



Classroom Teacher Preparation

Scientific Practices 2: The Observation Challenge

Please use the following to prepare for the next SfS lesson.

Description:

This lesson challenges students' observational skills. Students will learn how to distinguish between observations (quantitative vs. qualitative), inferences, and opinions. They will test these skills with a mystery object challenge: students will need to observe objects, describe them, and see if their observations allow their peers to correctly guess their object.

Lesson Objectives – SWBAT (“Students Will Be Able To...”):

3rd-5th

- Identify the difference between opinions, observations, and inferences
- Describe a given object with qualitative and quantitative observations

Disciplinary Core Idea (DCI)

None apply

Science & Engineering Practice (SEP)

Planning and Carrying Out Investigations

- (3rd-5th) Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution.

Crosscutting Concept (CCC)

Scale, Proportion, and Quantity

- (3rd-5th) Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.

Preparation:

This lesson serves as an introduction to the topic of making good observations and inferences.

Room Set Up for Activities:

No special room set-up is required for this lesson.

Safety:

There are no safety concerns for this lesson.

Related Modules:

This lesson may be taught as part of a sequence or group of related modules on **Scientific Skills**. Modules include:



Scientific Practices 1: Procedural Thinking – Students learn the importance of creating and following clear and ordered plans. They will try to replicate the creation of a classmate from written directions.

Scientific Practices 5: Measuring Volume - Students measure volume in different ways in order to better understand the concept of volume as the amount of space something takes up.

For other module sequences and groups, look here: www.sciencefromscientists.org/sequences

Standards Covered:

Please click the following link to our website to review the standards covered by this lesson, listed by state:

www.sciencefromscientists.org/standards/

Lessons are matched to both national NGSS and local state standards.

After Our Visit:

Extend this lesson by following the process of a scientific inquiry (complete with observations, questions, and hypotheses).

Access this Extension activity by visiting the Classroom Post found on our website at sciencefromscientists.org/cohorts. Use the name of your school/cohort and password to log in.

To help Evaluate, check out our Open Response questions online at sciencefromscientists.org/open-response-questions. They are freely available for all of our lessons for current teachers. Use the password supplied by your instructor to log in.

Additional Resources:

- The Scientific Process Activity:
http://mass.pbslearningmedia.org/resource/ess05.sci.ess.earthsys.lp_scientificmethod/the-scientific-process/
- Scientific Tools and Methods: Interactive video that introduces different applications for the scientific method:
<http://mass.pbslearningmedia.org/resource/knh.methods/toolsandmethods/>