



10. Humans Construct Their Environment

Concepts

- Most animals require a safe place to rest, eat or store food, and reproduce.
- Animals use spaces that they can find and/or they adapt natural materials for use as spaces or shelters.
- Humans use both natural and designed materials to create their living spaces, which serve many purposes.

Overview

With a variety of materials, students will create models of living spaces (houses) for people in different climates with different available resources.

Science and Math Skills

- Listening
- Communicating
- Applying knowledge
- Inferring
- Identifying patterns

Standards

- Organisms can survive only in environments where their needs can be met.
- Humans depend on their natural and constructed environments.

Time

Setup: 1 hour

Class: 2-3 class periods

Materials

Per student:

- drawing paper
- crayons or markers

For the entire class:

- craft sticks
- glue

Optional (teacher provides):

- variety of resources that are components of a house, such as wood, sheetrock, glass, brick, cardboard, paper, metal, insulation wrap ("Tyvek[®]"), roofing shingles or tile
- variety of building materials for students to use, such as cardboard, card stock paper, "Lincoln Logs[®]," building blocks, craft sticks, ice cubes, tent materials (fabric), and/or "Lego[®]" blocks

Setup

You will need to check out a copy of *The Three Little Pigs* story from the library, or make up your own version to share with students. You also will need to collect scraps of building materials to show to students. This could be done, with permission, at a building site or possibly with samples from a hardware/home improvement center. You also may be able to gather such items around your house.

Safety

1. Follow all district and school laboratory safety procedures.
2. It is good laboratory practice to have students wash hands before and after laboratory investigations.

Background

An "environment" consists of the space, conditions and factors that affect an individual's and a population's ability to survive, and it determines their quality of

life. All living things occupy specific environments and, accordingly, they survive only in environments where their needs are met. Animals sometimes use resources in their natural environments to create living spaces ("places to be") that provide protection from predators or places to raise their young. Birds build nests from twigs, beavers build dens or lodges from sticks and logs, etc. Humans make more complex uses of resources to satisfy their needs by building houses and most objects found within homes, such as appliances and furniture.

Houses around the world differ, based on available building materials and climate. Homes in cold areas must be constructed differently than homes in areas that are hot, dry, rainy, etc. One thing almost all houses have in common is that they are built from materials that are readily available or can be transported easily. For additional activities in this series, see K-5 Teacher Resources at <http://www.bioedonline.org/k%2D5/>.

Procedure

1. Read or tell the story, *The Three Little Pigs*. Let students repeat phrases such as "I'll huff and I'll puff and I'll blow your house down."
2. Ask, *Is this really possible? Could it happen to your house? Why or why not? How is your house alike and different from the pigs' houses? Have students consider how the availability of building materials and the climate might influence how houses are built. Ask, Why would Eskimos (Inuit) build houses of ice and not wood? Why did other Native Americans build homes of wooden poles and animal hides? Why is your home made of lumber, cement, brick or other materials?*

3. Have students draw pictures of the three pigs' houses and of their own homes.
4. After they have completed their drawings, ask students to name the materials used in building the different homes they drew. Encourage students to share what they know about house-building materials (for example, steps made of concrete; exterior of building made of brick/wood/stucco; windows made of glass, etc.).
5. Discuss common materials for building houses in your area and in other regions. List or draw materials on the board.
6. Distribute pieces of the building materials you have collected to each student, pair or group. Ask, *What might these materials be made from? What might they be used for?*
7. After the discussion, have each group of students cooperatively plan and build a different type of house of its own design. Each group should decide what kind of living conditions its house would provide and in what climate it would provide the best shelter.
8. Students will display their houses. Consider having students create stories about people who could live in the type of house that they constructed.

Extensions

Bring in large boxes for students to decorate as houses, or cut windows and doors in very large boxes and allow students to play inside the boxes.

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