Predator and Prey

Life Science | Lesson Guide

1st Grade

Photo Description

A green dragonfly sits on a green plant. The dragonfly has four clear wings with lines on them. A small blue and green lizard is also on the plant near the dragonfly.

Scientific Phenomena

This image shows a predator-prey relationship in action. The gecko (small lizard) is likely hunting the dragonfly for food, while the dragonfly may be resting or feeding on the plant. This represents the natural feeding behaviors that help animals survive in their habitats. Both animals have special body parts that help them - the gecko has sticky toe pads for climbing and the dragonfly has strong wings for quick flight.

Core Science Concepts

1. Animal Body Parts and Functions: Both animals have special parts that help them survive - gecko's sticky feet for climbing and dragonfly's wings for flying
2. Predator-Prey Relationships: Some animals eat other animals to get energy and survive
3. Animal Habitats: Both animals live in places that give them what they need - plants provide shelter and hunting grounds
4. Animal Behaviors: Animals do things like hunting, hiding, and moving to stay alive

Pedagogical Tip:

Use hand motions and body movements when discussing animal behaviors. Have students "fly" like dragonflies and "climb" like geckos to help them remember how body parts help animals survive.

UDL Suggestions:

Provide multiple ways for students to show their understanding: drawing pictures of animals and their body parts, acting out predator-prey relationships, or using toy animals to demonstrate concepts for students who may struggle with abstract thinking.

Zoom In / Zoom Out

1. Zoom In: The gecko's toe pads have tiny hairs called setae that use molecular forces to stick to any surface, even upside down on glass
2. Zoom Out: This predator-prey interaction is part of a larger food web where energy flows from plants to insects to reptiles, helping maintain balance in the ecosystem

Discussion Questions

1. What body parts help the dragonfly and gecko survive in their habitat? (Bloom's: Analyze | DOK: 2)
2. How might the gecko use its special feet to catch food? (Bloom's: Apply | DOK: 2)
3. What do you think would happen if there were no dragonflies in this habitat? (Bloom's: Evaluate | DOK: 3)
4. How are the gecko's feet different from your feet, and why? (Bloom's: Compare | DOK: 2)

Potential Student Misconceptions

1. Misconception: "The lizard and dragonfly are friends playing together"
   Reality: This shows a hunting situation where the gecko sees the dragonfly as food

2. Misconception: "All insects are bad and should be eaten"
   Reality: Insects like dragonflies are important parts of nature that help control other bugs and pollinate plants

3. Misconception: "Animals only need food to survive"
   Reality: Animals need food, water, shelter, and space to live and grow

Cross-Curricular Ideas

1. Math - Counting and Patterns: Count the dragonfly's wings (4) and legs (6). Look at the patterns on the dragonfly's wings and create similar dot or line patterns using markers and paper. Compare sizes: "Is the gecko bigger or smaller than the dragonfly?"

2. ELA - Descriptive Writing and Storytelling: Have students dictate or write simple sentences describing what they see: "The green dragonfly has clear wings." Create a class story together: "What happens next between the gecko and the dragonfly?" Read picture books about insects and reptiles, then draw favorite characters.

3. Art - Nature Collage and Wing Design: Create dragonfly wings using tissue paper or cellophane to explore transparency. Design colorful gecko patterns using dot markers or stickers. Make a habitat diorama using green paper, plants, and toy animals to show where these creatures live.

4. Social Studies - Animal Homes and Communities: Discuss where dragonflies and geckos live in the world. Talk about different habitats (rainforests, gardens, wetlands) and the communities of animals that live there together. Create a simple map showing where these animals are found.

STEM Career Connection

1. Entomologist (Bug Scientist): An entomologist studies insects like dragonflies. They learn how insects grow, what they eat, and how they help our world. They might work outside catching and watching bugs, or in labs looking at them under microscopes. Average Salary: $65,000/year

2. Herpetologist (Reptile Scientist): A herpetologist studies reptiles like geckos and snakes. They learn about how these animals live, what they need to stay healthy, and help protect them. They might work in zoos, in nature, or in offices learning about different reptiles. Average Salary: $58,000/year

3. Wildlife Photographer: A wildlife photographer takes pictures of animals in nature, just like the photo you're looking at! They spend time outside finding animals, learning their behaviors, and using cameras to show people how amazing nature is. Their photos help teach others about animals and habitats. Average Salary: $62,000/year

NGSS Connections

- Performance Expectation: 1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs
- Disciplinary Core Ideas: 1-LS1.A Structure and Function - All organisms have external parts that they use to perform daily functions
- Crosscutting Concepts: Structure and Function - The shape and stability of structures are related to their function

Science Vocabulary

* Predator: An animal that hunts and eats other animals
* Prey: An animal that gets eaten by other animals
* Habitat: The place where an animal lives and gets what it needs
* Function: The job that a body part does to help an animal
* Survive: To stay alive by getting food, water, and shelter

External Resources

Children's Books:
- What Do You Do With a Tail Like This? by Steve Jenkins
- Dragonfly by Emery Bernhard
- Gecko by Raymond Huber