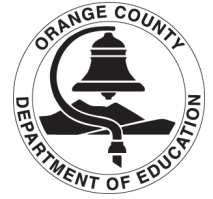




Adaptations and Ecosystems Classroom Activity



SYNOPSIS

As groups, students will create a model of an ecosystem with both living (biotic) and nonliving (abiotic) elements. They will explain how animals, plants, and people adapt differently when exposed to an outside factor, such as weather and geology. Overtime, the students will revise their model based on their Field Trip and/or Traveling Scientist experience, helping support their learning of modeling the Next Generation Science Standards (NGSS).

OBJECTIVES

Students will be able to:

- explain how people, animals, and plants are important parts of an ecosystem
- explain how two living organisms adapt differently to the same outside factor
- describe how adaptations are a method of problem solving

NGSS Concepts

This modeling activity will help support the following standards:

5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

MATERIALS

- butcher paper
- crayons or markers
- pencils
- post-it notes

PROCEDURE

1. In small groups, have the students list and discuss the physical environment of a local ecosystem (i.e. beach, foothills, desert). You could show them some pictures to help them identify local ecosystems.
2. Ask students to list and discuss what kinds of plants and animals they would find in this ecosystem. This may be challenging to them, but this will give you an idea of their base knowledge.
3. Give each group a large piece of butcher paper.
4. Have students draw the physical environment first. (Suggestions include: weather conditions, land, space, shelter, buildings, water, and sun.)
5. Have students add drawings of living elements in their environment (animals, humans, and plants).

6. Have the students draw any interactions between the biotic and abiotic factors. It is best to leave this up to the students on how they want to represent these interactions.
7. Next, the students will participate in a Field Trip or Traveling Scientist program.
8. After their program, have the students revise their ecosystem models to incorporate what they have learned.
9. Remind students to label their drawing. They will be sharing these posters with their classmates and they should completely describe their ecosystem.
10. Hang the posters up around the classroom.
11. Have the students walk around to each poster and add comments and ideas using post-its on the posters.
12. After the gallery walk, have the groups discuss the comments and revise their model.
13. This revision process can be repeated as the students participate in additional programs or activities.
14. As the facilitator of the activity, you can remind the students to include human, plant and animal interactions along with the interactions.

CHECK FOR UNDERSTANDING

This can be done throughout the lesson. Your questioning of the students work can help guide their models.

- Have the students share their models throughout the process.
- Ask the students how the atmosphere, geosphere, and hydrosphere impacts the plants and animals in the ecosystem.
- Ask the students how humans impact these ecosystems.

EXTENSION

- Have their first model focused on matter and then create a second model focused on interaction of the geosphere, biosphere, hydrosphere, and atmosphere.
- You can start this activity as a writing assignment in the science journal. The students could start their models on their own in their journal and then work as a group on their posters.
- Take your students out of the classroom to look at interactions they see on their school campus. They can compare their school “ecosystem” to the one that they have been studying.