Fungi04

Life Science | Lesson Guide

1st Grade

Photo Description

This picture shows bright pink, round things growing on old wood and leaves. The pink blobs look like tiny balls stuck together. They are growing in a forest where there are dead sticks and leaves on the ground.

Scientific Phenomena

The anchoring phenomenon is decomposition in action - specifically showing slime molds (likely Tubifera ferruginosa or pink slime mold) breaking down dead organic matter. This occurs because slime molds are special organisms that help recycle nutrients by eating bacteria and tiny bits of rotting wood and leaves. They appear pink/red during their reproductive stage when they form spore-producing structures called sporangia. This is nature's recycling system at work, converting dead material back into nutrients that plants can use.

Core Science Concepts

1. Living vs. Non-living: Slime molds are living organisms that grow, move (very slowly), and reproduce, even though they might look like colorful blobs.

2. Decomposition: Dead plants and wood break down with help from tiny living things, returning nutrients to the soil for new plants to use.

3. Life Cycles: These organisms go through different stages - sometimes looking like slime, other times forming these colorful ball-like structures to make "seeds" (spores).

4. Habitat Requirements: These organisms need moist, shady places with dead plant material to survive and grow.

> **Pedagogical Tip:**
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> Use the "I Notice, I Wonder, It Reminds Me Of" thinking routine to help first graders make observations without jumping to conclusions. This builds their scientific observation skills.

> **UDL Suggestions:**
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> Provide magnifying glasses and encourage students to draw what they see with colored pencils. This supports multiple ways of engaging with and expressing scientific observations.

Zoom In / Zoom Out

1. Zoom In: Inside these pink balls are millions of tiny spores (like seeds) that are too small to see. These spores will blow away in the wind to start new slime molds in other places.

2. Zoom Out: This decomposition process happens all over the forest floor, helping create rich soil that feeds trees, flowers, and all forest plants. Without decomposers, dead leaves and wood would pile up everywhere!

Discussion Questions

1. What do you notice about where these pink organisms are growing? (Bloom's: Analyze | DOK: 2)
2. Why do you think these living things might be important for the forest? (Bloom's: Evaluate | DOK: 3)
3. What would happen if nothing ever cleaned up dead leaves and sticks in the forest? (Bloom's: Synthesize | DOK: 3)
4. How are these organisms similar to and different from plants and animals you know? (Bloom's: Compare | DOK: 2)

Potential Student Misconceptions

1. Misconception: "These pink things are just colorful rocks or toys someone dropped."
   Clarification: These are actually living organisms that grow and change, even though they don't move like animals we know.

2. Misconception: "Slime and mold are always bad and yucky."
   Clarification: Many molds and slime-like organisms are helpful because they clean up the forest by eating dead things and making soil healthy.

Cross-Curricular Ideas

1. Math - Counting & Patterns: Students can count the individual pink balls in the photo and create patterns with objects or drawings (e.g., "pink ball, stick, pink ball, stick"). This builds number recognition and pattern awareness while exploring the actual photo.

2. ELA - Descriptive Writing: Have students use sensory words to describe the slime mold without naming it. Create a class "mystery organism" story where students contribute sentences about what they see, developing vocabulary and storytelling skills.

3. Art - Nature Collage: Students create their own decomposer-inspired artwork using natural materials (twigs, leaves, fabric scraps in pink/red) arranged on dark paper. This helps them understand how decomposers blend into their forest habitat while exploring color, texture, and composition.

4. Social Studies - Community Helpers: Connect decomposers to community helpers who "clean up" neighborhoods. Discuss how slime molds are like nature's janitors, helping students understand that different organisms have different jobs that help their communities stay healthy.

STEM Career Connection

1. Mycologist (Mold & Fungus Scientist): A mycologist studies molds, fungi, and organisms like slime molds. They observe these organisms in forests and labs to understand how they help nature recycle dead things. Some mycologists even discover new species! Average Annual Salary: $48,000 - $65,000 USD

2. Forest Ecologist: Forest ecologists study all the living things in a forest, including the decomposers that break down dead wood and leaves. They help protect forests by understanding how every organism, big and small, keeps the forest healthy. Average Annual Salary: $52,000 - $72,000 USD

3. Environmental Scientist: Environmental scientists study how nature recycles and cleans itself, including the important job that decomposers do. They work to help people understand why keeping forests healthy is important for our whole planet. Average Annual Salary: $55,000 - $75,000 USD

NGSS Connections

- Performance Expectation: K-LS1-1 - Use observations to describe patterns of what plants and animals need to survive
- Disciplinary Core Idea: K-LS1.C - All animals need food in order to live and grow
- Crosscutting Concept: Patterns - Patterns in the natural world can be observed and used as evidence

Science Vocabulary

* Decomposer: A living thing that breaks down dead plants and animals
* Spore: A tiny seed-like part that can grow into a new organism
* Organism: Any living thing that grows and changes
* Nutrients: Food that living things need to grow and stay healthy
* Habitat: The place where a living thing finds everything it needs to survive

External Resources

Children's Books:
- Mushrooms in the Rain by Mirra Ginsburg
- The Magic School Bus Meets the Rot Squad by Joanna Cole
- Compost Stew: An A to Z Recipe for the Earth by Mary McKenna Siddals