



Living Things Need Water

Connections to Africa

Grade Levels

Grades 1-3

Engage

This activity is designed to start your students in recognizing themselves as scientists and thinking critically about problem-solving. The goal is to teach concepts through discovery and to encourage using scientific thought processes. As with all lessons provided, please feel free to adapt them according to your students' abilities. Some of your students may be early readers, in which case you may find it more successful to lead activities and discussions as a whole group rather than using individual Research Plan sheets. Certain scientific vocabulary may or may not be appropriate for your students' level of understanding. Take these ideas, make them your own and your students will have a greater chance at success.

How easy or difficult do I think it would be for people and elephants to share water?

1. Begin this lesson by telling students that they will be investigating one of the basic needs of all animals, water.
2. If your students are familiar with brainstorming and recording their ideas, break them into small groups. If your students need more guidance, work with them as a large group. Engage your students in a discussion of what they predict the answer to this question to be. More importantly, why do they think this?

Explore

3. Continue with the above discussion and encourage the group to come up with ways that they could investigate the question and test their predictions scientifically (all suggestions are welcomed). What tools might they need to carry out their suggested explorations? Are there materials that would help them find the answer? Should they be making observations? What kinds of records will they need to keep? What will they do with the information once they have it? And how will they know that they've successfully answered the question? Allow a wide variety of ideas and encourage conversation amongst the students to refine the details of their ideas.
4. Ideas should be recorded on the Research Plan sheets. Small groups can record their own answers or you can record ideas as a group.

Explain

5. Students will now participate in an activity that will help them understand what sharing water would be like.
6. Use “water droplets” (blue poker chips included in teacher kit) to represent the water available to your students. Place them all together at one spot in the classroom that is accessible to all students.
7. Each student is given a card which tells them who they are and what task they will need water to complete. Have the students read the cards so that they are familiar with what they will need to complete their task.
8. The order of students is completely dependent on the teacher’s choosing. There is no proper order. The first student is told to come up to the water droplets and take as much as they will need to complete their task. Allow them to take whatever amount they believe they will need.
9. When one student returns to his or her seat, have the next student perform their task. Continue until all of the water droplets are gone. When the water is gone, no remaining tasks can be completed. This lack of water can simulate a drought or the end of the rainy season.
10. Ask the students basic questions about the game. How many of them were able to complete their task and how many were not? What do they think would happen to the students that were unable to complete their tasks?

Expand

11. Ask students to reflect on the results of the activity and review their ideas of how to get the information they would need to answer the original research question. How difficult was it for people and elephants to share water? Was there enough water for everyone? Are there some tasks they consider more important than others? Can you list the tasks that require more water and the tasks that require only a small amount?
12. Allow students time to discuss and plan how they could make the activity more successful. Do they need to gather any additional information before they can answer the question? Did they think of additional ways to gather information based on the activity they’ve just done?

Assess

13. Monitor your students as they continue to research and develop their method for communicating their results. Make sure to help them continue their discussion on the difficulty of people and elephants sharing water.
14. Once the students feel as though they’ve completed their research, have the students participate in the activity again.
15. Using what they have learned, see if they can come up with different ways to make the activity more successful. Were they able to complete more tasks? Were they able to get water to more of the people and elephants?

16. Conclude the lesson by looking back at the original research question. Did the students' answer to the question match their prediction? What would happen to either people or elephants if they were not able to figure out how to share a resource as important as water?

Standards

Ohio Academic Content Standards
Grade 1 Life Science Topic: Basic Needs of Living Things Living things have basic needs, which are met by obtaining materials from the physical environment Living things survive only in environments that meet their needs
Grade 2 Life Science Topic: Interactions within Habitats Living things cause changes on Earth
Grade 3 Earth and Space Science Topic: Earth's Resources Some of Earth's resources are limited

Next Generation Science Standards
Engineering Design K-2-ETS1-1 Ask questions, make observation, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool
Interdependent Relationships in Ecosystems 3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change



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Supplemental Materials

My Research Plan

1. What is my research question?

Is it a good question?



How easy or difficult do I think it would be for people and elephants to share water?

2. How can I get my information?



3. What will I do with this information?



4. How will I know I did my job well?

