

Photo Description



This image shows a beautiful lake surrounded by trees with colorful fall leaves in shades of red, orange, and brown. A fallen tree branch stretches into the calm water, and a sandy beach is visible in the foreground. The trees around the lake show that seasons change and affect the land and water around us.

Scientific Phenomena

Anchoring Phenomenon: A lake is a natural body of water surrounded by land, and it changes with the seasons.

Why This Happens: Lakes form when water collects in low areas on Earth's surface. Water comes from rain, streams, and groundwater that fills these natural "bowls" in the land. The trees and plants around lakes grow in response to the water being nearby, and they change colors with the seasons as temperatures drop in fall and winter. The fallen tree branch shows that trees naturally lose branches over time due to wind, age, and weather—this is part of the water cycle and how ecosystems change.

Core Science Concepts

- * **Landforms and Water:** Lakes are landforms (shapes of land) that hold fresh water. They are surrounded by soil, rocks, and plants that make up the landscape.
- * **Seasonal Changes:** The colorful leaves visible in this photo show how plants and trees respond to seasonal temperature changes. In fall, days get shorter and cooler, so trees stop making food and their leaves change color before falling off.
- * **Erosion and Natural Processes:** The fallen tree in the water and the sandy beach demonstrate how water and weather slowly change landforms over time. This process is called erosion.
- * **Habitats and Ecosystems:** Lakes provide homes for many living things—fish, plants, birds, and insects depend on the water and the surrounding land to survive.

Pedagogical Tip:

For Second Grade, avoid using the term "erosion" initially if students haven't been exposed to it. Instead, use simpler language like "water helps change the land slowly" or "falling trees show nature is always changing." Use this photo as a springboard for sensory discussions: "What do you think this place would feel like? Sound like? Smell like in fall?"

UDL Suggestions:

Representation: Provide a labeled diagram of a lake showing where water comes from (rain, streams) and identify key vocabulary with pictures. **Action & Expression:** Let students draw their own lake and add seasonal details, or create a "lake in a cup" using sand, soil, rocks, and water. **Engagement:** Connect to students' personal experiences by asking if they've visited a lake, beach, or pond—this builds relevance to their lives.

Discussion Questions

1. What do you think happens to the lake when it rains a lot? (Bloom's: Understand | DOK: 1)
2. Why do you think the trees around this lake have different colored leaves than trees in your yard might have right now? (Bloom's: Analyze | DOK: 2)
3. How do you think the fallen tree branch got into the water, and what might happen to it over a long time? (Bloom's: Analyze | DOK: 2)
4. If you were a fish living in this lake, what would you need to survive here? (Bloom's: Evaluate | DOK: 3)

Extension Activities

1. Create a Lake Model in a Tray: Provide students with a shallow pan or tray filled with sand and soil. Have them use their hands or tools to make a "lake" by creating a dip, then slowly pour water into it. Ask them to observe where the water goes and discuss why it collects in the lower area. This hands-on experience builds understanding of how lakes form in natural low spots.
2. Seasonal Leaf Collection and Sorting: Take students on a nature walk around the school to collect fallen leaves in different stages of color change (green, yellow, orange, red, brown). Back in the classroom, sort them by color and discuss why leaves change. Create a classroom display showing the progression of fall colors, and connect it to how the trees in the lake photo are changing.
3. "Water Homes" Drawing and Writing Activity: Have students draw their own lake or pond scene with plants, animals, and fallen branches. Ask them to label or dictate 2–3 sentences about what lives in their water habitat and why those animals need water. This integrates literacy with Earth and Life Science concepts.

NGSS Connections

Performance Expectation:

K-ESS2-1: Use and share observations of local weather conditions to describe patterns over time.

Disciplinary Core Ideas:

- K-ESS2.D (Weather and climate can be observed, described, and predicted)
- 2-ESS2.A (Maps show where things are located; water is found in many places)
- 2-LS4.D (Every organism has different structures that help it survive in its environment)

Crosscutting Concepts:

- Patterns (Seasonal patterns affect living things and landscapes)
- Systems and System Models (A lake is a system with water, land, and living things connected together)

Science Vocabulary

- * Lake: A large area of water surrounded by land on all sides.
- * Landform: A natural shape or feature of Earth's surface, like a lake, mountain, or valley.
- * Seasonal: Having to do with the four seasons (spring, summer, fall, winter) and how things change during each season.
- * Erosion: The slow process of water, wind, or weather wearing away and changing rocks and soil.

- * Habitat: A place where plants and animals live and find everything they need to survive.
- * Ecosystem: A community of living things (plants and animals) and the nonliving things (water, soil, air) in their environment that all work together.

External Resources

Children's Books:

- Come to the Lake by Jane Kurtz (explores lake ecosystems and seasonal changes)
- At the Pond by Anne Vittur Madison (simple introduction to water habitats)
- Fall Leaves by Loretta Holland (seasonal change and trees)

YouTube Videos:

- "What Is a Lake?" by National Geographic Kids (2:15) — A clear, colorful explanation of how lakes form and what lives in them. <https://www.youtube.com/watch?v=tYzMGcUty6s>
- "Seasons and Trees" by Crash Course Kids (3:45) — Shows how trees change through the year and why leaves turn colors. <https://www.youtube.com/watch?v=xJqmY2EoYXE>

Teacher's Note: This photo is an excellent anchor for a unit on Earth's water, landforms, and seasonal changes. Use it at the start of a lesson cycle, return to it frequently as students learn, and encourage them to make predictions about what will happen to this lake in winter or spring!