

Kindergarten: Earth and Space Science

BUILD A NEST: Changing the Environment

Background Information:

Both plants and animals are dependent upon their environments for survival. However, in order to get the sustenance, they need, organisms often must alter their environment to meet their needs. Some animals gather and store food for a season due to times of extreme temperatures, ground conditions, and availability. Many bury food in the ground, while others store food in plants. Usually, the limbs or hollowed out sections of the trunks of trees are used, though some animals do store their food in densely populated areas of low plants.

<http://www.discoverwildlife.com/british-wildlife/how-identify-animal-food-stores> provides a detailed list of some animal actions, while images of and facts about animals may be found at <http://www.nationalgeographic.com/animals/index/> and <http://www.pbs.org/wnet/nature/the-animal-house-introduction/7194/>. Animals, such as humans, also alter the environment for their survival. Prior to a home being built, ground needs to be prepared, whether it is leveling, digging, or removing plant life. Some animals build homes from leaves and other flora. Shells are used by others.

Performance Expectation

K-ESS2-2 Earth's Systems

Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

<https://www.nextgenscience.org/pe/k-ess2-2-earths-systems>

Disciplinary Core Ideas

ESS2.E: Biogeology: Plants and animals can change their environment.

Science and Engineering Practices

Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s).

Construct an argument with evidence to support a claim.

Crosscutting Concepts

Systems and system models: Systems in the natural and designed world have parts that work together.

Objectives

- Students will collect and identify textual evidence that identifies ways that animals use natural materials for their needs.
- Students will work collaboratively analyze materials, communicate findings, share ideas, and construct a nest using chosen materials.
- Students will justify their choices for materials used in their nest.
- Students will identify potential sources of nest building materials.

Advanced Preparation:

- Determine how many items students will have available for building the nests. A new material identification card will be needed for each building material.
- Consider how materials will be organized for student use.
 - Will there be stations?
 - Will each group have a set of samples?
 - Is it best to only have one item out for the entire class at one time?
- You will need a different “These are my observations for...” page for each of the observed materials.
- If you decide to have the students “glue” the nests together, paper Mache paste may be made from two parts of water to one part of flour. Mix until it is the consistency of pancake batter.

Materials

- *A Nest is Noisy* by Dianna Hutts Aston
- Material Identification Cards
- Hand Lens
- Suggested Materials:
 - Raffia
 - Moss
 - Yarn, String
 - Cotton Balls
 - Fabric Scraps
 - Wooden, Plastic, or Styrofoam Eggs Assorted Sizes (optional)
- Nest Book Student Pages (*Each student will need a different copy of the “These are my observations for...” journal page for each of the items they will observing.*)
- Materials for Binding Books (optional)
- Computer
- Animal Homes Power Point

Suggested Implementation

Begin a class discussion about animal homes by asking students questions such as:

- *Where do birds live?*
- *What is a nest?*
- *Where do birds get the materials they need to make a nest?*
- *What other animals make a “nest”?*

Share that now you will be reading a book about bird homes. Read *A Nest is Noisy* to the class. Read the book a second time. This time encourage students to observe traits of the nests, such as materials used, sources of the building materials, locations of nests, and sizes.

Introduce the building phase of the lesson. Explain to students that they will be deciding on materials that they think would be good for building a nest. Share the following with the students:

- The eggs that will be used in this model
- They will be designing an idea for a “nest”
- Each material that will be used and material identification cards
- Have the name of the material available

Students need to observe each material and describe it. Use of a hand lens will assist students with this task. Encourage drawings, coloring, and words. You may wish to have students select a type of bird that would use the student created nest. Using your selected strategy from Advanced Preparation, distribute the materials or assign groups to stations. Assist groups as they work through student pages. When students are finished, help them assemble their books.

Book Contents:

- Cover/Title Page (Students make)
- These are my observations... (One page for each of the materials)
- I would build a nest from... (Drawing and justification for material(s) selected)
- This is what my nest would look like... (Drawing of nest)
- Homes can be made of many things... (Drawing)
- Nests can be made of... (Drawings of other materials and/or sources. Explanation of how the materials may be used. This justification may be a written or verbal explanation by the student.)

Students will complete the following steps:

- Observe the materials and record observations
- Experiment with or test the materials
- Record additional observations
- Build the nest

Debrief

- What similarities did you see among the nests?
- What differences did you see among the nests?
- What other materials do you think an animal could use for making a nest? A home?
- Where would the animals get this material?

Assessment

The following single point rubric can be used to assess student understanding. For each of the criteria listed below, either circle the proficient description or add notes to a box indicating why the student’s performance was either lacking or exceptional.

Areas that need improvement. Developing Performance	Criteria for Proficient Performance	Evidence of exceeding standards. Advanced Performance
	Can provide examples of how animals use materials to build nests.	
	When asked “Why did you choose your nest design?” reference observations from the testing of the materials.	