Guidelines for High School Mathematics Work Samples

Definition: A Mathematics Work Sample is individual student work used to provide students with the opportunity to demonstrate problem-solving skills and/or to demonstrate proficiency in the Essential Skill of Applying Mathematics.

Purposes:

1. To meet requirements for **one** local performance assessment in high school in mathematics
2. To demonstrate proficiency in the Essential Skill of Mathematics in order to earn an Oregon High School Diploma

Required assessment instrument: Oregon's Official Mathematics Scoring Guide

Requirements for mathematics work samples

Number

1. One work sample for local performance assessment (any of three math subjects: algebra, geometry, statistics)
2. Two work samples for Mathematics Essential Skill proficiency (any two of three math subjects above). One math work sample may also count as the local performance assessment.

Required scores and traits

- For local performance assessment, there are no required scores.
- For Mathematics Essential Skill Proficiency, a minimum score of 4 out of 6 in each of the five scoring guide dimensions is required.
  - Making Sense of the Problem
  - Representing and Solving the Task
  - Communicating Reasoning
  - Accuracy
  - Reflecting and Evaluating
- For Mathematics Essential Skill Proficiency, student work must demonstrate proficient application of high school level mathematics knowledge and skills.

Individual work

- must represent what the individual student can do with no outside assistance, teacher or peer feedback
- no collaborative group projects or products are allowed
- Appendices L & M of the 2011-12 Test Administration Manual contain more information (http://www.ode.state.or.us/search/page/?=486)

Opportunities for revision:

- work samples that nearly meet the achievement standard (scoring a mix of 4s and 3s) may be returned to students for revision
- In addition to scores, the only allowable feedback to students is highlighting phrases on the Official Mathematics Scoring Guide and/or using the Official Mathematics Scoring Form provided by ODE (http://www.ode.state.or.us/search/page/?id=2704)

Guidelines for High School Mathematics Work Samples (continued)

Who should complete mathematics work samples?

- Local Performance Assessments: All students must have the opportunity to complete at least one mathematics work sample during high school.

- Essential Skill Proficiency: Students who have not demonstrated proficiency by meeting the mathematics standards with a score of 236 on the OAKS Mathematics Assessment may use work samples as evidence of their proficiency in the Essential Skill of Mathematics. (Typically, these would be students in the "nearly meets" category: students whose assessment scores or classroom work indicate that they may have the necessary mathematics skills, but are not demonstrating those skills on the OAKS assessment. Students who need significant additional instruction to reach a high school level of mathematics proficiency are not likely to benefit from the work sample option until their skills have improved.)

Who should score mathematics work samples? One trained classroom teacher or other district employee trained on Oregon's Official Mathematics Scoring Guide. (Some schools may choose to use more than one rater or to score work samples in a group setting for anonymity and to facilitate discussion of close scores.)

Recommendations for Developing Mathematics Work Samples

Problem-Solving Tasks: Complex problems requiring multi-step solutions and reflecting content from the mathematics standards are appropriate for work samples. These work samples may be "stand-alone" tasks that provide students with opportunities to practice and demonstrate their problem- solving skills or they may arise naturally in the curriculum as part of a particular unit of study in a math or other content class. *Mathematics tasks released by the Oregon Department of Education may be used as practice activities and as models to develop local math problem solving tasks* http://www.ode.state.or.us/search/page/?id=281

Choice: Whenever possible, work samples should be designed to offer student choices among several different problem-solving situations.

Recommendations for Administering and Scoring Mathematics Work Samples

Allow adequate time for students to show their best work. If students need more than one session to complete a work sample, all student materials in progress must be collected and kept secure between sessions.

Provide access to appropriate tools such as calculators and formula tables from the OAKS Mathematics Assessment.