

## Photo Description



This image shows a beautiful pond filled with water lilies—those round, green leaves floating on the water with white flowers blooming on top. The pond is surrounded by trees, bushes with pink and red flowers, and dark rocks. Many different plants and animals make their home in and around this water.

## Scientific Phenomena

**Anchoring Phenomenon:** Why do water lilies float on water and bloom with flowers?

Water lilies have special adaptations that allow them to thrive in pond environments. Their leaves (called lily pads) are flat and waxy, which helps them float on the water's surface. The stems are flexible and can stretch as water levels change. The flowers bloom at the surface to attract pollinators like insects and bees. This pond ecosystem demonstrates how living things are interconnected—plants provide food and shelter, while the water provides the environment all these organisms need to survive.

## Core Science Concepts

- \* **Habitats:** A habitat is a place where animals and plants live. Ponds are habitats that provide water, food, and shelter for many living things.
- \* **Living Things Need Water:** All the plants and animals in this pond depend on water to survive. Water is one of the most important things living things need.
- \* **Adaptation:** Water lilies have special features (like flat leaves and waxy coating) that help them survive in water. Different plants and animals have different body parts that help them live in their habitat.
- \* **Producers and Consumers:** The plants (like water lilies) make their own food from sunlight. Animals that live in the pond eat the plants or other animals.

### Pedagogical Tip:

Use the "Notice, Wonder, Investigate" strategy with this image. First, ask students what they **NOTICE** (the water lilies, flowers, rocks). Then ask what they **WONDER** about (Why do lily pads float? What lives under the water?). Finally, plan simple investigations to answer their questions. This builds scientific curiosity and ownership of learning.

### UDL Suggestions:

For multiple means of representation: Provide images alongside real objects (water lily photographs, actual pond water samples in clear containers). For multiple means of action/expression: Allow students to draw, build clay models of pond animals, or act out how water lilies grow. For multiple means of engagement: Connect to students' experiences with water (bathing, rain, puddles) and invite them to share their own observations about where they've seen plants or animals living.

### Discussion Questions

- \* What do you see living in or near the water in this picture? (Bloom's: Remember | DOK: 1)
- \* Why do you think the water lily leaves are so big and flat? (Bloom's: Analyze | DOK: 2)
- \* If the pond dried up, what would happen to all the plants and animals that live there? (Bloom's: Evaluate | DOK: 3)
- \* How is a pond different from the place where you live? (Bloom's: Compare | DOK: 2)

### Extension Activities

- \* Create a Pond in a Jar: Fill a clear jar with water, sand, and small plants. Add small plastic animals or snails. Students observe and draw what they see over several days, discussing what plants and animals need.
- \* Make Lily Pad Boats: Cut lily pad shapes from green paper with waxy coating (laminated or wax paper). Float them in a shallow water table and have students investigate what makes them float or sink using small objects.
- \* Pond Animal Charades: Teach students about pond animals (frogs, turtles, fish, dragonflies) through pictures and videos. Have them act out how each animal moves, discussing why different animals move differently in water.

### 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 for survival
- \* K-ESS2.A - Earth materials support life

Crosscutting Concepts:

- \* Patterns - Observe patterns in where plants and animals live
- \* Structure and Function - Plant parts help them live in their habitat

### Science Vocabulary

- \* Habitat: A place where plants and animals live and find everything they need.
- \* Water Lily: A plant that floats on top of ponds and has pretty flowers that bloom on the water.
- \* Adaptation: A special feature or body part that helps an animal or plant survive in its home.
- \* Pond: A small body of fresh water surrounded by land.
- \* Ecosystem: All the living things and non-living things in one area that depend on each other.

### External Resources

Children's Books:

- Pond Babies\* by Sandra Markle (explores life cycle of pond animals)
- In the Small, Small Pond\* by Denise Fleming (rhythmic text about pond habitats)
- From Tadpole to Frog\* by Wendy Pfeffer (explains frog life cycle in pond)

YouTube Videos:

\* "Ponds for Kids" - Simple overview of pond habitats and animals (2:15 minutes)

<https://www.youtube.com/watch?v=dQw4w9WgXcQ> (Note: Replace with verified pond-specific educational video)

\* "Water Lily Time-Lapse: Flower Opening" - Visual observation of water lily blooming

<https://www.youtube.com/watch?v=dQw4w9WgXcQ> (Note: Replace with verified time-lapse video)

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Teacher Tip: Before this lesson, consider taking your class on a pond walk (if accessible) or arranging a virtual pond tour. First graders learn best when they can connect new concepts to their own observations and experiences. Even a small water feature like a bird bath or classroom water table can demonstrate these concepts!