



ANIMAL CONTRACTORS

Subject: Biomimicry

Grade Level: K-5

Topic: Engineering Design Process

Time: 60 minutes

Learning Objectives

Students will:


- learn about different types of animal homes.
- evaluate the different types of homes and building strategies.
- design and/or build a home they would like to live in that is inspired by how an animal builds its home and explain why they selected their design.

Materials

computer, [Inside the Hive and Be a Hivemaker](#) worksheets, drawing paper, colored pencils, markers or paint and brushes, book “If an Animal Built” Your House by Bill Wise

Procedure

Engage: To promote student curiosity, Ask: *How do bees build their hives?* List what students know and what they would like to know about this topic. Watch parts of this video to continue to build student interest.

 [How Do Bees Make Their Hives? / Why Do Bees Build Hexagonal Honeycombs?](#)

Explore: Help students build understanding by having students complete an activity from the National Honey Board about bees called “Inside the Hive” (front) and then “Be a Hivemaker” (back).

<https://honey.com/images/files/2020-Educational-Materials-Inside-The-Hive-Activity-Sheet.pdf>

Explain: Have students begin to show what they have learned by reading, “If Animals Built Your House” by Bill Wise to the students and then allowing students to share what was most interesting to them about the

animal homes they have learned about. Lead a discussion about the pros and cons of the different types of construction animals use to build their homes.

Elaborate: Have students use their new knowledge by having students select an example from the book or video and use it to draw a model of a home that an animal would help them build. Use the engineering design process to work through the project. Label parts of the home that are inspired by animal builders.

Assessment

Evaluate: Evaluate student learning by asking students to share their drawings and offer positive comments on each other's work.

Extension Activities

- Students use recycled material to create the home from their drawings. Students may work alone or in small groups for this activity.
- Have a local naturalist bring in animal homes such as bird or wasp nests.
- Invite a local bee keeper to speak with students.

NGSS Alignment

Grades K-2

K-2-ETS1-2 - Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

1-LS1-1 - Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

2-ETS1-1 - Ask questions, make observations, 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.

Grades 3-5

3-5-ETS1-1 - Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2 - Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints.



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