Living Things Need Space

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.

In how many ways is shrinking space alike or different for elephants and for humans?

1. Begin this lesson by telling students that they will be investigating one of the basic needs of all animals, space.
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, <u>why</u> 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. Explain to the students that you have an activity that will help them imagine what it would be like to have to live in less space than they are used to.
6. Have the students measure your classroom. How they measure the space is up to you and your students abilities.
7. Now explain to the students that their space, or classroom habitat, is being cut in half. Calculate with your students what half the size of the classroom is and decide which half of the space is best to now live in. Have all the students move within the boundaries of this new space for the remainder of the activity.
8. Ask the students what it feels like to now be in their new habitat. Have them think about and create a list of all the things that happen in the classroom on a given day and how they will accomplish those things now that their space is smaller. Are things easier to do or harder to do? Are there some things that can no longer be done?

Expand

9. Ask students to reflect on the results of this activity and review their ideas of how to get the information as they begin to think about elephants. How do elephants go about their daily activities if their habitat is cut in half? Allow the students' time to discuss and plan for the next steps of this research plan. Do they still need to gather additional information before they can answer this question? Did they think of additional ways to gather information based on the activity they've just done?

Assess

10. If students are working in small groups, monitor their work as they continue their research and developing their method for communicating their results. If you are working with the class as a whole, facilitate their work and discussion of how habitat loss is affecting elephants.
11. To conclude this lesson, did the students answer to this research question match their prediction? What happens if the basic needs of living things aren't met? How does this relate to habitat loss, or shrinking space?

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 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 cause 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?

In how many ways is shrinking space alike or different for elephants and for humans?

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?