

Lessons at a Glance

Science Content: Big Ideas

The Habitats Unit concentrates on the following Big Ideas. Along with the scientific Habits of Mind discussed on pages 6-7, these concepts are reinforced throughout the unit. The lessons in which each Big Idea is introduced or is a major focus are indicated in parentheses.

- All organisms have basic survival needs: air, food, water, protection, and space. A habitat is the place where an organism gets everything it needs to survive. (Lessons 1, 16)
- Many organisms share an environment and interact because their habitats overlap. (Lessons 2, 5, 7, 9, 16)
- Organisms have characteristics that make it possible for them to survive in their habitat. (Lessons 3, 4, 6, 8)
- A biome is a large geographic area that contains many habitats. (Lessons 10, 11)
- You can use what you know about a habitat and a biome to design imaginary organisms that might be able to survive in them. (Lessons 12, 14, 15)
- It's useful to have criteria when designing a project. (Lesson 13)
- Scientists use models to represent things that are too big, small, fast, slow, far away, or dangerous to observe in the real world. (Skill Building Activity: Using Models in Science)
- You can use a field guide to learn about and identify things in the natural world. (Skill Building Activity: Using Field Guides)

Lesson Overviews

The following overviews briefly summarize each lesson in the Habitats Unit. Core lessons are indicated with an asterisk. Suggestions for scheduling and flexible implementation are shown in gray.

Lesson 0: Doing Science

Children sharpen their awareness of scientific thinking as they conduct a self-directed exploration and then reflect on the processes they engaged in. In the context of these experiences, they are introduced to the work of scientists and to the Science Companion "I Wonder" circle, which provides a visual representation of many of the facets of scientific inquiry, exploration, and discovery.

Lesson 1: What's My Habitat*

This lesson introduces children to the Habitats Unit. As a class, they prepare and discuss a list of items for an imaginary trip, and learn the difference between the wants and the needs on their list. They evaluate their habitat by drawing or describing how their own basic survival needs are met.

Lesson 2: Who Needs an Oak Tree?*

In this lesson children discuss a story about an oak tree and all of the organisms that use the tree in different ways. They place drawings of the organisms on a class mural of an oak tree.

You can teach this lesson during language arts or art.

Lesson 3: How a Bird Feeds*

Children try using different tools ("bird bills") to retrieve different types of "bird food." As they figure out which specialized bill works best for a particular food, children experience how different types of bills help birds survive in their particular habitats.

Prior to this lesson, it would be helpful if the children complete the Skill Building Activity "Using Models in Science" on page 238.

Lesson 4: Bird Features*

Children play a game in which they try to match a bird's habitat and feeding habits with the type of beak and feet it has. They figure out which physical characteristics are most likely to belong to birds that live in certain habitats and eat certain foods. In the process, children build their classification skills and their ability to work cooperatively as a member of a group.

Lesson 5: Owl Food*

Children dissect owl pellets to learn about the eating habits of a barn owl. They identify the organisms the owl ate by looking at the skeletal remains in the pellet and try to identify the owl's habitat from what they know about the organisms in the owl's diet.

Consider teaching this lesson over two days.

Lesson 6: Habitat Walk, Habitat Talk: Birds

The children observe birds in their local habitat, if possible. They focus on the physical characteristics and behavior of the birds. The lesson offers two options: a Habitat Walk outside, or a Habitat Talk by a local bird expert in the classroom.

Prior to this lesson, it would be helpful if the children complete the Skill Building Activity "Using Field Guides" on page 246.

Lesson 7: Who Needs a Saguaro?*

Children listen to a book about a saguaro cactus. They discuss how the saguaro is similar to an oak tree in some of the ways that animals use it as part of their habitat and different in other ways.

You can teach this lesson during language arts.

Lesson 8: How a Cactus Survives*

Children observe characteristics of a living cactus plant. They talk about how the cactus looks different from other plants, and then compare models of how cactus stems and other plants' stems retain water.

This lesson takes place in two sessions. The time between sessions will depend on how long it takes a flat paper towel to dry in your classroom.

Lesson 9: Habitat Walk, Habitat Talk: Plants

Children observe local plants, focusing on the plants' physical characteristics, and learning how local animals depend on the plants. The lesson offers two options: a Habitat Walk outside, or a Habitat Talk by a native plant expert.

Lesson 10: What is a Biome?*

In this lesson, the children learn that a biome is a large area of the world characterized by its climate and the types of plants that dominate the landscape. They discuss the difference between a biome (a large geographical area) and a habitat (the place where a particular organism meets its survival needs).

Lesson 11: Researching a Biome*

Children work in groups using print and electronic resources to research the characteristics of one of Earth's major biomes. In subsequent lessons they use the research for a special project: designing organisms that could survive if their habitat were in that biome.

Consider teaching this lesson over two or more days. This lesson can be taught during language arts.

Lesson 12: Designing Organisms*

Lessons 12-15 form a cluster of lessons in which the children apply what they have learned in this unit to a design project. In this lesson, children collaborate in pairs to design an imaginary animal and an imaginary plant that share a habitat within the biome they researched.

Consider teaching this lesson over two or three days. This lesson can be taught during language arts.

Lesson 13: Developing an Assessment Rubric

This lesson in the Design Project cluster introduces the children to assessment rubrics. They practice using a rubric to evaluate a sample assignment. Afterwards, they collaborate to develop a class assessment rubric that defines what they should include in their animal and plant designs.

Lesson 14: Refining and Modeling Organism Designs*

Groups review one another's organism designs and make suggestions for improvements. Everyone has a chance to refine their designs before drawing pictorial models of the animal and plant organisms they imagined.

Part of this lesson can be taught during art.

Lesson 15: Presenting Organism Designs*

The children use their research notes, design notes, and models from the design project lessons to present their imaginary animals and plants to the class. They share background information about the biome the organisms inhabit, present their models, and explain all the survival characteristics their organisms have that make them well-suited to live in their habitat.

Consider teaching this lesson over the course of a week.

Lesson 16: The Human Habitat*

The children complete the Habitats Unit by reexamining their personal habitat and determining how far it extends. The class evaluates a typical lunch and identifies what parts of the world the food came from. They recognize that humans' habitat can be global. They also discuss the good and bad habitat changes humans sometimes cause while satisfying their wants and needs.

You can teach this lesson during social studies.

Skill Building Activity: Using Models in Science

Children study various types of models and learn how they are used in science. They also make models of their own.

Skill Building Activity: Using Field Guides

Children learn how to use a field guide to identify and learn about a specimen. This lesson can be done with any field guide about any type of organism or object.

Parts or all of this lesson can be done during a class language arts period or during independent reading and writing times.