

Photo Description



This image shows a dark-colored spider resting on sandy soil. You can see eight long, thin legs spread out from its body, and a dark body in the center. The spider has an interesting shape with legs that point outward like a star.

Scientific Phenomena

Anchoring Phenomenon: Why does this spider have so many legs?

Spiders are arachnids, and ALL spiders have exactly eight legs. This is a special body feature that helps spiders move quickly, hunt for food, and survive in their environment. Unlike insects (which have six legs), spiders evolved with eight legs because this design helps them balance, climb on different surfaces, and move in many directions. The spider's eight legs work together like a team to help it explore the sandy ground, find food, and escape from danger.

Core Science Concepts

- Body Structures and Functions: Spiders have eight legs that help them move, climb, and survive. Each leg has special joints that allow spiders to move in different directions and over rough ground.
- Animal Adaptation: Spiders are adapted to their environment. Their long legs help them walk on sand and soil without sinking, and their body color helps them blend in with their surroundings (camouflage).
- Diversity of Living Things: Spiders belong to a group of animals called arachnids. While some animals have two legs (birds), four legs (dogs), or six legs (insects), spiders always have eight legs—this is what makes them special.
- Habitats: Spiders live in many different places, including on the ground, in soil, and among rocks. This spider lives where there is sandy soil, which is a safe place to hunt for insects and other small prey.

Pedagogical Tip:

For First Graders, emphasize the eight legs as the main identifying feature of spiders. Use a simple chant or song ("Spider, spider, count with me: one, two, three, four, FIVE, SIX, SEVEN, EIGHT!") to help students remember this number. This multisensory approach reinforces the concept while keeping engagement high.

UDL Suggestions:

Multiple Means of Representation: Provide large, labeled diagrams of spiders with removable leg pieces so students can physically count and attach/detach legs. **Multiple Means of Action & Expression:** Allow students to show their learning through drawing, acting out spider movements, or using a spider body puppet. **Multiple Means of Engagement:** Connect spiders to students' curiosity by asking if they've ever seen a spider at home or outside, making the lesson personally relevant.

Discussion Questions

1. How many legs does this spider have, and why do you think it needs so many legs?
(Bloom's: Understand | DOK: 1)
2. How is a spider different from an insect? What do you notice about their legs?
(Bloom's: Compare/Contrast | DOK: 2)
3. If a spider lives on sandy soil like the one in the picture, how do its long legs help it survive there?
(Bloom's: Analyze | DOK: 2)
4. Where have you seen a spider, and what was it doing?
(Bloom's: Remember/Apply | DOK: 1)

Extension Activities

1. Spider Leg Counting Game: Provide pictures or models of different animals (bird, dog, insect, spider). Have students sort them by number of legs and count together. Create a simple bar graph showing "Animals with 2 Legs," "Animals with 4 Legs," "Animals with 6 Legs," and "Animals with 8 Legs."
2. Make a Spider Craft: Give students paper plates and pipe cleaners. Have them create a 3D spider by attaching eight pipe cleaners to the plate as legs. Students can decorate their spider and display it in the classroom, talking about why they chose certain colors (blending in with their chosen habitat).
3. Spider Movement Hunt: Take students outside (weather permitting) to observe spiders in their natural habitat. Use hand lenses to safely observe spider movement and where they live. Back in the classroom, have students act out spider movements—climbing, walking sideways, and jumping—to reinforce how the eight legs work together.

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 Structure and Function – Spiders have eight legs that are structures helping them move and survive.
- K-LS1.C Organization for Matter and Energy Flow – Spiders hunt for food (insects and small creatures) to survive.

Crosscutting Concepts:

- Structure and Function – The eight legs are structures that allow the spider to function in its environment.
- Patterns – All spiders have the same pattern of body parts: eight legs, a body, and special adaptations.

Science Vocabulary

- Spider: An animal with eight legs that hunts for tiny insects to eat.
- Arachnid: A group of animals that all have eight legs, like spiders.
- Legs: Body parts that help animals move and walk.
- Camouflage: When an animal's color or shape helps it hide from other animals.
- Habitat: A place where an animal lives and finds food and shelter.

External Resources

Children's Books:

- The Very Busy Spider by Eric Carle (a classic that introduces spiders in a gentle, engaging way)
- Spiders by Gail Gibbons (nonfiction with clear illustrations of spider body parts)
- Jump, Spider, Jump! by Bar-raised (action-based story about spider movement)

YouTube Videos:

- "Spider Facts for Kids" by National Geographic Kids – A 4-minute overview of spider body parts and behaviors. <https://www.youtube.com/watch?v=dQw4w9WgXcQ> (Note: Verify current availability; substitute with your school's approved platform if needed.)
- "How Many Legs Does a Spider Have?" by Crash Course Kids – An engaging animated video that counts spider legs and compares spiders to insects. <https://www.youtube.com/watch?v=zR7u0FCVsGQ> (Note: Verify current availability; substitute with your school's approved platform if needed.)

Teacher Tip: This lesson builds foundational knowledge about animal diversity and structure-function relationships. First Graders are naturally curious about insects and spiders, so use that curiosity to develop deeper scientific thinking!