

**NIH SEPA Environmental Health Investigators
Measuring Skills and Tools Curriculum: Lesson 11
Grade Level: Middle
Duration: 1 hour**

Communicating Data

Next Generation Science Standards

Disciplinary Core Ideas:

ESS3.A: Natural Resources

Science and Engineering Practices:

6: Constructing Explanations and Designing Solutions

7: Engaging in Argument from Evidence

Objectives

1. Students will implement the scientific process.
2. Students will support and communicate their research project results.

Materials

- Smartboard/projector
- “My Wife and Mother-in-Law” picture
- Laptop/tablet (1 per group)
- “Research Project Planning” sheets (completed from previous session)
- Data models (completed from previous session)
- Research Poster template
- Research Poster example
- Poster board (1 per group if cannot print digital posters)

Activities

Bellringer: Show the class the “My Wife and Mother-in-Law” classic optical illusion. Have them take a minute to write down what they see and what they think about the illustration. Have a brief discussion about what everyone saw. Explain that this is a famous optical illusion and it is an illustration of both a young woman and an old



woman. The image that is seen first depends on each individual's perception. (5 minutes)

Lecture: Use the bellringer to transition into a discussion about how information can be perceived differently depending on the perception of the audience, as well as how clearly the presenter communicates that information. Information can be shared in various forms such as an image, model, written, or verbal communication. Now that the students have completed their research projects, they need to work on clearly communicating their results to others. They will do this using a research poster. (5 minutes)

Activity: Put students into their research groups, show them the example research poster, and talk through its components and effectiveness. Share the blank poster template with students digitally and have them pull it up on their laptops. (If printing digital posters is not an option, students can make hard copies of their posters on poster boards instead.) Have students take a few minutes to assign responsibilities among their group members. Each group will need a written project introduction and purpose, description of their data collection procedure, their data results, a visual representation of their data results (like a bar graph), the analysis and conclusion of their data, a related picture, and brief acknowledgements thanking anyone who contributed. They will spend the rest of the class time working on these drafts and gathering all of the necessary parts to their posters. Periodically remind them to be clear in their communication. (45 minutes)

Discussion: Before the end of class, have students save everything they have been working on and let them know that they will be finishing their final posters at the next session. (5 minutes)

*The instructor should look through the written sections for each group and offer feedback and edits to students for the next period.





"My Wife and My Mother-in-Law" by William Ely Hill