

## Photo Description



Small yellow-brown mushrooms are growing from the ground among pieces of old wood and bark. The mushrooms have round caps on thin stems and are different sizes. Some mushrooms are tiny and just starting to grow.

## Scientific Phenomena

The Anchoring Phenomenon is fungal fruiting body development and spore dispersal. These mushrooms represent the reproductive structures of fungi that live underground or within decaying wood. The fungi break down dead organic matter (decomposition) and when conditions are right - typically after rain with proper temperature and humidity - they produce these visible mushrooms to release spores and reproduce. The mushrooms are essentially the "flowers" of the fungal organism, which spends most of its life as invisible threads called hyphae.

## Core Science Concepts

1. Living vs. Non-living Classification: Fungi are living organisms that grow, reproduce, and respond to their environment, even though they don't move like animals or make food like plants.
2. Decomposition and Nutrient Cycling: Fungi break down dead wood, leaves, and other organic matter, returning nutrients to the soil for other living things to use.
3. Life Cycles and Reproduction: Mushrooms are the reproductive part of fungi that release tiny spores to create new fungi, similar to how flowers make seeds.
4. Habitat and Environmental Needs: Fungi need moisture, organic matter to feed on, and proper temperature to grow and produce mushrooms.

### Pedagogical Tip:

Use the "Think-Pair-Share" strategy when introducing fungi. Have students first think individually about what they notice, then discuss with a partner, and finally share with the class. This builds confidence and allows processing time for this unfamiliar topic.

### UDL Suggestions:

Provide multiple ways to explore fungi concepts: tactile experiences with safe mushroom models, visual comparison charts of living vs. non-living things, and audio recordings of fungi facts for auditory learners. Include movement activities like acting out the mushroom life cycle.

### Zoom In / Zoom Out

1. Zoom In: Microscopic spores are being released from the mushroom caps - millions of tiny reproductive cells too small to see that will travel on air currents to start new fungal colonies when they land in suitable environments.
2. Zoom Out: These fungi are part of a forest ecosystem's decomposer network, working alongside bacteria and insects to recycle nutrients from dead trees back into the soil, supporting the entire food web from plants to animals.

### Discussion Questions

1. What do you notice about how these mushrooms are similar and different from each other? (Bloom's: Analyze | DOK: 2)
2. Why do you think these mushrooms are growing near old wood instead of in other places? (Bloom's: Evaluate | DOK: 3)
3. How might these mushrooms help other living things in the forest? (Bloom's: Apply | DOK: 2)
4. What questions do you have about how mushrooms grow and live? (Bloom's: Create | DOK: 2)

### Potential Student Misconceptions

1. Misconception: "Mushrooms are plants because they grow from the ground."  
Clarification: Mushrooms are fungi, which are neither plants nor animals. Unlike plants, they cannot make their own food and must get nutrients by breaking down other materials.
2. Misconception: "All mushrooms are bad or poisonous."  
Clarification: Many mushrooms are harmless, and some are even helpful to other plants and animals. However, we should never touch or eat wild mushrooms without an adult expert.
3. Misconception: "The mushroom is the whole organism."  
Clarification: The mushroom is just the part we can see, like fruit on a tree. Most of the fungus lives underground as tiny threads.

### NGSS Connections

- Performance Expectation: 2-LS4-1 - Make observations of plants and animals to compare the diversity of life in different habitats
- Disciplinary Core Ideas: 2-LS4.A - There are many different kinds of living things in any area, and they exist in different places on land and in water
- Crosscutting Concepts: Patterns - Patterns in the natural world can be observed and used as evidence

### Science Vocabulary

- \* Fungi: Living things that are not plants or animals and get food by breaking down dead materials
- \* Decomposer: A living thing that breaks down dead plants and animals into nutrients
- \* Spores: Tiny parts that fungi use to make new fungi, like seeds for plants
- \* Habitat: The place where a living thing naturally lives and grows
- \* Organism: Any living thing, like a plant, animal, or fungus

### External Resources

Children's Books:

- The Magic School Bus Meets the Rot Squad by Joanna Cole
- Mushrooms by Gail Gibbons
- A Log's Life by Wendy Pfeffer

YouTube Videos:

- "What are Fungi? | Biology for Kids" - Simple explanation of fungi basics with colorful animations ([https://www.youtube.com/watch?v=bE\\_H6ipzjJI](https://www.youtube.com/watch?v=bE_H6ipzjJI))
- "Decomposers-The Cleanup Crew" by SciShow Kids - Explains how fungi and other decomposers help nature recycle (<https://www.youtube.com/watch?v=5yHsmZy-YS8>)