

Insects: **Which One Doesn't Belong?**

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Science Objective

Insects are everywhere, and like other living things they need air, water, food, and space. An insect has six legs, a body with three parts, and antennae. Some insects undergo complete metamorphosis, and change form in their adult stage. Others undergo a simple metamorphosis.

iScience Puzzle: Which One Does Not Belong?

The four creatures shown in this puzzle may all look like insects, but as children will discover as they read this book, an organism needs certain characteristics to be called an insect. All but one creature have bodies divided into a head, a thorax, and an abdomen, and also have antennae and six legs.

Objectives ► Children will:

- learn the definition of an insect.
- compare and contrast insects' structures and characteristics.
- describe the life cycles of insects.
- learn what happens during simple and complete metamorphosis.

Lesson Plan

Before Reading

Investigation

Ask children to name some bugs they think are insects. Write the list on the board. Tell them they may change their mind about some of the bugs when they have finished reading this book.

Ask: *Why are insects important? Why do we need insects? Why should we study insects?*

Science Concepts

There is enormous diversity in the world of insects.

Asking questions that require critical thinking stimulates children's interest.

Explain that there are many kinds of insects in the world. Insects change and grow in unusual ways. Encourage children to think about insects as amazing creatures as they answer the questions in this book.

During Reading

Investigation

pp. 6–7: Discuss the four creatures shown on these pages. Ask: *What do you know about each creature? Where have you seen them?*

p. 8: When children are grouping pictures by shared characteristics, have them group all pictures they think show insects.

pp. 9–10: Begin a list of characteristics of insects on the board, and add to it as children continue reading.

p. 11: Ask: *How do you think having a skeleton on the outside helps insects? Why do insects need to molt?*

p. 12: Ask: *How are insects able to find food? How strong do you think their sense of smell is?*

p. 13: Ask: *How does having eyes that can look in many directions at once help insects?*

p. 14: Challenge children to guess why a silkworm is considered an insect. After all, it doesn't have six legs, three body segments, and antennae. Then tell them they will learn the answer as they continue to read.

p. 15: Review characteristics of insects on the previous pages. Ask: *What sounds can you think of that insects make? What insects make those sounds?*

Science Concepts

Accessing prior knowledge gets children thinking about the topic.

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Insects have six legs, a head, a thorax, an abdomen, and antennae.

Insects have similar structures.

Insects have similar structures and senses. Their sense of smell works through their antennae.

Insects have similar structures and senses. Most insects see through compound eyes.

Silkworm larvae produce silk.

Most insects make sounds.

During Reading (continued)

Investigation

p. 16: Ask: *Have you ever acted like an entomologist, catching insects to watch them and learn about them?*

pp. 17–19: Ask: *When a caterpillar becomes a butterfly, does it act differently?* Refer back to the silkworm and have children tell why it is an insect. Make sure children know the silkworm is a moth, not a butterfly. Help children differentiate between moths and butterflies.

p. 21: Have children choose another insect, such as the termite or the stink bug, and learn about it. Remind them that they already know a lot about this new insect, even before they start their research.

Science Concepts

Entomologists believe there are still undiscovered and unnamed insects in the world.

Some insects go through a life cycle from eggs to adult. Others go through metamorphosis, from egg to larva to pupa to adult. Others go through a simple metamorphosis, from egg to nymph to adult.

Applying information they have learned about some insects to other insects helps children develop a greater depth of understanding.

After Reading

Restate the key ideas in this book. Insects have six legs, antennae, and a segmented body of a head, a thorax, and an abdomen.

Insects have a common structure and a strong sense of sight and smell; some also make sounds that are audible to humans. Insects are hatched from eggs and become adults, but some go through a simple or a complete metamorphosis during their life cycle.

Encourage children to explain the differences in life cycles.

Investigation

Bring in a local insect in a clear container. Have children observe the insect and draw and label its parts. Explore how the insect behaves, what it eats, and what kind of environment it lives in.

Bring children on a nature walk to find some insects. Have children take notes about the environment that the insects live in.

Understanding Science

Making observations is fundamental to the study of science, as is conducting research.

Insects live in habitats in the ground, above ground, or in water.