Orb Weaver

Life Science | Lesson Guide

1st Grade

Photo Description

A large spider with long, thin legs is standing on a person's hand. You can see the spider's brown body and its eight legs very clearly. Spiders are animals that live all around us, and some spiders make sticky webs to catch their food.

Scientific Phenomena

Anchoring Phenomenon: Why do spiders have so many legs, and why do some spiders make webs?

Spiders are living creatures that have eight legs (not six like insects). Their legs help them move quickly and climb on many surfaces. Some spiders, like the orb weaver shown here, spin webs from special silk that comes from their bodies. The web is sticky and helps the spider catch flying insects for food. This is an example of how animals have special body parts that help them survive and find food in their environment.

Core Science Concepts

- Animals Have Different Body Parts: Spiders have eight legs, eyes, and a body that work together. Different animals have different numbers of legs and different features.

- Animals Need Food: Spiders are hunters. They use their webs to catch insects to eat. This shows how animals find and eat food to survive.

- Structures Help Animals Survive: Spider webs are structures that spiders make using silk from their bodies. The web's sticky surface helps the spider catch food, which is a special adaptation.

- Habitats Support Animals: Spiders live in many different places—gardens, homes, trees, and fields. Each habitat provides what spiders need to live.

Pedagogical Tip:

For First Grade, avoid focusing on spider fear. Instead, emphasize that spiders are helpful hunters that eat pest insects. Use calm, matter-of-fact language: "Spiders are animals, just like dogs and birds." Many students may have spider anxiety, so normalize them as beneficial organisms. If a student is afraid, validate the feeling while gently providing accurate information.

UDL Suggestions:

Multiple Means of Engagement: Some students may be nervous about spiders. Provide options: students can observe from a distance, look at pictures, or handle a toy spider instead of a real one. Multiple Means of Representation: Use real images, drawings, diagrams, and videos so visual learners see spiders in different ways. Multiple Means of Action/ Expression: Allow students to show learning through drawing, building with materials, acting out spider movements, or verbal discussion—not just writing.

Discussion Questions

1. What body parts does a spider have that help it catch food? (Bloom's: Remember | DOK: 1)

2. Why do you think a spider needs eight legs instead of two legs like people? (Bloom's: Analyze | DOK: 2)

3. How is a spider's web like a trap? What does it catch? (Bloom's: Understand | DOK: 2)

4. If a spider didn't have silk to make a web, how else might it catch food? (Bloom's: Evaluate | DOK: 3)

Extension Activities

1. Spider Leg Walk: Have students practice walking on their hands and feet like a spider, using four limbs. Discuss how having eight legs (or using four) helps animals move in different ways. This kinesthetic activity helps students understand that body structures match what animals do.

2. Make a Web with Yarn: Provide yarn, sticks, and tape. Students create their own "web" by stretching yarn between sticks in a pattern. Then, place small foam pieces ("insects") on the web and discuss how the sticky structure helps catch food. This connects structure to function.

3. Spider Observation Journal: If safe and age-appropriate, observe a live spider (in a clear container) or show pictures/videos. Students draw what they see and dictate or write one thing the spider is doing. Focus on: Where is it? What is it doing? What do its legs look like?

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 structures that serve different functions in growth, survival, and reproduction.
- K-LS1.C All animals need food; plants need water and light.

Crosscutting Concepts:
- Structure and Function — Spider legs and webs have specific structures that help spiders do what they need to do.
- Patterns — Spiders show patterns in how they build webs and hunt for food.

Science Vocabulary

- Spider: A small animal with eight legs and a body that makes silk to build webs.
- Web: A sticky net that a spider builds to catch insects for food.
- Legs: The eight moving body parts that help a spider walk and climb.
- Silk: A thin, strong material that comes from a spider's body and is used to make webs.
- Insect: A small animal with six legs (like ants, beetles, and flies) that spiders hunt for food.
- Habitat: The place where an animal lives and finds everything it needs.

External Resources

Children's Books:
- The Very Busy Spider by Eric Carle — A classic picture book showing a spider building a web, perfect for First Grade.
- Are You a Spider? by Judy Allen and Tudor Humphries — Follows a spider's life cycle and behaviors in simple language.

- Spinning Spiders by Melvin Berger — Non-fiction book with photos and simple facts about how spiders spin webs.

YouTube Videos:
- "How Spiders Make Webs" by National Geographic Kids — Brief, engaging video showing a time-lapse of web-building. (https://www.youtube.com/results?search_query=national+geographic+kids+spider+web) Note: Search National Geographic Kids channel for this title.
- "Spider Body Parts" by Crash Course Kids — Simple, animated explanation of spider anatomy with clear visuals. (https://www.youtube.com/watch?v=6yqML4uJ_OQ) Verify current availability.

Teacher Note: This lesson builds foundational understanding that animals have different structures suited to their survival needs. First graders are naturally curious but may also be fearful of spiders. Create a safe, positive learning environment by emphasizing that spiders are helpful and belong in nature. Use real observations and play-based activities to deepen understanding.