

## Photo Description



Small brown mushrooms are growing from the ground. They have round caps on top of thin stems. The mushrooms are growing in wood chips and old plant parts on the forest floor.

## Scientific Phenomena

The Anchoring Phenomenon is fungal decomposition and nutrient cycling. These mushrooms are the visible fruiting bodies of fungi that live underground in networks of tiny threads called mycelium. The fungi are breaking down dead wood and plant material, releasing nutrients back into the soil that other plants can use. This is a crucial process in forest ecosystems where fungi act as nature's recyclers, converting complex organic matter into simpler compounds through enzymatic breakdown.

## Core Science Concepts

1. Living vs. Non-living: Mushrooms are living things that grow, but they are different from plants and animals
2. Basic Needs of Living Things: Fungi need food, water, and the right temperature to grow
3. Decomposition: Some living things help break down dead plants and animals
4. Interdependence: Fungi help plants by making the soil rich with nutrients

### Pedagogical Tip:

Use concrete manipulatives like sorting activities with pictures of plants, animals, and fungi to help kindergarteners understand that fungi are a separate group of living things with unique characteristics.

### UDL Suggestions:

Provide multiple ways for students to explore this concept through sensory experiences like touching different textures (safe materials that feel like mushroom caps, stems, and wood chips) and using visual supports like picture cards showing the mushroom life cycle.

## Zoom In / Zoom Out

1. Zoom In: Under the ground, tiny fungal threads called mycelium spread through the soil like an invisible web, breaking down dead material with special chemicals and absorbing nutrients
2. Zoom Out: Fungi are essential decomposers in forest ecosystems, working together with bacteria to recycle nutrients that feed trees, plants, and ultimately support entire food webs including the animals that depend on healthy forests

### Discussion Questions

1. What do you notice about where these mushrooms are growing? (Bloom's: Observe | DOK: 1)
2. How do you think these mushrooms are similar to and different from plants in our garden? (Bloom's: Compare | DOK: 2)
3. What do you think would happen to all the dead leaves and wood if there were no mushrooms or other decomposers? (Bloom's: Predict | DOK: 3)
4. Why might it be important for mushrooms to grow near dead plant materials? (Bloom's: Analyze | DOK: 2)

### Potential Student Misconceptions

1. Misconception: "Mushrooms are plants because they grow from the ground"  
Clarification: Mushrooms are fungi, which are different from plants - they don't make their own food using sunlight like plants do
2. Misconception: "All mushrooms are bad or poisonous"  
Clarification: Many mushrooms are helpful and safe, though we should never touch or eat wild mushrooms without an adult expert
3. Misconception: "Dead things are yucky and useless"  
Clarification: Dead plant materials are important food for fungi and help make rich soil for new plants to grow

### Cross-Curricular Ideas

1. Math - Counting and Patterns: Have students count the mushrooms in the photo and create patterns using mushroom cutouts (big, small, big, small). They can also measure mushroom heights using non-standard units like craft sticks or blocks to compare sizes.
2. ELA - Descriptive Language and Storytelling: Read aloud books about mushrooms, then have students use sensory words to describe what mushrooms look, feel, and smell like. Create a class story about "The Adventures of a Little Mushroom" where students contribute sentences describing the mushroom's journey.
3. Art - Nature Collage and Texture Exploration: Provide students with safe materials (yarn, tissue paper, sandpaper) to create textured collages representing mushrooms, mycelium networks, and forest floors. Students can also paint or draw mushrooms using different colors and sizes they observe in nature.
4. Social Studies - Community Helpers: Connect fungi to the concept of "helpers in nature" - just like community helpers (firefighters, teachers, doctors) help people, fungi are helpers that clean up the forest and make it healthy for all living things to thrive.

### STEM Career Connection

1. Mycologist (Fungus Scientist): A mycologist is a scientist who studies mushrooms and other fungi. They learn about how mushrooms grow, what they eat, and how they help forests and gardens stay healthy. Some mycologists even work to find new types of mushrooms that people can eat! Average Annual Salary: \$65,000
2. Forest Ranger or Naturalist: Forest rangers take care of forests and teach people about the plants, animals, and fungi that live there. They help keep forests healthy and safe, and they might show visitors interesting mushrooms and explain why decomposers are important to nature. Average Annual Salary: \$58,000

3. Soil Scientist: Soil scientists study the dirt and everything living in it, including fungi and mushrooms. They figure out what makes soil healthy and rich so that gardens and farms can grow lots of plants and food for people to eat. Average Annual Salary: \$62,000

### NGSS Connections

- Performance Expectation: K-LS1-1 Use observations to describe patterns of what plants and animals need to survive
- Disciplinary Core Ideas: K-LS1.C Organization for Matter and Energy Flow in Organisms
- Crosscutting Concepts: Patterns - Students observe patterns in how living things meet their needs

### Science Vocabulary

- \* Mushroom: The part of a fungus that we can see growing above ground
- \* Fungi: Living things that are not plants or animals and help break down dead materials
- \* Decompose: To break down dead plant and animal materials into smaller pieces
- \* Nutrients: Food that living things need to grow and stay healthy
- \* Soil: The dirt where plants grow that is made of tiny rock pieces and dead plant materials

### External Resources

Children's Books:

- The Magic School Bus Meets the Rot Squad by Joanna Cole
- Mushrooms by Gail Gibbons
- A Seed Is Sleepy by Dianna Hutts Aston (includes fungi information)