

## Photo Description



This image shows an owl with distinctive brown and white spotted feathers, pointed ear tufts, and large eyes. The owl is perched near white rocks and appears to be resting during daylight hours. Its mottled brown coloring helps it blend in perfectly with its rocky surroundings.

## Scientific Phenomena

The anchoring phenomenon here is animal camouflage and adaptation. This owl demonstrates how animals have evolved specific physical characteristics that help them survive in their environment. The owl's brown and white speckled feathers match the colors and patterns of tree bark, rocks, and shadows, making it nearly invisible to both predators and prey. This camouflage is an inherited trait that has developed over thousands of years through natural selection, where owls with better camouflage were more likely to survive and pass on their genes.

## Core Science Concepts

1. Animal Adaptations: Physical features like coloring, body shape, and feather patterns that help animals survive in their specific habitats.
2. Camouflage as a Survival Strategy: The ability to blend into surroundings to avoid detection by predators or to better hunt prey.
3. Inherited Traits: Characteristics passed from parent animals to their offspring through genes, including coloration patterns and body structures.
4. Predator-Prey Relationships: How animals use adaptations like camouflage to either catch food or avoid becoming food for other animals.

### Pedagogical Tip:

Use the "I Notice, I Wonder, It Reminds Me Of" thinking routine when first showing students this image. This helps activate prior knowledge and generates authentic questions that can drive the lesson forward.

### UDL Suggestions:

Provide multiple ways for students to demonstrate their understanding of camouflage - they could create drawings, build models with clay, write explanations, or even design their own camouflaged animal. This supports different learning styles and abilities.

### Discussion Questions

- What patterns do you notice in the owl's feathers and how might they help it survive? (Bloom's: Analyze | DOK: 2)
- How do you think an owl's camouflage helps it catch food and avoid danger? (Bloom's: Apply | DOK: 2)
- If this owl lived in a snowy environment instead of rocky areas, how might its appearance be different? (Bloom's: Evaluate | DOK: 3)
- What evidence can you find in the photo that shows this owl is well-adapted to its environment? (Bloom's: Analyze | DOK: 2)

### Extension Activities

**Camouflage Investigation:** Have students create their own camouflaged animals using construction paper, fabric scraps, and natural materials. Hide these creations around the classroom or schoolyard and have other students try to find them, discussing which designs work best.

**Adaptation Matching Game:** Students research different animals and their specific adaptations, then create cards to match animals with their survival strategies. Include animals from various habitats like arctic foxes, chameleons, and stick insects.

**Design Challenge:** Challenge students to design the "perfect" owl for a specific environment (desert, rainforest, or city). They must justify their design choices based on what they've learned about how structure relates to function.

### NGSS Connections

Performance Expectation: 5-LS2-1 - Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Disciplinary Core Ideas:

- 5-LS2.A - The food of almost any kind of animal can be traced back to plants
- 5-LS1.B - Animals have body parts that capture and convey different kinds of information

Crosscutting Concepts:

- Patterns - Similarities and differences in patterns can be used to sort and classify natural phenomena
- Structure and Function - The way an object is shaped or structured determines many of its properties and functions

### Science Vocabulary

- \* Adaptation: A special feature that helps an animal survive in its environment.
- \* Camouflage: Colors or patterns that help an animal blend in with its surroundings.
- \* Inherited trait: A characteristic passed down from parent animals to their babies.
- \* Predator: An animal that hunts and eats other animals.
- \* Prey: An animal that is hunted and eaten by other animals.
- \* Environment: The place where an animal lives, including all the living and non-living things around it.

### External Resources

Children's Books:

- What Do You Do With a Tail Like This? by Steve Jenkins and Robin Page
- Hiding in Plain Sight: Animal Camouflage by Carla Mooney

- Who Grew My Soup? by Tom Darbyshire

YouTube Videos:

- "Animal Camouflage | Learn How Animals Can Blend In With Their Environments" - Educational overview of different camouflage strategies in nature (<https://www.youtube.com/watch?v=E4cb9nPitDE>)
- "Owl Babies | BBC Earth" - Documentary footage showing owl behavior and adaptations in their natural habitat (<https://www.youtube.com/watch?v=sQx1pNSKJ8M>)