Dragonfly

Life Science | Lesson Guide

Kindergarten

Photo Description

A dragonfly sits on a piece of wood. The dragonfly has big blue eyes and clear wings. Its body has yellow and black stripes.

Scientific Phenomena

This image represents the Anchoring Phenomenon of insect adaptation and survival behaviors. The dragonfly is demonstrating perching behavior, which allows it to rest while maintaining a strategic position for hunting prey and monitoring its territory. The large compound eyes visible in the image are perfectly positioned to detect movement in nearly all directions, while the wing structure enables rapid flight when needed. This behavior showcases how insects have evolved specific body structures and behaviors that help them survive in their environment.

Core Science Concepts

1. Animal Body Parts and Functions: Dragonflies have special body parts that help them survive - big eyes for seeing, strong wings for flying, and long bodies for balance.

2. Living vs. Non-living: The dragonfly is a living thing that moves, breathes, and needs food, while the wood it sits on was once living but is now non-living.

3. Animal Needs: Like all animals, dragonflies need food, water, air, and shelter to stay alive and healthy.

4. Habitats: Dragonflies live near water where they can find food and lay their eggs.

Pedagogical Tip:

Use the "See, Think, Wonder" thinking routine with this image. Have students first observe what they see, then share what they think about the dragonfly, and finally ask questions about what they wonder.

UDL Suggestions:

Provide multiple ways for students to share observations - through drawing, verbal descriptions, or acting out dragonfly movements. This supports diverse learners and communication styles.

Zoom In / Zoom Out

1. Zoom In: The dragonfly's compound eyes contain thousands of tiny lenses called ommatidia that work together like a mosaic to create vision. Each tiny lens captures a small piece of the picture, and the dragonfly's brain puts all the pieces together.

2. Zoom Out: Dragonflies are important parts of pond and wetland ecosystems. They eat mosquitoes and other small insects, helping control pest populations. They also serve as food for birds, fish, and frogs, connecting water and land food webs.

Discussion Questions

1. What body parts do you notice on this dragonfly that help it survive? (Bloom's: Analyze | DOK: 2)

2. How do you think the dragonfly uses its big eyes? (Bloom's: Apply | DOK: 2)

3. What do you think this dragonfly needs to stay alive and healthy? (Bloom's: Understand | DOK: 1)

4. If you were a dragonfly, what would you like about living near water? (Bloom's: Create | DOK: 3)

Potential Student Misconceptions

1. Misconception: "Dragonflies can sting or bite people and are dangerous."
Reality: Dragonflies cannot sting and rarely bite. They are harmless to humans and actually helpful because they eat mosquitoes.

2. Misconception: "All insects are bad or scary."
Reality: Most insects, like dragonflies, are helpful to people and the environment. They pollinate plants and eat pests.

3. Misconception: "Dragonflies are the same as flies."
Reality: Dragonflies are different from regular flies - they have four wings instead of two and cannot fold their wings against their bodies.

Cross-Curricular Ideas

1. Math - Counting and Patterns: Count the dragonfly's body parts (2 eyes, 4 wings, 6 legs). Create simple patterns using dragonfly colors - yellow, black, blue - using colored blocks or paper strips. Students can also practice sorting insects by number of wings.

2. ELA - Descriptive Writing and Storytelling: Have students draw a dragonfly and label its body parts with teacher support. Create a class story together about "A Day in the Life of a Dragonfly" where each student contributes one sentence. Read dragonfly picture books and act out the life cycle using movement and dramatic play.

3. Art - Mixed Media Collage: Create dragonflies using tissue paper, sequins, and pipe cleaners to represent the body, wings, and legs. Students can paint or color a water habitat scene and glue their dragonfly creations onto it, combining fine motor skills with artistic expression.

4. Social Studies - Community Helpers: Introduce the concept that scientists study insects like dragonflies to help us learn about nature. Discuss how people who work near water (park rangers, aquarium workers) might see dragonflies and why it's important to protect their habitats.

STEM Career Connection

1. Entomologist (Bug Scientist): An entomologist is a scientist who studies insects like dragonflies. They watch how insects live, what they eat, and how they grow. Entomologists help us understand why insects are important to our world and how to protect them. Average Salary: $65,000 USD annually

2. Wildlife Photographer: A wildlife photographer takes beautiful pictures of animals in nature, just like the photo you're looking at! They spend time outdoors learning about animals and using cameras to capture special moments. These photos help teach other people about nature. Average Salary: $48,000 USD annually

3. Environmental Scientist: An environmental scientist studies nature and helps protect places where animals like dragonflies live, especially near water. They work to keep habitats healthy so dragonflies and other creatures have safe homes. Average Salary: $73,000 USD annually

NGSS Connections

- Performance Expectation: K-LS1-1 - Use observations to describe patterns of what plants and animals (including humans) need to survive.
- Disciplinary Core Idea: K-LS1.C - All animals need food in order to live and grow. They obtain their food from plants or from other animals.
- Crosscutting Concept: Patterns - Patterns in the natural and human designed world can be observed and used as evidence.

Science Vocabulary

* Dragonfly: An insect with four clear wings and big eyes that lives near water
* Compound eyes: Special eyes made of many tiny parts that help see in all directions
* Insect: A small animal with six legs and three body parts
* Habitat: The place where an animal lives and finds everything it needs
* Predator: An animal that hunts and eats other animals

External Resources

Children's Books:
- Are You a Dragonfly? by Judy Allen
- Dragonfly at Loon Lake by Brenda Z. Guiberson
- Waiting for Wings by Lois Ehlert