

Beetopia Lesson 2: Habitat



Students apply their knowledge of bees' lifelong needs to build Minecraft "beetopias" to support and grow their very own bee colonies.

Guiding Ideas

This project was developed with the American Beekeeping Federation's Kids and Bees program. Explore a new Minecraft world, created by Lifeboat, and use new lessons to introduce students to bees' dynamic and fascinating roles in their own hives and in broader ecosystems. Habitat is Lesson 2 of 3 for Beetopia.

Learning Objectives

- NGSS Crosscutting Concepts: Cause and Effect
- NGSS Science and Engineering Practices: Defining Problems; Designing Solutions
- NGSS Disciplinary Core Ideas: LS1.C: Organization for Matter and Energy Flow in Organisms; LS2.A: Interdependent Relationships in Ecosystems; LS2.C: Ecosystem Dynamics, Functioning, and Resilience
- Recognize the dynamic relationship between bees and their habitats

Performance Expectations

This lesson will enable students to:

- Describe what a bee needs in order to survive
- Identify common threats to bees' survival

Skills

Creativity, Critical Thinking, Project Based Learning

Total time needed

55-75 minutes + optional 15-30 minute activity

Materials needed for classroom activities

One copy of "Building Beetopia" worksheet for each small group of 3-4 students

Introductory questions

- What do all living things need in order to survive?
- What can threaten a bee's survival?

Student Activities

Introduction (whole class) 10-15 minutes

Explain to students that in this lesson, they will build "beetopias" to serve as healthy, happy homes for their own Minecraft bee colonies. But before they can build the perfect habitat for bees, they have to learn what bees need! As a class, read the Bumblebee Conservation Trust's page on the Bumblebee Lifecycle, which illustrates how a bee relies on many

different habitat components throughout the year. Use the questions above to highlight bees' habitat requirements, and invite students to brainstorm some threats to bees' survival.

Minecraft Beetopia (explore as individuals) 35-45 minutes

Direct students to travel to Beetopia. Once they are there, ask them to talk to the NPC Bee Girl who will introduce Beekeeper Sarah. Sarah will teach the students about what a bee colony needs to survive (habitat) and about the challenges bees face.

Then ask the students to meet Carl at the "Sweat Bee Garden" and explore here and in the "Bumble Bee Garden" (also visited in Beetopia Lesson "Bumble Buzz"). Invite students to put a camera, quill, and pen from the chest into their inventory to record what they learn along the way.

After students have had time to explore the "Sweat Bee Garden" and the "Bumble Bee Garden", ask them to turn their attention away from the game and toward the classroom. Discuss with the students what they discovered while walking in the gardens, highlighting bees' habitat requirements, and threats to their survival.

Next, direct students to return to the game, where they will walk to the empty field next to the "Sweat Bee Garden" or the "Bumble Bee Garden." There, they will use the inventory they have collected from the bee garden chests to build their own bee-friendly gardens, based on what they have learned about bees' needs.

Students can dig holes with the shovels to make nests in the ground, plant flowers, and create ponds; this can be done individually or in collaboration mode with a small group of other players. After they have built their gardens, they can add bees, and watch as the bees pollinate nearby flowers and return to the nest, covered in pollen!

Please note that other bee NPCs exist in Beetopia; students will interact with them in other lessons. Also note that many of the NPCs have videos to share, so make sure students have headphones.

In-Class Discussion (small groups) 10-15 minutes

Split the students up into small groups, and hand out one [Building Beetopia](#) worksheet to each small group. If students were collaborating on a garden, direct them to be in different small groups than they were in the game. Ask students to discuss in their new small groups what choices they made when building their "beetopia", using the topics on the worksheet as a guide; direct students to choose a scribe in each small group to fill in the worksheet as the group talks.

Gather the whole class back together. Invite a representative from each group to share with the class one of the ways in which bee colonies are like human families.

Optional Creative Writing Exercise - 15-30 minutes

Ask students to write a poem or narrative story describing what it's like to be a bee. Direct them to use information they've learned not just in this lesson but in other Kids and Bees lessons as well: this may include information about preferred habitat, jobs in a hive, markings or coloration, threats to survival, adaptations, and much more.

External Resources

[Minecraft Beetopia File](#) - Download Beetopia and open with Minecraft: Education Edition. You'll find this resource in your Templates, under Create New.

[Building Beetopia Worksheet](#) - This worksheet guides students in reflecting on their design choices when building their beetopias.

[Lifecycle of a Bumblebee](#) - This resource from the Bumblebee Conservation Trust describes the seasonal life cycle of bumble bees with text and images.

[Bicolored Metallic Green Sweat Bee](#) - This is one of 14 known species of *Agapostemon* in the United States and Canada. Most are eastern or western species. *Agapostemon virescens* is found throughout, although less commonly in the south.

Vocabulary

Brood - immature honey bees: eggs, larva, and pupa

Larva (plural, larvae) - the second stage of bee brood development; a white, legless, grub-like insect

Cocoon/pupa - the third stage in the development of bee brood, where the adult larva metamorphoses into an adult bee

Further Study

[The Bees in Your Backyard, by Joseph S. Wilson and Olivia J. Messinger Carril](#)

[Bumble Bees of North America, by Sheila Colla, Leif Richardson, Robbin W. Thorp, Paul Hugh Williams](#)