Fungi04

Life Science | Lesson Guide

2nd Grade

Photo Description

This picture shows bright pink, round balls growing on dead wood and leaves on the forest floor. The pink balls look like tiny bubbles stuck together in groups. Some of the pink stuff looks gooey and wet, like it might be melting or breaking apart.

Scientific Phenomena

The anchoring phenomenon here is slime mold reproduction and spore formation. What appears to be happening is that a slime mold (likely Tubifera ferruginosa or pink slime mold) has transitioned from its feeding stage to its reproductive stage. The bright pink spherical structures are sporangia - specialized containers that hold spores. This occurs when environmental conditions become unfavorable (like drying out), triggering the organism to reproduce by releasing spores that can survive harsh conditions and eventually grow into new slime molds.

Core Science Concepts

1. Living vs. Non-living Characteristics: Slime molds demonstrate that living things can move, grow, reproduce, and respond to their environment, even though they might look very different from familiar plants and animals.

2. Life Cycles and Reproduction: All living things have ways to make more of themselves. The pink balls contain tiny seeds called spores that can grow into new slime molds.

3. Decomposition and Nutrient Cycling: Slime molds help break down dead plant material, returning nutrients to the soil for other living things to use.

4. Habitat and Environmental Response: Living things live in places that meet their needs and change their behavior when conditions change.

Pedagogical Tip:

Use the "I Notice, I Wonder, It Reminds Me Of" thinking routine to help students make careful observations before jumping to conclusions about what they're seeing.

UDL Suggestions:

Provide magnifying glasses and encourage students to draw what they observe. This supports visual learners and gives kinesthetic learners a hands-on way to engage with the scientific observation process.

Zoom In / Zoom Out

1. Zoom In: Inside each pink ball are thousands of microscopic spores - tiny cells that are like seeds but much smaller than any seed students have seen. These spores have tough walls that protect them until conditions are right to grow.

2. Zoom Out: This slime mold is part of a larger forest ecosystem where many different organisms work together to break down dead leaves and wood, creating rich soil that helps trees and plants grow bigger and stronger.

Discussion Questions

1. What do you notice about where these pink balls are growing? (Bloom's: Observe | DOK: 1)
2. Why do you think the slime mold makes these pink balls instead of staying as gooey slime? (Bloom's: Analyze | DOK: 2)
3. How might these pink spore balls help the slime mold survive in different places? (Bloom's: Evaluate | DOK: 3)
4. What other living things have you seen that change their shape or form during their life? (Bloom's: Apply | DOK: 2)

Potential Student Misconceptions

1. Misconception: "This pink stuff is not alive because it doesn't look like animals or plants."
   Clarification: Living things come in many different forms. This slime mold can move, eat, grow, and reproduce just like other living things.

2. Misconception: "The pink balls are eggs like bird eggs."
   Clarification: These are spore containers, which are different from eggs. They hold many tiny spores instead of one developing organism.

3. Misconception: "This is yucky and bad for the forest."
   Clarification: Slime molds are helpful! They clean up dead material and make the soil richer for plants to grow.

Cross-Curricular Ideas

1. Math - Counting and Patterns: Have students count the pink balls in different clusters and create simple bar graphs comparing "small groups" vs. "large groups" of spores. They can also look for patterns in how the spores are arranged and describe them using positional words (above, below, next to).

2. ELA - Descriptive Writing: Ask students to write or dictate sentences describing what they see using sensory words. "The slime mold feels squishy. It looks bright pink like bubblegum. It smells earthy like wet dirt." This builds vocabulary and observation skills while practicing descriptive language.

3. Art - Nature Collage: Students can create their own forest floor scenes using torn paper, leaves, and paint to represent decomposers at work. They can paint their own "slime molds" and arrange natural materials to show a woodland habitat.

4. Social Studies - Community Helpers: Connect decomposers to community helpers by discussing how slime molds "help" the forest just like firefighters help communities. Students can draw pictures showing how different "helpers" (decomposers, teachers, doctors) take care of their communities.

STEM Career Connection

1. Mycologist (Fungi Scientist): A mycologist is a scientist who studies fungi, including slime molds. They work in laboratories, forests, or universities to learn how these organisms grow, what they eat, and how they help ecosystems. Some mycologists even discover new types of fungi! Average Salary: $65,000 - $75,000 per year

2. Forest Ecologist: A forest ecologist studies all the living things in forests and how they work together. They observe decomposers like slime molds to understand how forests stay healthy and strong. They might work for parks, universities, or environmental organizations. Average Salary: $55,000 - $70,000 per year

3. Environmental Scientist: Environmental scientists study nature and how to protect it. They might research how decomposers help clean up polluted areas or make soil healthier. Their work helps keep forests, parks, and natural areas safe for plants and animals. Average Salary: $60,000 - $80,000 per year

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

* Spores: Tiny seeds that some living things make to create new versions of themselves
* Decomposer: A living thing that breaks down dead plants and animals
* Organism: Any living thing, like plants, animals, or slime molds
* Habitat: The place where a living thing finds everything it needs to survive
* Life cycle: The different stages a living thing goes through as it grows and reproduces

External Resources

Children's Books:
- Funky Fungi by Alisha Gabriel
- The Magic School Bus Meets the Rot Squad by Joanna Cole
- Mushrooms in the Rain by Miriam Schlein