Lesson 1: What Do Scientists Do?

INTRODUCTION
Students will be given an introduction to science and what scientists do. Through a PowerPoint presentation, students will get a better understanding of all the different types of science and how scientists ask and answer questions. The PowerPoint will also introduce “ecology,” describe what ecology is, and explain how scientists do ecology. Finally, students will meet four ecologists through interviews about their work. To help students understand that science is a part of their everyday lives, students will complete an activity where they create a collage of people doing science using magazines and drawing pictures. This lesson gives students a realistic idea of what science is and helps them understand that scientists are real people answering real questions.

OBJECTIVES
Students will be able to:
• Understand what scientists do
• Observe and compare science in action
• Create a collage that shows people doing science

CALIFORNIA STATE STANDARDS
Life Science, Investigation and Experimentation Standards:
4a. Draw pictures that portray some features of the thing being described.
4b. Record observations and data with pictures, numbers, or written statements.
4e. Make new observations when discrepancies exist between two descriptions of the same object or phenomenon.

BACKGROUND
The scientific process is a broad concept that many young students do not understand. The process of science involves observations, information gathering, fieldwork, data analysis and sharing. There are many fields of science where people can apply the scientific process to ask and answer questions. The field of ecology, the focus of this lesson, involves the study of the distribution and abundance of life and the interactions between organisms and their natural environment. The goal of this lesson is to help students understand that scientists are real people asking interesting questions and engaging in inquiry based learning. The scientist interviews presented in this lesson were all recorded in Moorea, French Polynesia with scientists who were conducting work there in the summer of 2008.

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MATERIALS
Computer
Projector (optional)
“What Do Scientists Do?” PowerPoint
Scientists Interviews
Magazines
Paper
Markers
Glue
Scissors

PREPARATION
• Collect magazines for students to use and set out large pieces of construction paper, glue, scissors, magazines and markers for each group of students.
• This lesson can be broken up into two days, if more convenient, with the PowerPoint, Interviews and discussion on the first day, and the creation of a collage on another day.

ACTIVITY
• Write the word “science” on the board and ask students what they know about science. Some guiding questions include, who are scientists? What do scientists do? What kind of scientists are there?
• Explain to students that today you are going to teach them about science, meet some scientists and learn about what they do. Slowly show the PowerPoint presentation and Scientist Interviews once or twice, as needed, making it clear that ecology is just one type of science and each of the scientists interviewed study different areas of science.
• Once the presentation is thoroughly completed, review some of the concepts and ask students where they may have seen people “doing science.” Through questioning, guide students to make the connection between scientific work and people they know asking questions, making hypotheses, and conducting experiments.
• Explain to students that they will be creating a collage of people “doing science” using magazines or drawing pictures. Students will work in groups and share their collages with the rest of the class. Review expectations for behavior when working together as a group and encourage students to work together, help each other and have fun.
• Break students into 3 or 4 groups, giving each group a set of magazines, large construction paper, glue, scissors, and markers. Allow each group about 20 minutes (or more if necessary) to create their collage.
• Once complete, each group will have an opportunity to share their collage. Presentations can include the whole group coming in front of the class and each member explaining one picture on the collage.
• Display the collages somewhere in the classroom.

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