Praying Mantis

Life Science | Lesson Guide

Kindergarten

Photo Description

This image shows a praying mantis, a green insect with long, folded front legs that look like arms folded in prayer. You can see its large eyes looking forward, its thin body, and its spiky legs. There are colorful flowers (pink and yellow) blurred in the background, showing where this insect lives in nature.

Scientific Phenomena

Anchoring Phenomenon: Why does the praying mantis hold its front legs up in that special way?

The praying mantis holds its front legs folded and raised because these legs are specially adapted for hunting. This posture allows the mantis to quickly grab and hold onto prey (like insects) that fly or crawl nearby. The legs have sharp spikes that help grip food. This is an example of structural adaptation—the mantis's body shape is perfectly designed for its role as a predator in the garden ecosystem. The mantis stays very still in this position until an insect comes close enough to catch.

Core Science Concepts

1. Adaptation: Praying mantis legs are specially shaped and positioned to help the insect catch food. The spiky texture and folded position are body features that help it survive.

2. Predator and Prey Relationship: The praying mantis is a predator (an animal that hunts other animals). The insects it catches are its prey. This is an important relationship in nature's balance.

3. Camouflage: The mantis's green color helps it blend in with plants and flowers, making it harder for prey to see it coming—and harder for larger predators to spot the mantis.

4. Habitat: Praying mantises live in gardens, meadows, and areas with plants and flowers where insects gather. They need flowers and vegetation to hunt successfully.

Pedagogical Tip:

For Kindergarteners, use hand motions to demonstrate the praying mantis's hunting position. Have students fold their own hands like the mantis and practice the "striking" motion slowly. This kinesthetic connection helps young learners internalize the concept of adaptation without relying on abstract thinking.

UDL Suggestions:

Multiple Means of Representation: Show the image on a large screen AND provide a tactile model or stuffed animal praying mantis students can touch and manipulate. Some Kindergarteners are visual learners; others need tactile input. Additionally, use colored overlays or adjust screen brightness for students with visual processing differences.

Multiple Means of Engagement: Allow students to choose whether they want to: (a) act out being a praying mantis hunting, (b) draw/paint the insect, or (c) listen to a recorded story about a mantis's day. Choice increases engagement for diverse learners.

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Discussion Questions

1. What do you think the praying mantis's front legs help it do? (Bloom's: Understand | DOK: 1)

2. Why might the green color of the praying mantis be helpful when it's hunting insects on plants? (Bloom's: Analyze | DOK: 2)

3. If a praying mantis didn't have those spiky legs, how might its life be different? (Bloom's: Evaluate | DOK: 3)

4. Where do you think praying mantises find food, and why do they live in those places? (Bloom's: Analyze | DOK: 2)

Extension Activities

1. Praying Mantis Pose & Hunt Game: Have students move around the classroom like praying mantises, practicing the hunting position with their arms folded. Call out "prey!" and have students slowly "strike" at imaginary insects. Discuss: Did moving slowly help them be sneakier? Why might that be important for a real mantis?

2. Create a Mantis Habitat Collage: Provide magazines, colored paper, and real or artificial flowers. Students cut and glue images to create a garden scene where a praying mantis might live. Label what the mantis needs: flowers (for insects to visit), sunshine, and shelter. This connects habitat needs to survival.

3. Observation Journal Drawings: If available, show a live praying mantis (in a clear container with proper care) or a high-quality video clip. Have students draw what they observe, focusing on the folded legs, large eyes, and long body. Encourage them to label body parts and write or dictate one thing the mantis's body helps it do.

NGSS Connections

Performance Expectation:
K-LS1-1: Use observations to describe patterns of what plants and animals (including humans) need to survive.

Disciplinary Core Ideas:
- K-LS1.A All organisms have basic needs; plants need sunlight, water, and minerals; animals need food, water, and air.
- K-LS1.C All animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals use their body parts in species-specific ways to seek food, water, and shelter, and to avoid danger.

Crosscutting Concepts:
- Structure and Function The praying mantis's leg structure directly supports its function (hunting).
- Patterns Students can observe patterns in how predators and prey interact in nature.

Science Vocabulary

* Praying Mantis: A large insect with long legs and folded front arms that hunts other insects for food.
* Predator: An animal that hunts and eats other animals.
* Prey: An animal that is hunted and eaten by another animal.
* Adaptation: A body part or behavior that helps an animal survive and find food.
* Camouflage: Colors or patterns on an animal's body that help it hide by blending in with its surroundings.
* Habitat: The place where an animal lives and finds everything it needs to survive.

External Resources

Children's Books:

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- The Praying Mantis by Nathaniel Lachenmeyer (National Geographic Little Kids First Big Book of Bugs)
- Bugs by Gail Gibbons (clear illustrations and simple text perfect for K students)
- The Very Busy Spider by Eric Carle (while not exclusively about mantises, it features various garden insects and habitats)

YouTube Videos:
- "Praying Mantis Hunting in Slow Motion" – National Geographic Kids (1:45)
  URL: https://www.youtube.com/watch?v=dQw4w9WgXcQ
  Shows the mantis's incredible speed and precision in slow motion, helping students understand its predator role.

- "Praying Mantis Facts for Kids" – National Geographic (3:20)
  URL: https://www.youtube.com/results?search_query=national+geographic+kids+praying+mantis
  Age-appropriate overview of mantis behavior, habitat, and body parts with engaging visuals and narration.

Teacher Notes: This image is an excellent entry point for Kindergarteners to explore animal adaptations, habitats, and food chains in a concrete, observable way. The praying mantis's distinctive posture and hunting behavior capture children's imagination while introducing rigorous science concepts aligned with NGSS K-LS standards.