Oklahoma Alternate Assessment Program (OAAP) Rubrics

EOI Algebra I

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2013–2014

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Oklahoma Alternate Assessment Program
Mapping Cut Scores from the 4-point Scale to the 6-point Scale
August 2013

Background

The Oklahoma Alternate Assessment Program (OAAP) Portfolio assessment is designed to assess students with the most significant cognitive disabilities. The Oklahoma State Department of Education (OSDE) has received feedback from educators regarding access limitations to required assessment items collected for the OAAP portfolio assessment.

In order to measure a broader range of performance, the OSDE decided to incorporate two lower score levels into the existing 4-point scale. The new scale, a 6-point scale, will have a scoring rubric that captures the performance of students functioning at extremely low levels of ability; hence, measuring the growth of this group of students. This method, while providing access to students functioning at lower levels, also satisfies Federal requirements for measuring grade-level academic content standards.

The OSDE made changes to the task specifications/rubrics as follows:

- created new score points of 1 and 2;
- changed the scoring range from *1–4* to *1–6;*
- increased the existing score points by moving 1 to 3, 2 to 4, 3 to 5, and 4 to 6.

Even with the rubric extension, the same achievement standards are required for students to earn a Proficient score on the assessment. In other words, the performance level descriptors, which were derived from the expectations for student performance and guide the establishment of cut scores during standard setting, remain the same. Maintaining expectations of the existing performance levels removes the need for additional standard setting. In essence, score levels 1 and 2 in the new scoring rubric are added into the Unsatisfactory performance level. The section below describes the method and result of mapping the current cut scores to the new 6-point scale.

Method

From a scaling viewpoint, adding two score points below the existing scale results in a simple linear transfer of the scale by two (2) points. Those who would receive a score of three (3) points on the 4-point scale will now earn five (5) points on the 6-point scale. This linear relationship between the old and new scale presents a simple mapping solution: the new cut scores are computed by multiplying the number of objectives tested on a subject by two (2) score points and adding this product to the old cut score. The equation is as follows:

$$\text{New Cut Score} = \text{Old Cut Score} + [\text{Number of Objectives X } 2]$$

For example, reading grade 3 has four (4) tasks that measure five (5) objectives. The maximum possible score on the 4-point scale is 20 points. The reading grade 3 cut scores for Limited Knowledge, Proficient, and Advanced levels are 8, 12, and 18, respectively (see Table 1). On a 6-point scale, the maximum possible reading grade 3 score becomes 30 points. When mapping the cut scores to the 6-point scale, the cut scores become 18, 22, and 28, respectively. For example,

$$\text{New cut score} = 8 + (5 \text{ X } 2) = 18$$

In this example, both the maximum possible score and the cut scores all shift by 10 points; since the number of objectives is multiplied by 2.

This method was validated through an examination of the impact data (percentage of students in each performance level) before and after the rubric and cut score transformations. A simulation study was conducted to compare the impact data when transforming cut scores from the 4-point scale to the

6-point scale. The results were identical—the percent classified into each of the performance levels was exactly the same. The mathematical explanation for this is if, for example, a student earns 16 points on the reading grade 3 test on the 4-point scale, this student is at the Proficient level (cut score of 12). After shifting to the 6-point scale, this student's new score is 26 points and will still be classified in the Proficient level (transformed cut score of 22). In sum, because the raw scores and cut scores are transferred by the same constant, their spatial relationship remains the same.

Figure 1 demonstrates the mathematical association of the scale change using reading grade 3 as an example. Figure 1 shows that raw scores of 0 through 20 on the 4-point scale become 10 through 30 on the 6-point scale. The cut scores (8, 12 and 18 on the 4-point scale) shift in the same manner as raw scores (18, 22, and 28). The linear transformation maintains relations between raw scores and cut scores; hence, maintaining the integrity of achievement standards.

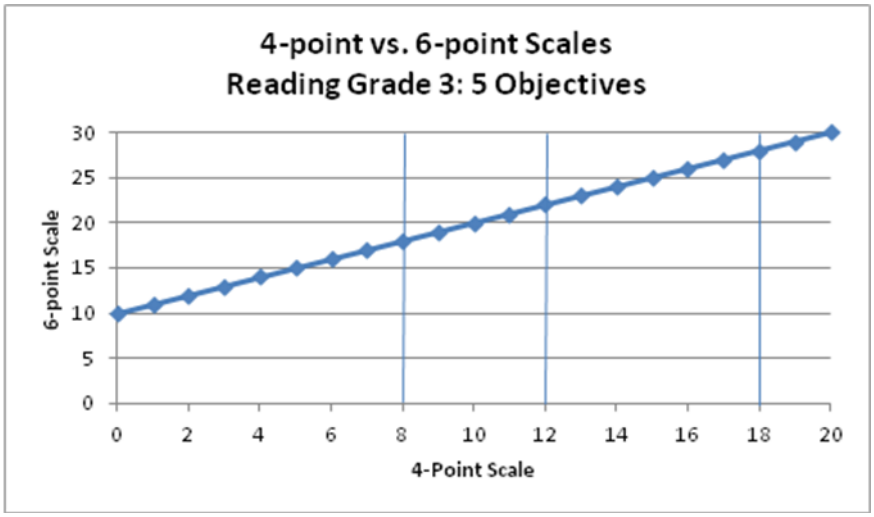

Figure 1: Relation between the 4-point and 6-point Scales

Summary

As a consequence of the above analyses, Pearson recommended moving from the 4-point scale to the 6-point scale by adding two points at the bottom of the scale and shifting the existing points by 2 and following the suggested methodology for transforming the cut scores. The existing cut scores for all OAAP subjects and grades on the 4-point and 6-point scales are presented in Table 1.

Table 1: Cut Scores on the 4-point and 6-point Scales

Subject	Grade	Number of Tasks	4-point Cut Scores			6-point Cut Scores		
			LK	Pro	Adv	LK	Pro	Adv
Math	3	5	8	12	18	18	22	28
	4	6	10	16	21	22	28	33
	5	5	7	12	17	17	22	27
	6	6	9	15	23	21	27	35
	7	5	6	13	19	16	23	29
	8	5	7	13	19	17	23	29
Reading	3	5	6	12	18	16	22	28
	4	5	6	11	17	16	21	27
	5	4	5	9	14	13	17	22
	6	4	5	10	14	13	18	22
	7	6	8	14	20	20	26	32
	8	6	8	14	21	20	26	33
Science	5	7	10	16	25	24	30	39
	8	9	14	22	32	32	40	50
Social Studies	5	8	13	20	29	29	36	45
	7	5	8	12	18	18	22	28
	8	6	9	15	22	21	27	34
Writing	5	5	5	11	18	15	21	28
	8	4	7	11	15	15	19	23
Algebra I	HS	4	6	10	15	14	18	23
Algebra II	HS	3	4	8	11	10	14	17
Biology	HS	10	16	25	35	36	45	55
English II	HS	9	14	22	31	32	40	49
English III	HS	7	10	17	25	24	31	39
Geometry	HS	4	5	10	15	13	18	23
U.S. History	HS	8	12	21	30	28	37	46

Based on peer review (consisting of experts in the fields of standards and assessment), the Oklahoma State Department of Education (OSDE) decided to increase the amount of videos included as part of the evidence to be collected by teachers for the OAAP Portfolio test. Video provides evidence that the task being performed aligns to the content/process standards being assessed. This provides an added measure to ensure content validity in the assessment. It minimizes bias and allows scorers to accurately assess the knowledge and skills of the student. For these reasons, the inclusion of videos signified a major improvement in the assessment. In addition to using the videos as evidence of student performance, the OSDE also uses them for monitoring of appropriate accommodations.

When you see the symbol below, a piece of video evidence is **required**.

End of Instruction (EOI)

Algebra I

EOI Algebra I		
Standard Measured	**Number Sense and Algebraic Operations**	**A.1**
Task Specification	The student will identify dependent and independent variables.	

Objective: Dependent and independent variables **(A.1)**

6 points	Identify the difference between the dependent and the independent variable in a problem in 3 out of 4 trials.
5 points	Identify dependent and independent variables in 3 out of 4 trials.
4 points	Identify two variables in a given word problem in 3 out of 4 trials.
3 points	Identify a variable in 3 out of 4 trials.
2 points	Respond when exposed to a variable in 3 out of 4 trials.
1 point	React when exposed to a variable in 3 out of 4 trials.
Total points possible	**6**

EOI Algebra I		
Standard Measured	**Number Sense and Algebraic Operations**	**A.1**
Task Specification	The student will use numbers to describe the relationship in a set of data.	

Objective: Relationships in data **(A.1)**

6 points	Use a formula to solve a problem in 3 out of 4 trials.
5 points	Use numbers to describe the relationship in a set of data in 3 out of 4 trials.
4 points	Identify relationships in a set of data in 3 out of 4 trials.
3 points	Identify a set of data in 3 out of 4 trials.
2 points	Respond when exposed to a set of data in 3 out of 4 trials.
1 point	React when exposed to a set of data in 3 out of 4 trials.
Total points possible	**6**

Respond refers to any attempted interaction from the student upon exposure to the activity (e.g., assisting, feeling, observing, listening).
React refers to any observable change caused by exposure to the activity (e.g., startle reflex, opening eyes, turning head towards sound or touch).

EOI Algebra I		
Standard Measured	**Relations and Functions**	**A.2**
Task Specification	The student will translate word phrases or sentences into expressions.	

Objective: Equations **(A.2)**

6 points	Evaluate expressions they have translated from word phrases or sentences in 3 out of 4 trials.
5 points	Translate word phrases or sentences into expressions in 3 out of 4 trials.
4 points	Identify different parts of an expression and identify the different terms and operations in 3 out of 4 trials.
3 points	Identify the words for addition, subtraction, multiplication, and division in an expression in 3 out of 4 trials.
2 points	Respond when exposed to the words for addition, subtraction, multiplication, and division in an expression in 3 out of 4 trials.
1 point	React when exposed to the words for addition, subtraction, multiplication, and division in an expression in 3 out of 4 trials.
Total points possible	**6**

EOI Algebra I		
Standard Measured	**Data Analysis, Probability, and Statistics**	**A.3**
Task Specification	The student will collect and display data involving two variables on a graph.	

Objective: Data **(A.3)**

6 points	Collect and display data involving two variables on a graph and make predictions based on the data collected in 3 out of 4 trials.
5 points	Collect and display data involving two variables on a graph in 3 out of 4 trials.
4 points	Identify changes in a graph involving two variables in 3 out of 4 trials.
3 points	Identify different types of graphs in 3 out of 4 trials.
2 points	Respond when exposed to different types of graphs in 3 out of 4 trials.
1 point	React when exposed to different types of graphs in 3 out of 4 trials.
Total points possible	**6**

Respond refers to any attempted interaction from the student upon exposure to the activity (e.g., assisting, feeling, observing, listening).
React refers to any observable change caused by exposure to the activity (e.g., startle reflex, opening eyes, turning head towards sound or touch).

End of Instruction (EOI)

Algebra II

EOI Algebra II		
Standard Measured	**Number Sense and Algebraic Operations**	**AII.1**
Task Specification	The student will multiply and divide monomials with the same bases.	

Objective: Algebraic expressions **(AII.1)**

6 points	Identify and apply the rules of multiplying and dividing monomials with the same bases in 3 out of 4 trials.
5 points	Multiply and divide monomials with the same bases in 3 out of 4 trials.
4 points	Identify exponential expressions that have the same and different bases in 3 out of 4 trials.
3 points	Identify the base and exponent of an exponential expression in 3 out of 4 trials.
2 points	Respond when exposed to the base and exponent of an exponential expression in 3 out of 4 trials.
1 point	React when exposed to the base and exponent of an exponential expression in 3 out of 4 trials.
Total points possible	**6**

EOI Algebra II		
Standard Measured	**Relations and Functions**	**AII.2**
Task Specification	The student will use graphs to answer questions about situations modeled by equations.	

Objective: Graphs **(AII.2)**

6 points	Use graphs to make inferences and predictions about situations modeled by equations in 3 out of 4 trials.
5 points	Use graphs to answer questions about situations modeled by equations in 3 out of 4 trials.
4 points	Use graphs to model a situation in 3 out of 4 trials.
3 points	Identify an increase or decrease in a graph in 3 out of 4 trials.
2 points	Respond when exposed to an increase or decrease in a graph in 3 out of 4 trials.
1 point	React when exposed to an increase or decrease in a graph in 3 out of 4 trials.
Total points possible	**6**

Respond refers to any attempted interaction from the student upon exposure to the activity (e.g., assisting, feeling, observing, listening).
React refers to any observable change caused by exposure to the activity (e.g., startle reflex, opening eyes, turning head towards sound or touch).

EOI Algebra II		
Standard Measured	**Data Analysis, Probability, and Statistics**	**AII.3**
Task Specification	The student will collect data involving two variables and display the data on a scatterplot.	

Objective: Data	**(AII.3)**
6 points	Collect data involving two variables and display the data on a scatterplot and make inferences and predictions based on these data in 3 out of 4 trials.
5 points	Collect data involving two variables and display the data on a scatterplot in 3 out of 4 trials.
4 points	Collect data involving two variables in 3 out of 4 trials.
3 points	Identify changes in data on a scatterplot in 3 out of 4 trials.
2 points	Respond when exposed to changes in data on a scatterplot in 3 out of 4 trials.
1 point	React when exposed to changes in data on a scatterplot in 3 out of 4 trials.
Total points possible	**6**

Respond refers to any attempted interaction from the student upon exposure to the activity (e.g., assisting, feeling, observing, listening).
React refers to any observable change caused by exposure to the activity (e.g., startle reflex, opening eyes, turning head towards sound or touch).

End of Instruction (EOI)

Geometry

EOI Geometry		
Standard Measured	**Logical Reasoning**	**G.1**
Task Specification	The student will use deductive reasoning to follow logical arguments.	

Objective: Deductive reasoning **(G.1)**

6 points	Use deductive reasoning to identify logical/illogical arguments in 3 out of 4 trials.
5 points	Use deductive reasoning to follow logical arguments in 3 out of 4 trials.
4 points	Draw conclusions based on given information in 3 out of 4 trials.
3 points	Recognize if/then statements in 3 out of 4 trials.
2 points	Respond when exposed to if/then statements in 3 out of 4 trials.
1 point	React when exposed to if/then statements in 3 out of 4 trials.
Total points possible	**6**

EOI Geometry		
Standard Measured	**Properties of Two-Dimensional Figures**	**G.2**
Task Specification	The student will identify the properties of two-dimensional figures.	

Objective: Two-Dimensional figures **(G.2)**

6 points	Identify the side length, perimeter, or circumference of two-dimensional figures in 3 out of 4 trials.
5 points	Identify the properties of two-dimensional figures in 3 out of 4 trials.
4 points	Identify circumference in 3 out of 4 trials.
3 points	Identify perimeter in 3 out of 4 trials.
2 points	Respond when exposed to a perimeter in 3 out of 4 trials.
1 point	React when exposed to a perimeter in 3 out of 4 trials.
Total points possible	**6**

Respond refers to any attempted interaction from the student upon exposure to the activity (e.g., assisting, feeling, observing, listening).
React refers to any observable change caused by exposure to the activity (e.g., startle reflex, opening eyes, turning head towards sound or touch).

EOI Geometry		
Standard Measured	**Triangles and Trigonometric Ratios**	**G.3**
Task Specification	The student will identify the two legs and the hypotenuse of a right triangle.	

Objective: Pythagorean Theorem **(G.3)**

6 points	Use the lengths of the 3 sides of a triangle and the Pythagorean Theorem to verify whether or not the triangle is a right triangle in 3 out of 4 trials.
5 points	Identify the two legs and the hypotenuse of a right triangle in 3 out of 4 trials.
4 points	Classify triangles using lengths of sides (e.g., equilateral, isosceles, scalene) and types of angles (e.g., equiangular, right, acute, obtuse) in 3 out of 4 trials.
3 points	Identify different types of triangles in 3 out of 4 trials.
2 points	Respond when exposed to different types of triangles in 3 out of 4 trials.
1 point	React when exposed to different types of triangles in 3 out of 4 trials.
Total points possible	**6**

EOI Geometry		
Standard Measured	**Coordinate Geometry**	**G.5**
Task Specification	The student will use transformations to solve problems.	

Objective: Transformations **(G.5)**

6 points	Identify the coordinates of one missing vertex of a transformation (reflection, rotation, translation) of a simple figure in 3 out of 4 trials.
5 points	Create transformations in 3 out of 4 trials.
4 points	Identify the type of transformation: reflection, rotation, translation in 3 out of 4 trials.
3 points	Recognize transformations in 3 out of 4 trials.
2 points	Respond when exposed to transformations in 3 out of 4 trials.
1 point	React when exposed to transformations (reflection, rotation, translation) in 3 out of 4 trials.
Total points possible	**6**

Respond refers to any attempted interaction from the student upon exposure to the activity (e.g., assisting, feeling, observing, listening).
React refers to any observable change caused by exposure to the activity (e.g., startle reflex, opening eyes, turning head towards sound or touch).