Scientific Inquiry Work Samples Questions and Answers

1. When will scientific inquiry work samples be required?
Scientific inquiry work samples are now required. This is the third year of a 3-year phase in for the reporting of scores as part of district work sample management. (see Phase-in Schedule, Figure 13, page 64, and on the web under “Science Standards” at: www.ode.state.or.us/search/results/?id=240). Teachers will provide instruction and classroom assessment in all four dimensions of the scoring guide at Benchmarks 2, 3, and CIM. Official scientific inquiry anchor papers are available at this web site; also, stronger and more varied anchor papers are being developed.

2. I’m not too familiar with the process. I need more ideas for scientific inquiry. Are there methods I can use to enhance my lessons?
Investigations should relate to the units you currently teach (see Modifying Activities for Scientific Inquiry, pages 50-62). Use the dimensions of the Scientific Inquiry Scoring Guide to plan your lessons and help students develop their work samples.

3. Are work samples supposed to be controlled experiments?
Scientific Inquiry Scoring Guides do not limit students to controlled experiments. The guides are designed to be used with student work from a variety of situations (see pages 32-33 for examples of ways to engage in scientific inquiry).

4. How do you score a dimension when some threads are very low and others very high?
Teachers should be able to justify a response using the language of the scoring guide. Use professional judgment to determine the predominant score or composite score for the threads within the dimension.

5. What teaching strategies can I use to help students analyze the evidence they have collected? Middle school students can design investigations and collect data but analysis is a challenge.
Try scaffolding questions using Bloom’s taxonomy until students get used to higher level selfreflection (e.g., What do you know about…? How can you explain…? How can you apply…? What part of this shows…?).

6. Some students cannot write well, but can do scientific inquiry. Are there ways other than writing for students to produce a work sample?
The scoring guides do not specify one form of scientific inquiry work sample. Students may complete either written or oral work samples. In fact, some districts find a science activity can satisfy both the scientific inquiry and speaking requirements with proper planning and documentation. Teachers report that some students use Power Point displays and others use more traditional poster boards. Concept maps may work well for some.
7. **At what point does the work become the student’s own work? How much revision is allowed?**
Refer to Figure 10, page 51, for an illustration of how students move from teacher-directed to student-directed scientific inquiry. Student-directed scientific inquiry is the goal, but most students will need some teacher direction, especially at first and in the earlier grades. Teachers should NOT suggest specific revisions. If students resubmit a work sample, teacher feedback should focus on scoring guide language that does not give away solutions (e.g., Does your design match the question?). Also, if students get on the wrong track, it is OK for teachers to ask them questions about their procedures to guide them in the right direction.

8. **Can students work together?**
The individual student should assemble the final explanation of the work. Science is often a collaborative process, so students may work together designing an investigation and collecting data. Teachers who have had students work together collaboratively report that they find members of a group produce distinctly different final products if they are required to work on the final product as an individual.

9. **What kind of assistance can I give to special needs students?**
Numerous options are available to meet the special needs of students. Many of the techniques described in the answers to questions 6, 7 and 8 can be used for this purpose (various forms of scientific inquiry work samples, opportunities for different levels of teacher direction, and opportunities for collaboration).

10. **How many work samples are required to demonstrate student performance?**
A student may meet the requirement with one work sample, or may include multiple samples as indicated on the implementation schedule (Page 64).

11. **Do students have to complete the entire work sample or can one dimension be collected?**
Teachers are expected to provide instruction and classroom assessment in all four dimensions of the scoring guide. However, only the dimensions indicated on page 64 must be reported for school district work sample management.