

Silicon Valley Mathematics Initiative

How Performance Tasks are Used to Inform Instruction

Performance assessment opportunities are scheduled periodically throughout the school year to provide formative information to guide instruction. Most often performance tasks are administered the first week that school is in session, a second time at the end of the first semester, a third time at the end of the third quarter and then at the end of the year. The tasks are carefully selected to measure student growth from a pre-determined perspective. The most common perspectives are listed as follows:

1. Identify a big mathematical idea linked to a standard at a grade level. The students are assessed as to whether they understand and utilize that mathematical idea with tasks throughout the year. Some examples might be multiplication at third grade, rational numbers at fifth grade, proportional reasoning at seventh grade or exponential growth at ninth grade.
2. Select specific tasks that measure the learning of students after a specific unit of instruction. These would be selected according to the mathematics of the curriculum taught each quarter. A unit of instruction might involve spatial visualization. The task administered following the teaching of that unit would involve spatial visualization and be tied to the geometric standard on spatial visualization at that grade span.
3. Select different types of tasks that would measure students' problem solving abilities with non-routine, unrelated problems. A set of tasks that focus on different math strands as well as elicited different types of mathematical thinking and analysis are selected. Comparing the success of students in attacking, analyzing, solving and communicating their results as the year progresses is informative.
4. Select a specific strand or mathematical idea, that is taught in more depth as a student proceeds through the grades. Mathematically related tasks, appropriate to a grade level, are administered to students at three or four grade levels to see comparison over a vertical slice.
5. The same mathematical task is given to two or three grades in a grade span to assess growth as student proceed through school and become more sophisticated mathematicians. These assessments can chart and compare depth in mathematical understanding.