

Life Cycles & Habitats

Amazing Earth - 2nd

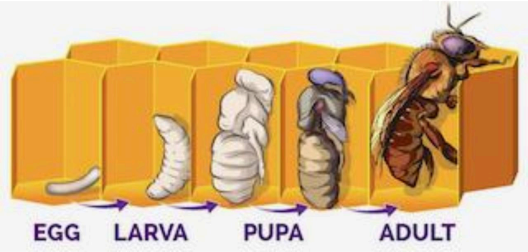
Quick-Start Notes for Parent Presenters:

• **Visual Action Cues:** Highlighted in **[BOLD AMBER BRACKETS]** so you know exactly when to click to advance slides or play videos.

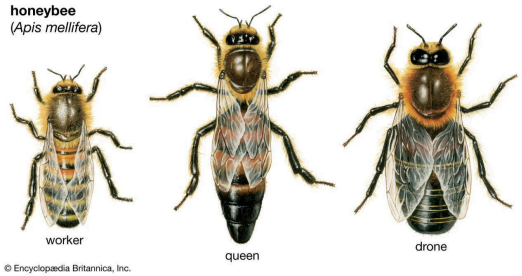
• **Student Participation:** Questions to ask the class are highlighted in **[BLUE CALLOUT BOXES]** along with answer keys and guidance.

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 01: Life Cycles & Habitats *(On-Screen: Butterfly garden photo by the NEST)*  Life Cycles & Habitats Amazing Earth - 2nd	This quarter you have been learning a lot about life cycles and how living organisms interact with other living organisms and their surroundings in their habitats to meet their life needs. You started by learning about monarchs and their amazing life cycle and how their habitat provides food, air, water, shelter, and space—exactly what they need to grow, survive, and reproduce. **[STUDENT PARTICIPATION]** **"Tell me, does anyone recognize this habitat?"** *Tip: Let 1 student answer* *Answer Key: The butterfly garden by the NEST* We know the milkweed in the garden provides a place for monarchs to lay eggs and food for their caterpillars to eat. But what happens when the monarchs migrate south and the milkweed spreads their seed and their leaves, stems, and seed pods die back for the season? Let's see who else calls this home. **[CLICK: Advance to Slide 02]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 02: Goldenrod & Pollinators *(On-Screen: Image of Goldenrod garden in bloom linked to a video)* 	**[CLICK & PLAY: Short video zooming into goldenrod]** As the milkweed's leaves, stems, and seed pods die back, the goldenrod behind it begins to bloom. **[STUDENT PARTICIPATION]** **"Raise your hand if you saw the bee sipping nectar from the goldenrod!"** *Tip: Pause for hands raise* Here's something fun! The bee is also helping the goldenrod because goldenrod pollen is too heavy and sticky to be dispersed by wind. It is usually moved from plant to plant by pollinators. Today we are going to investigate and explore bees. We are going to focus on a bee that plays an important role in food production and pollinates over 100 crops—the honey bee! **[CLICK: Advance to Slide 03]**

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SLIDE 03: Bee Life Cycle *(On-Screen: Diagram of 4 life cycle stages: Egg, Larva, Pupa, Adult)*  	Let’s start with its life cycle. Bees have 4 stages in their life cycles. They change from an egg, to larva, to pupa, and then to an adult. Let’s see what this looks like with a close-up view! **[CLICK: Advance to Slide 04]**

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SLIDE 04: Life Cycle Close-Up Video *(On-Screen: Close-up honeycomb view linked to a video)*  **[PAUSE FOR VIDEO: 60 SEC]**	**[CLICK & PLAY: 1-Minute Video]** *Backup video link available in presentation notes if needed.* **[CLICK: Advance to Slide 05]**
SLIDE 05: Do Bees Have Jobs? *(On-Screen: "Do bees have jobs?")* Do bees have jobs?	There is a lot going on inside the beehive to keep this life cycle going. **[STUDENT PARTICIPATION]** **"How do you think that works? Do adult honeybees have jobs? Everyone who thinks they do, raise your hand."** *Tip: Pause for show of hands before advancing* **[CLICK: Advance to Slide 06]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 06: Bee in a Suit (Humor Reveal) *(On-Screen: Image of a bee wearing a business suit)* 	Yes, but not like adult humans! All living things must grow, survive, and reproduce. Honeybees have evolved to do this together in colonies. There are different types of bees in the colony, each with a different role or job. **[CLICK: Advance to Slide 07]**
SLIDE 07: Colony Roles *(On-Screen: Illustrations of Worker, Queen, Drone)* 	Let’s start with the Queen. This female bee lays eggs. Drones are the male bees that mate with the queen. Workers are the female bees that look for food, build and protect the hive, and clean and move air by beating their wings. **[CLICK: Advance to Slide 08]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 08: How Do Bees Make Honey? *(On-Screen: "How do bees make honey?")* How do bees make honey?	Let's get to the good stuff! The honey. Let's watch a video to learn how bees make honey! **[CLICK: Advance to Slide 09]**
SLIDE 09: How Bees Make Honey Video *(On-Screen: Image of bees and a honeycomb linked to a video)* 	**[CLICK & PLAY: 2 MIN 44 SEC VIDEO]** *Backup video link available in presentation notes if needed.* **[CLICK: Advance to Slide 10]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 10: How do bees find nectar? *(On-Screen: "How do bees find nectar?")* How do bees find nectar?	That is a pretty amazing process! How do bees find the flower nectar they use? **[STUDENT PARTICIPATION]** **"What is a bee's super power?"** *Tip: Let 1 or 2 students answer. Do not give away the answer and instead say "Maybe" or "Interesting idea".* Let's watch a video to see! **[CLICK: Advance to Slide 11]**
SLIDE 11: Bee Vision Video *(On-Screen: Up-close image of a bee and "Bee Vision" linked to a video)* 	**[CLICK & PLAY: Bee Vision Video]** *Backup video link available in presentation notes if needed.* **[CLICK: Advance to Slide 12]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 12: Today, We Are Entomologists! *(On-Screen: Dr. Margaret Couvillon standing near a bee colony)* Today, we are entomologists! 	Just imagine for a second how much of nature is invisible unless you see it through the right pair of eyes! Now it is time to be scientists. Today, we are going to be entomologists! An entomologist is a scientist who studies insects. Did you know if you are interested in bees you can study this in college and beyond? This is a photo of Dr. Margaret Couvillon. She runs a lab at Virginia Tech where they are investigating how pollinators collect their food, with a specific focus on honey bee foraging, recruitment, and health. Today, we are going to investigate how bees: 1) Pollinate flowers 2) Find nectar 3) Make honey Let’s get to work!