLDs.

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## **WORKSHOP PROCEDURES**

### **Prior to Arriving at the Workshops**

Before convening the panels, AIR proposes to send the following documents to the participants:

- Information sheet and logistics
- Agenda
- Academic Content Standards
- PLDs

Panelists will be asked to study the academic content standards, their constituent benchmarks, and the associated performance indicators. They will also be asked to review the PLDS.

To aid the panelists as they reflect on the Proficiency levels, AIR will prepare documents providing general descriptions of each Proficiency category. These will be general definitions. For example, we would expect that a child meeting the proficient level reported under NCLB would show the level of competence expected for the grade level across content standards.

### **Staff and Leaders**

The AIR and USOE staff assigned to the workshop is listed in

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Table . Each panel will be supervised by a senior workshop leader with expertise in standard setting. Each subpanel will be staffed by a room leader, also with expertise in standard setting procedures and test development. Each room will have staff dedicated to assist with distribution and collection of materials, and accessing materials using online platforms.

AIR will conduct internal training on standard setting and the Bookmark procedure and dress rehearsals for the workshops in Washington, DC. This training is intended to ensure, to the maximum degree possible, standardization of training and procedures across the panels. Within each panel, participants will be assigned to tables as follows.

**Table 7: Staff and Table Leaders**

Date	Panel Rooms	Workshop Leader	Room Leader	Panel Temp	Senior Content & Psychometrics	Technical RA	Panelists	Table Leaders	Subject	Grades
		G. Phillips			G. Phillips	C. Kugler				
August 11-12, 2014	1	S. Ahadi	Chris Johnston	Temp 1	Stephan Ahadi	Andrew Lewis	6	2	Math	I
	2		Paul Maxon	Temp 2	Meg McMahon		6	2	Math	II
	3		John Neral	Temp 3	Stefanie McDonald		6	2	Math	III
	4		Kevin Chandler	Temp 4	Bokhee Yoon	Nicholas Kalich	11	3	Science	Biology
	5		Robert Smith	Temp 5	Josh Smith		11	3	Science	Earth Science
	6		Crystal Davidson	Temp 6	Xiaodong Hou		11	3	Science	Chemistry
	7		Erica Ajder	Temp 7			11	3	Science	Physics
August 13-15, 2014	8	S. Ahadi	Lizzie Schy	Temp 6	Stephan Ahadi	Jessica Crutchfield	11	3	ELA	3 to 5
	9		Katina Marshall	Temp 7	Kevin Dwyer		11	3	ELA	6 to 8
	10		Sean Redmond	Temp 8	Xiaodong Hou		11	3	ELA	9 to 11
	11		John Neral	Temp 1	Stephan Ahadi	Alexander Mendoza	11	3	Math	3 to 4
	12		Chris Johnston	Temp 2	Meg McMahon		11	3	Math	5 to 6
	13		Paul Maxon	Temp 3	Stefanie McDonald		11	3	Math	7 to 8
	14		Kevin Chandler	Temp 4	Bokhee Yoon, Josh Smith, Tsze Chan	Ashley Nartey	11	3	Science	4 to 6
	15		Robert Smith	Temp 5			11	3	Science	7 to 8
	Totals						150	42	Total =	192
<i>Note: Stakeholder's Meeting, Monday August 18, 2014, 9:00 am – 11:00 am</i>										

## Agenda

The timeline for completing the standard setting is exceedingly tight. We have designed a schedule and made some adjustments that enable work to be completed in three days for on-grade elementary and middle school standards, and two days for End of Course assessments, without making panelists feel unduly rushed to complete their judgmental processes. Illustrative draft agendas for the panels appear in Appendix D.

### Agenda for Elementary and Middle School Tests

#### *Day 1-Grade-Based Standards: Introductions, Training, Practice, Preparation*

Day 1 of the workshop will be devoted to introductory training and review cumulating with the review of the OIB. Panelists will first be instructed in the purpose of the standard-setting workshop and participate in a brief review of the Utah Academic Content Standards, PLDs, and OIB from which they will set standards.

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Following large-group (panel-level) training, panelists will separate into sub-panel rooms, and room leaders will walk them through the standard setting process, training participants at each step. First, panelists will participate in an operational test in the online environment, which will allow them to experience the interface students experience when taking tests. Each panelist will receive a unique set of test items, allowing the group to sample a wide range of content. Following, panels will review and parse the Proficiency Level Descriptors for the anchor grade. Then, panelists will review each item in the Ordered Item Booklet, focusing on two questions:

- *What do students who are just barely at the standard need to know and be able to do to respond successfully to this item?*
- *What makes this item more difficult than the previous items?*

Responses to these questions will help prepare individual panelists to complete the Bookmark placement task. The table discussions of these questions also will facilitate cohesion, communication, and shared understanding of the tasks and the Utah assessments.

### ***Day 2-Grade-Based Standards: Setting the Cut-Scores in the Anchor Grades***

Day 2 will be devoted to setting round 1 and 2 of the standards; for the grade-level assessments, this will be for the anchor grades. Following, these panels will begin review of PLDs and OIBs for the first intermediary grade. Day 2 will begin with training on bookmark placement, including in-depth discussion of the concepts of students who “just barely” meet the Proficiency standard, and how to use RP.67 in making judgments. Once panelists have discussed and understood their task, they will place their bookmarks for round 1, working independently. The cognitive-judgmental task of placing the bookmark is stated as follows:

*Place your bookmark on the page that two-thirds of those students who are just barely Proficient would be able to answer successfully.*

*Fewer than two-thirds of those students would be expected to respond successfully to the next item.*

*More than two-thirds of those students would be expected to respond successfully to the previous item.*

Going in to round 2, panelists will view feedback from the round 1 judgment task. Specifically, they will be provided with agreement information in the form of the page number

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on which each panelist at the table placed his or her bookmark in round 1, the median page number for the table, and the highest and lowest page numbers for panelists at that table. They will also receive the medians for each table in their standard-setting session (this will always occur in round 2 for all panels and sub-panels). In addition, panelists will review student impact data. Panelists will then discuss with one another the placement of bookmarks in the OIBs. The goal of this discussion is not to force agreement among panelists but rather to allow panelists to gain a broader understanding of the reasons their fellow panelists used to identify the cut scores. Following the group discussions, panelists will make a second and final judgment about where to place their bookmark in the OIB.

**Anchor Grade Moderation:** Following round 2 of standard setting in anchor grades (grade-level assessments only), table leaders from all panels will meet to review each panel's recommended scores. This activity will allow each panel's table leaders to evaluate their panel's bookmark placements in light of those of the other panels. The table leaders from each panel may decide to make adjustments to their own panel's recommended score but not to the other panel's recommended cut scores. This will occur after completion of the day's activities.

***Day 3-Grade-Based Standards: Setting the Cut-Scores in the Intermediary Grades (grade level assessments only)***

Elementary and middle school sub-panels will begin day 3 with a debrief of the anchor grade moderation activities and outcomes, and move into completing bookmark placement rounds 1 and 2, using interpolated cut points. ELA and Math panels will then review the Proficiency Level Descriptors and OIB for the final grade-level assessment, and finish the day by completing rounds 1 and 2 of bookmark placement, again using interpolated cut points.

**Final Moderation:** Following the completion of each panel's activities, all panel table leaders will meet to review the final outcomes of the workshop. Again, This activity will allow each panel's table leaders to evaluate their panel's bookmark placements in light of those of the other panels. The table leaders from each panel may decide to make adjustments to their own panel's recommended score but not to the other panel's recommended cut scores. This will occur after completion of the day's activities.

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## **Agenda for End of Course Assessment**

Because panels that will recommend standards for High School End of Course assessments will focus on review and recommending standards for one assessment instead of multiple, the workshop will be completed in two days. Day 1 will follow the same activities described above: panelists will become acquainted with the standard setting process, have a chance to experience the operational test in the online environment, review and parse Proficiency Level Descriptors, and finish the day by reviewing the ordered item book.

On Day 2, panelists will be trained on the mechanics of the bookmark placement task, and will recommend standards in two rounds, using discussion and impact data in judgments as described above. Following round 2 recommendations, table leaders will convene to review and moderate recommendations across courses within the same subject, and the meeting will adjourn.

### **Security Considerations**

The fundamental purpose of the security plans that are proposed in that document is to ensure that item security is not compromised. AIR will use a multitude of security approaches, from printing secure materials on green paper to issuing color-coded security badges.

In addition to the workshop materials, AIR will keep all data under the tightest security. For example, the data analysis workroom will be kept locked and/or monitored by AIR staff at all times. Each AIR staff member is responsible for his or her own computer during the evenings.

As an added precaution, AIR staff will constantly monitor entry into the participant workrooms as well as the project workroom, the data processing room, and the staff meeting room.

The reader is directed to the security plan in Appendix D for a complete discussion of all security measures being taken.

### **Evaluation of Workshop**

After all activities are completed, the workshop staff will facilitate a workshop debriefing in each sub-panel. The discussion will be focused by guiding questions that will encourage panelists to discuss their satisfaction and comfort with the workshop process and with the

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standards they recommended. The focus questions will be based on the main sections of workshop training and activities and appear as questions in the workshop evaluation form. Panelists will complete the workshop evaluation form independently. The workshop evaluation form appears in Appendix E.

### WITHIN-GRADE AND ACROSS-GRADE VERTICAL SCALE

The current plan is to report the SAGE results in some subjects on within-grade scales and other subjects on vertical scale.

- Within-Grade Scales
  - Science grades 4-8
  - Biology
  - Earth Science
  - Chemistry
  - Physics
- Across-grade vertical scales
  - ELA grades 3-11
  - Mathematics grades 3-8, Math I, Math II and Math III

It is anticipated that the calibrations for the vertical scale will come from the 2014-2015 operational field test. The vertical linking will be based on chain linking between grades. The field test design includes both forward linking items (items in the originating grade placed in the next highest contiguous grade) and backward linking (items in the originating grade placed in the next lowest contiguous grade). Both methods of linking (forward and backward) are being done for research and comparative purposes. It is anticipated that forward linking will be used for the vertical scale. Both the forward and backward linking sets will consist of about 100 items (two times the size of an operational test) that will be proportional to the blueprint in the originating grade.

### Scheduling Considerations for the Vertical Scale and Standard Setting

**Initial Extract:** An initial rubric validation would be conducted May 12-13, 2014 on all ELA and mathematics items involved in the vertical scale and about 100 items in science for each within-grade science scale. Following the rubric validation AIR will re-score the items. AIR is currently scheduled to receive a complete writing data file from the DRC on June 6, 2014. AIR will combine this file with the machine scored items and create two separate files. An *initial file* that will be fast tracked and used for scaling and standard setting, and a *final file* that will be used for all other purposes. The fast tracked file will be available June 13, 2014. Data will consist of:

1. math and ELA items involved in the vertical linking,
2. results for about 100 items (that are proportional to the blueprint) for each of the science within-grade scales,

The initial file extract will be used to

1. conduct the vertical scaling in ELA and mathematics,
2. establish the within grade scales in science,

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3. construct the ordered item booklets for standard setting,
  4. provide the impact data for standard setting,
  5. conduct the benchmarking studies for standard setting.

**Final Extract:** A full rubric validation would be conducted on June 9-13, 2014. A final extract will be available on June 27, 2014. The final extract will be used to place all remaining items on the scales determined from the initial extract. This will allow the psychometricians two weeks to calibrate all items, determine classical item statistics, fit statistics and differential item functioning and conduct the Data Review scheduled for July 7-8, 2014.

## REFERENCES

- Ferrara, S., Phillips, G., Williams, P., Leinwand, S., Mahoney, S., & Ahadi, S. *Vertically articulated performance standards: An exploratory study of inferences about achievement and growth*. In R. Lissitz (editor), *Assessing and modeling cognitive development in school: Intellectual growth and standard setting*, (pp. 31–63), JAM Press: Maple Grove, Minnesota, 2007.
- Kolen, J. K., and Brennan, R. L., *Test Equating, Scaling, and Linking: Methods and Practices*, Springer, New York, NY, 2004, page 377).
- McClarty, K.L., Way, W. D., Porter, A. C., Beimers, J. N., & Miles (2013). Evidence-based Standard Setting: Establishing a Validity Framework for Cut Scores. *Educational Researcher*, 42, (2), p. 78-88.
- Mitzel, H. C., Lewis, D. M., Patz, R. J. & Green, D. R. (2001). The Bookmark procedure: Psychological perspectives. In: G. Cizek (Ed.), *Setting performance standards: Concepts, methods and perspectives*. Mahwah, NJ: Erlbaum.
- Phillips, G. W. (2011). The Benchmark Method of Standard Setting. In Gregory J. Cizek (ed.), *Setting performance standards* (2nd edition). New York: Routledge.

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## APPENDIX A: REPORTING CATEGORIES

### SAGE Reporting

Below is a summary of the reporting categories for the three SAGE content areas, ELA, mathematics, and science. A reporting category is a portion of a test for which a student receives a score. There are sufficient items in these groupings of items to report a reliable score at the individual student level. The listing of reporting categories (below) is followed by a listing of “subcategories”. Subcategories are at a lower level in the test blueprint falling under the reporting categories. Subcategories are sub domains supporting the reporting category. Fewer items are seen by a given student in a given subcategory. Due to the small numbers of test items, reporting scores for subcategories at the student level is not recommended due to the unreliability of scores. However there is a way to provide subcategory information at an aggregate level (classes, schools, districts). Indicators of strengths and weaknesses can be produced that provide indicators of relative strengths and weaknesses. These indicators are produced by comparing observed performance on items within the subcategory with expected performance based on the overall ability estimate. At the aggregate level, when observed performance within a domain is greater than expected performance, then the reporting unit (e.g., class, school, or district) shows a relative strength in that domain. Conversely, when observed performance within a domain is below the level expected based on overall achievement, then the reporting unit shows a relative weakness in that domain.

### Utah SAGE Student Reporting Categories

#### ELA

##### Grades 3 - 11:

<b>Student Reporting Categories</b>
<b>Reading: Literature</b>
<b>Reading: Informational Text</b>
<b>Listening</b>
<b>Writing</b>
<b>Language</b>

#### Mathematics

##### Grades 3 - 5:

<b>Student Reporting Categories</b>
<b>Operations and Algebraic Thinking</b>
<b>Number and Operations in Base Ten</b>
<b>Number and Operations - Fractions</b>
<b>Measurement and Data &amp; Geometry</b>

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**Grade 6:**

<b>Student Reporting Categories</b>
<b>Ratios and Proportional Relationships</b>
<b>Number System</b>
<b>Expressions and Equations</b>
<b>Geometry &amp; Statistics and Probability</b>

**Grade 7:**

<b>Student Reporting Categories</b>
<b>Ratios and Proportional Relationships</b>
<b>Number System</b>
<b>Expressions and Equations</b>
<b>Geometry</b>
<b>Statistics and Probability</b>

**Grade 8:**

<b>Student Reporting Categories</b>
<b>Expressions and Equations</b>
<b>Functions</b>
<b>Geometry &amp; Number System</b>
<b>Statistics and Probability</b>

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**Secondary I:**

<b>Student Reporting Categories</b>
<b>Algebra</b>
<b>Number &amp; Quantities/Functions</b>
<b>Geometry</b>
<b>Statistics</b>

**Secondary II:**

<b>Student Reporting Categories</b>
<b>Algebra</b>
<b>Number &amp; Quantities</b>
<b>Functions</b>
<b>Geometry</b>
<b>Statistics &amp; Probability</b>

**Secondary III:**

<b>Student Reporting Categories</b>
<b>Number &amp; Quantities/Algebra</b>
<b>Functions</b>
<b>Trigonometric Functions &amp; Geometry</b>
<b>Statistics &amp; Probability</b>

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**Science**

**Grade 4:**

<b>Student Reporting Categories</b>
<b>Water Cycle</b>
<b>Weather</b>
<b>Rocks, Soils, and Plant Growth</b>
<b>Fossils</b>
<b>Utah Wetlands, Forests, and Deserts</b>

**Grade 5:**

<b>Student Reporting Categories</b>
<b>Chemical and Physical Changes</b>
<b>Processes that Reshape Earth's Surface</b>
<b>Magnetism</b>
<b>Electricity</b>
<b>Inheritance of Traits</b>

**Grade 6:**

<b>Student Reporting Categories</b>
<b>Moon Change Cycle</b>
<b>Earth's Tilting Axis</b>
<b>Solar System</b>
<b>Universe</b>
<b>Microorganisms</b>
<b>Light, Heat and Sound</b>

**Grade 7:**

<b>Student Reporting Categories</b>
<b>Structure of Matter</b>
<b>Properties of Matter and Earth's Structure</b>
<b>Organ, Tissue, and Cell Structure and Function</b>
<b>Effect of Inherited Traits on Survival</b>
<b>Classification Systems</b>

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**Grade 8:**

<b>Student Reporting Categories</b>
<b>Changes in Matter</b>
<b>Energy Transfers and Transformations</b>
<b>Rock and Fossil Formation</b>
<b>Energy, Force, and Motion</b>

**Earth Science:**

<b>Student Reporting Categories</b>
<b>Earth, Solar System, and Universe</b>
<b>Earth's Internal Heat and Structure</b>
<b>Atmospheric Processes, Weather, and Climate</b>
<b>Hydrosphere</b>
<b>Interaction of Earth Science and Society</b>

**Biology:**

<b>Student Reporting Categories</b>
<b>Organism Interaction</b>
<b>Cells</b>
<b>Organ Structure and Function</b>
<b>DNA</b>
<b>Evolution and Diversity</b>

**Chemistry:**

<b>Student Reporting Categories</b>
<b>Structure and Origin of Matter</b>
<b>Atoms and Energy</b>
<b>Chemical Bonds</b>
<b>Chemical Reactions</b>
<b>Equilibrium</b>
<b>Solutions</b>

**Physics:**

<b>Student Reporting Categories</b>
<b>Motion and Newton's First Law</b>
<b>Forces and Newton's second and Third Laws</b>
<b>Gravitational and Electrostatic Forces</b>
<b>Energy</b>
<b>Waves</b>

**Subcategories Falling Under Specific Student Reporting Categories**

**ELA**

**Grade 3- 11 Subcategories**

<b>READING</b>
<b>Reading Literature</b>
<b>Key Ideas and Details</b>
<b>Craft and Structure</b>
<b>Integration of Knowledge and Ideas</b>
<b>Reading Informational</b>
<b>Key Ideas and Details</b>
<b>Craft and Structure</b>
<b>Integration of Knowledge and Ideas</b>
<b>LANGUAGE</b>
<b>LISTENING</b>
<b>WRITING</b>
<b>Informative/Explanatory</b>
<b>Argument/Opinion</b>
<b>LITERACY (6-11) (Combined and Separate Report)</b>
<b>Literacy: History/Social Studies Texts</b>
<b>Literacy: Science Texts</b>
<b>Literacy: Technical Texts</b>
<b>COGNITIVE COMPLEXITY</b>

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## APPENDIX B: HIGH LEVEL PROFICIENCY LEVEL DESCRIPTORS



### SAGE Summative Proficiency Level Descriptors

Proficiency Levels:

#### 4- Highly Proficient\*

The Level 4 student is highly proficient in applying the English language arts / literacy, mathematics, and science knowledge/ skills as specified in the Utah Core State Standards.

The student generally performs significantly above the standard for their grade level/course, is able to access above grade level content, and engage in higher order thinking skills independently.

*\* For Secondary Math III and English 11, this level of performance also likely indicates students are well prepared for postsecondary success in mathematics and language arts.*

#### 3- Proficient\*\*

The Level 3 student is proficient in applying the English language arts/ literacy, mathematics, and science knowledge / skills as specified in the Utah Core State Standards.

The student generally performs at the standard for their grade level/course, is able to access grade level content, and engage in higher order thinking skills with some independence and minimal support.

*\*\* For Secondary Math III and English 11, this level of performance also likely indicates students are sufficiently prepared for postsecondary success in mathematics and language arts.*

#### 2- Approaching Proficient

The Level 2 student is approaching proficient in applying the English language arts / literacy, mathematics, and science knowledge/skills as specified in the Utah Core State Standards.

The student generally performs slightly below the standard for their grade level/course, is able to access grade level content and engage in higher order thinking skills with some independence and support.

#### 1-Below Proficient

The Level 1 student is below proficient in applying the English language arts/ literacy, mathematics, and science knowledge /skills as specified in the Utah Core State Standards.

The student generally performs significantly below the standard for their grade level/course, is likely able to partially access grade level content and engage with higher order thinking skills with extensive support.

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**APPENDIX C: DETAILED PROFICIENCY LEVEL DESCRIPTORS**

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## APPENDIX D: AGENDAS

### Agenda

#### Standard Setting for ELA 3-11 Panels

ELA 3-5

ELA 6-8

ELA 9-11

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#### DAY 1 – Wednesday, August 13th, 2014, Grades 3-11 ELA, SAGE

- 8:00 – 8:30 Orientation for Table Leaders
- 8:00 – 8:30 Registration and morning refreshments
- *Panelists receive folders, sign security affidavit*
- 8:30 – 8:45 Welcome and introductions from Utah State Office of Education (USOE)
- 8:45 – 9:45 Large group introductory training
- *Welcome and Introductions*
  - *Purpose of standard setting workshop*
  - *Description of the SAGE test design*
  - *General overview of standard setting procedures and key concepts*
    - *Proficiency Level Descriptors*
    - *“Just Barely”*
    - *Ordered Item Book*
    - *Response probability*
    - *Bookmark task*
    - *Panelist feedback and impact data*
- 9:45 – 10:00 Break, and separate into small group rooms
- 10:00 – 11:00 Panelists experience online operational test environment
- 11:00 – 11:45 Review and parsing of Proficiency Level Descriptors
- *Training on development of Proficiency Level Descriptors*
  - *Independent review of PLDs*
  - *Independent parsing of PLDs*
  - *Group review of parsed PLDs*
- 11:45 – 12:30 Lunch
- 12:30 – 1:15 Discussion of students who are “just barely” characterized by PLDs
- 1:15 – 4:30 Review of Ordered Item Book
- *Training on composition of the Ordered Item Book*
  - *Training on review of the OIB*
    - *What do students need to know and be able to do to respond correctly to each question?*
    - *Why is each item more difficult than the preceding item?*
  - *Instruction in accessing the OIB*
  - *Independent review of OIB*
- 4:30 Adjourn

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**Day 2 – Thursday, August 14, 2014, Grades 3-11 ELA, SAGE**

- 8:15 – 8:30 Registration and morning refreshments
- 8:30 – 8:45 Review panelist paperwork (reimbursement and demographic information)
- 8:45 – 10:00 Training on Bookmark Placement task
- *Review of Bookmark Placement key concepts*
    - *Proficiency Level Descriptors*
    - *Ordered Item Book*
  - *Training on “Just Barely”*
  - *Training on RP67*
  - *Training on bookmark placement judgment task, and procedure for recording bookmarks*
- 10:00 – 11:15 Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (Anchor Grades: 4, 8, and 11)
- *Review of bookmark procedures and key concepts*
  - *Completion of Bookmark Placement Readiness Form*
  - *Round 1 Bookmark Placement*
- 11:15 – 11:30 Panelist Break
- 11:30 – 12:30 Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (Anchor Grades: 4, 8, and 11)
- *Training on use of panelist agreement feedback data*
  - *Presentation and discussion of Round 1 panelist agreement feedback data*
  - *Completion of Bookmark Placement Readiness Form*
  - *Round 2 bookmark placement*
- 12:30 – 1:15 Lunch
- 1:15 – 2:45 Review and parsing of Proficiency Level Descriptors for adjacent grades 3, 7, and 10
- *Independent review of Proficiency Level Descriptors*
  - *Independent parsing of PLDs*
  - *Group review of parsed PLDs*
- 2:45 – 4:30 Review of Ordered Item Booklet for adjacent grades 3, 7 and 10
- 4:30 Adjourn for panelists not participating in Anchor Grade Moderation
- 4:30 – 5:30 Anchor Grade Moderation with all ELA table leaders
- 5:30 Adjourn for table leaders

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**Day 3 – Friday, August 14, 2014, Grades 3-11 ELA, SAGE**

8:15 – 8:30	Registration and morning refreshments
8:30 – 9:30	Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grades: 3, 7, 10) <ul style="list-style-type: none"><li>• <i>Training on use of interpolated bookmark page numbers</i><ul style="list-style-type: none"><li>○ <i>Debrief of Moderation session outcomes</i></li><li>○ <i>Presentation of interpolated bookmark page numbers</i></li><li>○ <i>Discussion of bookmark placement task for interpolated page numbers</i></li></ul></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 1 Bookmark Placement</i></li></ul>
9:30 – 9:45	Panelist Break
9:45 – 10:30	Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grades: 3, 7, 10) <ul style="list-style-type: none"><li>• <i>Presentation and discussion of Round 1 panelist feedback data</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 2 bookmark placement</i></li></ul>
10:30 – 11:30	Review and parsing of Proficiency Level Descriptors for adjacent grades 5, 6, and 9 <ul style="list-style-type: none"><li>• <i>Independent review of Proficiency Level Descriptors</i></li><li>• <i>Independent parsing of PLDs</i></li></ul> <i>Group review of parsed PLDs</i>
11:30 – 12:15	Lunch
12:15 – 2:45	Review of Ordered Item Booklet for adjacent grades 5, 6, and 9
2:45 – 3:00	Panelist Break
3:00 – 3:45	Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grades 5, 6, and 9) <ul style="list-style-type: none"><li>• <i>Presentation and discussion of Round 1 panelist feedback data</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 2 bookmark placement</i></li></ul>
3:45 – 4:00	Panelist Break
4:00 – 4:45	Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grades 5, 6, and 9) <ul style="list-style-type: none"><li>• <i>Presentation and discussion of Round 1 panelist feedback data</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 2 bookmark placement</i></li></ul>
4:45 – 5:00	Panelists complete workshop evaluations, and adjourn for panelists not participating in final moderation
5:00 – 6:00	Final Moderation with all ELA table leaders
6:00	Adjourn for table leaders

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## Agenda

### Standard Setting for High School Math Panel

Math I  
Math II  
Math III

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#### DAY 1 – Monday, August 11th, 2014, High School Math, End of Course

- 8:00 – 8:30 Orientation for Table Leaders
- 8:00 – 8:30 Registration and morning refreshments
- *Panelists receive folders, sign security affidavit*
- 8:30 – 8:45 Welcome and introductions from Utah State Office of Education (USOE)
- 8:45 – 9:45 Large group introductory training
- *Welcome and Introductions*
  - *Purpose of standard setting workshop*
  - *Description of the SAGE test design*
  - *General overview of standard setting procedures and key concepts*
    - *Proficiency Level Descriptors*
    - *“Just Barely”*
    - *Ordered Item Book*
    - *Response probability*
    - *Bookmark task*
    - *Panelist feedback and impact data*
- 9:45 – 10:00 Break, and separate into small group rooms
- 10:00 – 11:00 Panelists experience online operational test environment
- 11:00 – 11:45 Review and parsing of Proficiency Level Descriptors
- *Training on development of Proficiency Level Descriptors*
  - *Independent review of PLDs*
  - *Independent parsing of PLDs*
  - *Group review of parsed PLDs*
- 11:45 – 12:30 Lunch
- 12:30 – 1:15 Discussion of students who are “just barely” characterized by PLDs
- 1:15 – 4:30 Review of Ordered Item Book
- *Training on composition of the Ordered Item Book*
  - *Training on review of the OIB*
    - *What do students need to know and be able to do to respond correctly to each question?*
    - *Why is each item more difficult than the preceding item?*
  - *Instruction in accessing the OIB*
  - *Independent review of OIB*
- 4:30 Adjourn

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**Day 2 – Tuesday, August 12, 2014, High School Math, End Of Course**

8:15 – 8:30	Registration and morning refreshments
8:30 – 8:45	Review panelist paperwork (reimbursement and demographic information)
8:45 – 10:00	Training on Bookmark Placement task <ul style="list-style-type: none"><li>• <i>Review of Bookmark Placement key concepts</i><ul style="list-style-type: none"><li>○ <i>Proficiency Level Descriptors</i></li><li>○ <i>Ordered Item Book</i></li></ul></li><li>• <i>Training on “Just Barely”</i></li><li>• <i>Training on RP67</i></li><li>• <i>Training on bookmark placement judgment task, and procedure for recording bookmarks</i></li></ul>
10:00 – 11:15	Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient <ul style="list-style-type: none"><li>• <i>Review of bookmark procedures and key concepts</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 1 Bookmark Placement</i></li></ul>
11:15 – 11:30	Panelist Break, and concurrent production of feedback data
11:30 – 12:30	Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient <ul style="list-style-type: none"><li>• <i>Training on use of panelist agreement feedback data</i></li><li>• <i>Presentation and discussion of Round 1 panelist agreement feedback data</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 2 bookmark placement</i></li></ul>
12:30 – 1:15	Lunch, and Adjourn for table leaders not participating in Moderation
1:15 – 2:15	Moderation with table leaders
2:15	Adjourn

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## Agenda

### Standard Setting for High School Science Panel

Biology  
Earth Science  
Chemistry  
Physics

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#### DAY 1 – Monday, August 11th, 2014, High School Science, End of Course

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- 8:00 – 8:30 Orientation for Table Leaders
- 8:00 – 8:30 Registration and morning refreshments
- *Panelists receive folders, sign security affidavit*
- 8:30 – 8:45 Welcome and introductions from Utah State Office of Education (USOE)
- 8:45 – 9:45 Large group introductory training
- *Welcome and Introductions*
  - *Purpose of standard setting workshop*
  - *Description of the SAGE test design*
  - *General overview of standard setting procedures and key concepts*
    - *Proficiency Level Descriptors*
    - *“Just Barely”*
    - *Ordered Item Book*
    - *Response probability*
    - *Bookmark task*
    - *Panelist feedback and impact data*
- 9:45 – 10:00 Break, and separate into small group rooms
- 10:00 – 11:00 Panelists experience online operational test environment
- 11:00 – 11:45 Review and parsing of Proficiency Level Descriptors
- *Training on development of Proficiency Level Descriptors*
  - *Independent review of PLDs*
  - *Independent parsing of PLDs*
  - *Group review of parsed PLDs*
- 11:45 – 12:30 Lunch
- 12:30 – 1:15 Discussion of students who are “just barely” characterized by PLDs
- 1:15 – 4:30 Review of Ordered Item Book
- *Training on composition of the Ordered Item Book*
  - *Training on review of the OIB*
    - *What do students need to know and be able to do to respond correctly to each question?*
    - *Why is each item more difficult than the preceding item?*
  - *Instruction in accessing the OIB*
  - *Independent review of OIB*
- 4:30 Adjourn

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**Day 2 – Tuesday, August 12, 2014, High School Science, SAGE**

8:15 – 8:30	Registration and morning refreshments
8:30 – 8:45	Review panelist paperwork (reimbursement and demographic information)
8:45 – 10:00	Training on Bookmark Placement task <ul style="list-style-type: none"><li>• <i>Review of Bookmark Placement key concepts</i><ul style="list-style-type: none"><li>○ <i>Proficiency Level Descriptors</i></li><li>○ <i>Ordered Item Book</i></li></ul></li><li>• <i>Training on “Just Barely”</i></li><li>• <i>Training on RP67</i></li><li>• <i>Training on bookmark placement judgment task, and procedure for recording bookmarks</i></li></ul>
10:00 – 11:15	Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient <ul style="list-style-type: none"><li>• <i>Review of bookmark procedures and key concepts</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 1 Bookmark Placement</i></li></ul>
11:15 – 11:30	Panelist Break, and concurrent production of feedback data
11:30 – 12:30	Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient <ul style="list-style-type: none"><li>• <i>Training on use of panelist agreement feedback data</i></li><li>• <i>Presentation and discussion of Round 1 panelist agreement feedback data</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 2 bookmark placement</i></li></ul>
12:30 – 1:15	Lunch, and Adjourn for table leaders not participating in Moderation
1:15 – 2:15	Moderation with table leaders
2:15	Adjourn

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## Agenda

### Standard Setting for Math 3-8 Panels

Sub-Panel A: 3-4 Math

Sub-Panel B: 5-6 Math

Sub-Panel C: 7-8 Math

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#### DAY 1 – Wednesday, August 13th, 2014, Grades 3-8 Math, SAGE

- 8:00 – 8:30 Orientation for Table Leaders
- 8:00 – 8:30 Registration and morning refreshments
- *Panelists receive folders, sign security affidavit*
- 8:30 – 8:45 Welcome and introductions from Utah State Office of Education (USOE)
- 8:45 – 9:45 Large group introductory training
- *Welcome and Introductions*
  - *Purpose of standard setting workshop*
  - *Description of the SAGE test design*
  - *General overview of standard setting procedures and key concepts*
    - *Proficiency Level Descriptors*
    - *“Just Barely”*
    - *Ordered Item Book*
    - *Response probability*
    - *Bookmark task*
    - *Panelist feedback and impact data*
- 9:45 – 10:00 Break, and separate into small group rooms
- 10:00 – 11:00 Panelists experience online operational test environment
- 11:00 – 11:45 Review and parsing of Proficiency Level Descriptors
- *Training on development of Proficiency Level Descriptors*
  - *Independent review of PLDs*
  - *Independent parsing of PLDs*
  - *Group review of parsed PLDs*
- 11:45 – 12:30 Lunch
- 12:30 – 1:15 Discussion of students who are “just barely” characterized by PLDs
- 1:15 – 4:30 Review of Ordered Item Book
- *Training on composition of the Ordered Item Book*
  - *Training on review of the OIB*
    - *What do students need to know and be able to do to respond correctly to each question?*
    - *Why is each item more difficult than the preceding item?*
  - *Instruction in accessing the OIB*
  - *Independent review of OIB*
- 4:30 Adjourn

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**Day 2 – Thursday, August 14, 2014, Grades 3-8 Math, SAGE**

- 8:15 – 8:30 Registration and morning refreshments
- 8:30 – 8:45 Review panelist paperwork (reimbursement and demographic information)
- 8:45 – 10:00 Training on Bookmark Placement task
- *Review of Bookmark Placement key concepts*
    - *Proficiency Level Descriptors*
    - *Ordered Item Book*
  - *Training on “Just Barely”*
  - *Training on RP67*
  - *Training on bookmark placement judgment task, and procedure for recording bookmarks*
- 10:00 – 11:15 Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (Anchor Grades: 4, 5, and 8)
- *Review of bookmark procedures and key concepts*
  - *Completion of Bookmark Placement Readiness Form*
  - *Round 1 Bookmark Placement*
- 11:15 – 11:30 Panelist Break
- 10:00 – 11:00 Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (Anchor Grades: 4, 5, and 8)
- *Training on use of panelist agreement feedback data*
  - *Presentation and discussion of Round 1 panelist agreement feedback data*
  - *Completion of Bookmark Placement Readiness Form*
  - *Round 2 bookmark placement*
- 11:30 – 12:30 Lunch
- 12:30 – 1:15 Review and parsing of Proficiency Level Descriptors for adjacent grades 3, 6, and 7
- *Independent review of Proficiency Level Descriptors*
  - *Independent parsing of PLDs*
  - *Group review of parsed PLDs*
- 1:15 – 2:45 Review of Ordered Item Booklet for adjacent grades 3, 6 and 7
- 2:45 – 4:30 Review of Ordered Item Book
- *Training on composition of the Ordered Item Book*
  - *Training on review of the OIB*
    - *What do students need to know and be able to do to respond correctly to each question?*
    - *Why is each item more difficult than the preceding item?*
  - *Instruction in accessing the OIB*
  - *Independent review of OIB*
- 4:30 Adjourn for panelists not participating in Anchor Grade Moderation
- 4:30 – 5:30 Anchor Grade Moderation with all Math table leaders
- 5:30 Adjourn for table leaders

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**Day 3 – Friday, August 14, 2014, Grades 3-8 Math, SAGE**

- 8:15 – 8:30 Registration and morning refreshments
- 8:30 – 9:30 Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grades: 3, 6, and 7)
- *Training on use of interpolated bookmark page numbers*
    - *Debrief of Moderation session outcomes*
    - *Presentation of interpolated bookmark page numbers*
    - *Discussion of bookmark placement task for interpolated page numbers*
  - *Completion of Bookmark Placement Readiness Form*
  - *Round 1 Bookmark Placement*
- 9:30 – 9:45 Panelist Break
- 9:45 – 10:30 Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grades: 3, 6, and 7)
- *Presentation and discussion of Round 1 panelist feedback data*
  - *Completion of Bookmark Placement Readiness Form*
  - *Round 2 bookmark placement*
- 10:30 – 11:30 Panelists complete workshop evaluations, and adjourn for panelists not participating in final moderation
- 11:30 – 12:15 Lunch
- 12:15 – 1:15 Final Moderation with all Math table leaders
- 1:15 Adjourn for table leaders

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## Agenda

### Standard Setting for Science 4-8 Panels

Science 4-6

Science 7-8

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#### DAY 1 – Wednesday, August 13th, 2014, Grades 4-8 Science, SAGE

- 8:00 – 8:30 Orientation for Table Leaders
- 8:00 – 8:30 Registration and morning refreshments
- *Panelists receive folders, sign security affidavit*
- 8:30 – 8:45 Welcome and introductions from Utah State Office of Education (USOE)
- 8:45 – 9:45 Large group introductory training
- *Welcome and Introductions*
  - *Purpose of standard setting workshop*
  - *Description of the SAGE test design*
  - *General overview of standard setting procedures and key concepts*
    - *Proficiency Level Descriptors*
    - *“Just Barely”*
    - *Ordered Item Book*
    - *Response probability*
    - *Bookmark task*
    - *Panelist feedback and impact data*
- 9:45 – 10:00 Break, and separate into small group rooms
- 10:00 – 11:00 Panelists experience online operational test environment
- 11:00 – 11:45 Review and parsing of Proficiency Level Descriptors
- *Training on development of Proficiency Level Descriptors*
  - *Independent review of PLDs*
  - *Independent parsing of PLDs*
  - *Group review of parsed PLDs*
- 11:45 – 12:30 Lunch
- 12:30 – 1:15 Discussion of students who are “just barely” characterized by PLDs
- 1:15 – 4:30 Review of Ordered Item Book
- *Training on composition of the Ordered Item Book*
  - *Training on review of the OIB*
    - *What do students need to know and be able to do to respond correctly to each question?*
    - *Why is each item more difficult than the preceding item?*
  - *Instruction in accessing the OIB*
  - *Independent review of OIB*
- 4:30 Adjourn

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**Day 2 – Thursday, August 14, 2014, Grades 4-8 Science, SAGE**

- 8:15 – 8:30 Registration and morning refreshments
- 8:30 – 8:45 Review panelist paperwork (reimbursement and demographic information)
- 8:45 – 10:00 Training on Bookmark Placement task
- *Review of Bookmark Placement key concepts*
    - *Proficiency Level Descriptors*
    - *Ordered Item Book*
  - *Training on “Just Barely”*
  - *Training on RP67*
  - *Training on bookmark placement judgment task, and procedure for recording bookmarks*
- 10:00 – 11:15 Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (Anchor Grades: 4 and 8)
- *Review of bookmark procedures and key concepts*
  - *Completion of Bookmark Placement Readiness Form*
  - *Round 1 Bookmark Placement*
- 11:15 – 11:30 Panelist Break
- 11:30 – 12:30 Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (Anchor Grades: 4 and 8)
- *Training on use of panelist agreement feedback data*
  - *Presentation and discussion of Round 1 panelist agreement feedback data*
  - *Completion of Bookmark Placement Readiness Form*
  - *Round 2 bookmark placement*
- 12:30 – 1:15 Lunch
- 1:15 – 2:45 Review and parsing of Proficiency Level Descriptors for adjacent grades 5 and 7
- *Independent review of Proficiency Level Descriptors*
  - *Independent parsing of PLDs*
  - *Group review of parsed PLDs*
- 2:45 – 4:30 Review of Ordered Item Booklet for adjacent grades 5 and 7
- 4:30 Adjourn for panelists not participating in Anchor Grade Moderation
- 4:30 – 5:30 Anchor Grade Moderation with all Science table leaders
- 5:30 Adjourn for table leaders

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**Day 3 – Friday, August 14, 2014, Grades 3-11 ELA, SAGE**

8:15 – 8:30	Registration and morning refreshments
8:30 – 9:30	Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grades: 5 and 7) <ul style="list-style-type: none"><li>• <i>Training on use of interpolated bookmark page numbers</i><ul style="list-style-type: none"><li>○ <i>Debrief of Moderation session outcomes</i></li><li>○ <i>Presentation of interpolated bookmark page numbers</i></li><li>○ <i>Discussion of bookmark placement task for interpolated page numbers</i></li></ul></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 1 Bookmark Placement</i></li></ul>
9:30 – 9:45	Panelist Break
9:45 – 10:30	Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grades: 5 and 7) <ul style="list-style-type: none"><li>• <i>Presentation and discussion of Round 1 panelist feedback data</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 2 bookmark placement</i></li></ul>
10:30 – 11:30	Review and parsing of Proficiency Level Descriptors for adjacent grade 6 <ul style="list-style-type: none"><li>• <i>Independent review of Proficiency Level Descriptors</i></li><li>• <i>Independent parsing of PLDs</i></li><li>• <i>Group review of parsed PLDs</i></li></ul> <p>Panelists for grades 7-8 complete workshop evaluations, and adjourn for panelists not participating in final moderation</p>
11:30 – 12:15	Lunch
12:15 – 2:45	Review of Ordered Item Booklet for adjacent grade 6
2:45 – 3:00	Panelist Break
3:00 – 3:45	Round 1 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grade 6) <ul style="list-style-type: none"><li>• <i>Presentation and discussion of Round 1 panelist feedback data</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 2 bookmark placement</i></li></ul>
3:45 – 4:00	Panelist Break
4:00 – 4:45	Round 2 bookmark placement for Proficient, Approaching Proficient, and Highly Proficient (adjacent grade 6) <ul style="list-style-type: none"><li>• <i>Presentation and discussion of Round 1 panelist feedback data</i></li><li>• <i>Completion of Bookmark Placement Readiness Form</i></li><li>• <i>Round 2 bookmark placement</i></li></ul>
4:45 – 5:00	Panelists complete workshop evaluations, and adjourn for panelists not participating in final moderation
5:00 – 6:00	Final Moderation with all Science table leaders
6:00	Adjourn for table leaders

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## Illustrative Agenda for Stakeholders Meeting

9:00 AM –  
11:00 AM

### Stakeholders Meeting – Monday, August 18, 2014

- *Brief review of standard setting procedures*
- *Review of Proficiency Level Descriptors*
- *Review of impact data*
- *Presentation of recommended standards and impact*
- *Table Leader reflection on standard setting procedures*
- *Stakeholders discussion of the recommended standards and impact*
- *Stakeholders make recommendations for moderating standards*

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## **APPENDIX E: SECURITY PLAN**

The security of materials used during the standard-setting workshops is critical. For this reason, AIR's security plan begins during the preparation for the workshops and concludes with the storage of materials following the workshops. The plan is based on strict guidelines that are embedded throughout all activities related to the standard-setting process.

Fundamental to ensuring the security of materials is the training of AIR staff so that all staff members implement the same security procedures. By extension, the training of all participants in the standard-setting workshops on the security protocols will be critical to ensuring the security of all sensitive assessment materials. AIR expects to provide training for workshop panelists at the initial large-group training sessions. Additionally, table leaders will receive specialized training in the monitoring of secure materials during workshop sessions.

### **Security Procedures**

AIR, with support from USOE, will implement numerous security procedures for the standard-setting workshops. USOE will approve all the elements of this security plan. Once the elements are approved, AIR will implement all the security activities described in the remainder of this document.

These security procedures are indicated below.

#### **Prior to the workshop**

- It is critical for all AIR staff to be fully versed in the security arrangements, because each AIR staff member is responsible for contributing to the security of the documents. Therefore, all participating AIR staff will be trained in the security procedures prior to the workshops.
- The AIR staff attending the meeting will monitor all AIR staff members who have access to the rooms used for standard setting. Janitorial staff will not be allowed to

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enter any rooms used for standard setting with secure materials, unless an AIR staff member is present.

- Numerous documents will be referenced during the workshops, some of which are considered secure materials. To facilitate the monitoring of documents, all secure materials will be printed on green paper for easy identification.
- All secure materials will be numbered for tracking purposes, with identification numbers assigned to specific panelists. Assigning specific documents to each panelist will allow for the tracking and accounting of all documents at any time during the standard-setting process.
- Prior to the workshops, table leaders will receive special training in the management of secure materials. In leading panelists through the standard-setting process, table leaders are responsible for ensuring that all materials remain at the table. They are also responsible for the inventory of secure materials at the end of each session.

**During the workshop:**

- Name badges will be color-coded to indicate clearance levels (i.e., access to rooms). They will be made available for standard-setting participants, AIR staff, USOE staff, and any observers approved in advance by USOE. Color-coded name badges enable AIR staff to quickly identify anyone not approved for access to a particular room and to direct participants and observers to the appropriate rooms.
- Only AIR staff members will be authorized to open and close the rooms used for standard setting each day.
- At the start of each workshop, AIR staff will conduct training on the importance of test security. As part of this training, AIR staff will instruct panelists on following security procedures regarding workshop materials.
- AIR staff will remind panelists of the security procedures at the start of each day and after any significant break in standard-setting activities.
- Following training on test security, it is critical to document panelists' understanding of an agreement to security procedures. For this reason, all panelists will be required

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to sign an affidavit of nondisclosure prior to engaging in standard-setting activities. The affidavit clearly states that participants will not

- (i) reveal bibliographic information or content of any passages considered for use on the Utah assessments;
  - (ii) reveal the content of any Utah assessment items;
  - (iii) reveal the content of any secure material or information from the Utah assessments or from the workshop;
  - (iv) disclose any individual or group recommended Proficiency standards; and
  - (v) disclose any student performance data used in the workshop.
- All materials will be maintained in a locked workroom when not in use during the workshops. This room will be near the standard-setting workrooms. Maintaining materials in a single location will ensure their security and facilitate tracking of all materials.
  - All materials will be logged out from the workroom at the start of each day and logged back in at the end of each day, as necessary. This room and the tracking of materials will be managed by AIR staff. Additionally, only AIR staff will be allowed to log materials in and out of the workroom.
  - Secure test and non-test materials (e.g., item booklets, item maps, anchor papers, and passages) will be used only in the relevant panel conference rooms. When not in use, these materials will be returned to the workroom for storage.
  - Exits in each panel conference room will be minimized as allowable by the fire code. Reducing room accessibility, and thus unauthorized entry, will facilitate the monitoring of materials.
  - During breaks (e.g., lunch), an AIR staff member will be assigned to each panel conference room to ensure the security of the standard-setting materials. No panel conference room will be left unattended by AIR staff while secure materials are present.
  - Table leaders will account for panelists' materials at the beginning and end of each session. Table leaders will be provided a sign-in/sign-out sheet to inventory panelists' materials.

- 
- AIR will allow observers entry to the standard-setting workshops using an USOE-approved list of observers. This list will specify clearance levels for each observer for each day.
  - AIR staff will be assigned to panel conference rooms to carefully monitor exits and ensure the security of materials at all times. This monitoring will be heightened during peak transition times (e.g., scheduled breaks, lunch).

**Following the workshop:**

- All standard-setting materials will be stored or destroyed according to USOE direction. Any materials not immediately destroyed following the standard-setting workshops will be stored in a secure location at AIR.
- For archival purposes, at least one copy of each set of standard-setting materials will be retained by AIR.

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**AFFIDAVIT OF NONDISCLOSURE**  
*Standard-Setting Workshop*

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Panel

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Workshop Dates

I, \_\_\_\_\_, affirm that during and after the standard-setting workshop I will not

- (a) reveal bibliographic information or content of any passages considered for use on the Utah assessments;
- (b) reveal the content of any items considered for use on the Utah assessments;
- (c) reveal the content of any secure material or information from the Utah assessments or from the workshop;
- (d) disclose any individual or group recommended Proficiency standards; and
- (e) disclose any student performance data used within the workshop.

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Date

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Signature

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**APPENDIX F: WORKSHOP EVALUATION FORM**

**MEETING EVALUATION**

[insert meeting name] Committee Meeting

[insert meeting date]

*We would like your input on the committee meeting so we can use the information in preparing future meetings. Please check your responses and/or provide your comments from question 1 to 6. Questions 7 and 8 are open-ended questions. Please be as specific as you can in responding to questions 7 and 8. We appreciate your feedback.*

Name (optional): \_\_\_\_\_

**1. The meeting was well organized.**  Yes  No  NA

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2. The presentations made by USOE and AIR were clear and helpful.**  Yes  No  NA

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**3. USOE and AIR staff knew the material.**  Yes  No  NA

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**4. The committee was allowed to make recommendations and decisions.**  Yes  No  NA

Comments: \_\_\_\_\_

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**5. The committee was given enough time to complete a thorough review of the material presented.**       Yes    No    NA

Comments: \_\_\_\_\_

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**6. The meeting facilities were appropriate.**       Yes    No    NA

Comments: \_\_\_\_\_

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**7. What were the most positive aspects of the meeting? Please be specific.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**8. What suggestions do you have for future meetings? Please be specific.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Thank you for taking the time to provide this feedback.*