Fungi04

Life Science | Lesson Guide

Kindergarten

Photo Description

This picture shows bright pink blobs growing on old wood and leaves. The pink things look like tiny round balls stuck together. They are growing outside on the forest floor.

Scientific Phenomena

The anchoring phenomenon is slime mold fruiting body 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, creating these distinctive bright pink, clustered fruiting bodies. This occurs when the organism has consumed enough nutrients from decaying organic matter and environmental conditions trigger spore production. The vibrant pink coloration helps attract insects and other vectors for spore dispersal.

Core Science Concepts

1. Living vs. Non-Living Characteristics - Slime molds demonstrate that living things can grow, reproduce, and respond to their environment, even when they don't look like typical plants or animals.

2. Life Cycles and Reproduction - The pink structures represent the reproductive stage of the slime mold's life cycle, showing how organisms change form to create offspring.

3. Decomposition and Nutrient Cycling - These organisms feed on decaying wood and plant matter, breaking it down and recycling nutrients back into the ecosystem.

4. Habitat and Basic Needs - Living things need specific conditions (moisture, food, proper temperature) to survive and thrive.

Pedagogical Tip:

Use this image to challenge students' preconceptions about what "alive" looks like. Ask them to observe and describe what they see before revealing it's a living organism, then discuss the characteristics that make something alive.

UDL Suggestions:

Provide multiple ways for students to engage with this concept: tactile exploration with safe fungi models, visual comparison charts of living/non-living things, and movement activities where students act out different life cycle stages.

Zoom In / Zoom Out

1. Zoom In: At the microscopic level, millions of tiny spores are being produced inside these pink fruiting bodies. Each spore contains the genetic material needed to start a new slime mold organism when conditions are right.

2. Zoom Out: This slime mold is part of a larger forest ecosystem where decomposers break down dead plant material, creating rich soil that feeds new plants, which in turn provide food and shelter for animals, completing the cycle of life in the forest.

Discussion Questions

1. What do you notice about the colors and shapes in this picture? (Bloom's: Remember | DOK: 1)

2. Why do you think these pink blobs are growing on old wood instead of fresh, green leaves? (Bloom's: Analyze | DOK: 2)

3. How might these bright pink structures help this living thing survive in the dark forest? (Bloom's: Evaluate | DOK: 3)

4. What would happen if all the decomposers like this slime mold disappeared from the forest? (Bloom's: Synthesize | DOK: 3)

Potential Student Misconceptions

1. Misconception: "Pink things can't be alive because animals and plants aren't bright pink."
   Clarification: Living things come in many colors, including bright pink, to help them survive and reproduce.

2. Misconception: "It's not moving, so it's not alive."
   Clarification: Many living things move very slowly or in ways we can't easily see, but they still grow and change.

3. Misconception: "It looks like candy or toys, so people put it there."
   Clarification: This is a natural organism that grew by itself in the forest, just like mushrooms or flowers.

Cross-Curricular Ideas

1. Math - Counting and Patterns: Have students count the pink balls in the photo or create their own patterns using pink and brown manipulatives to represent the slime mold and wood. They can sort objects by color or size, building foundational number sense.

2. ELA - Descriptive Writing and Storytelling: Ask students to describe what they see using sensory words (bumpy, bright, squishy-looking) and create a simple story about "A Day in the Life of a Slime Mold" with beginning, middle, and end. Students can dictate or draw their stories with teacher support.

3. Art - Color Mixing and Nature Collage: Students can mix paint to create different shades of pink and explore how artists use bright colors in nature. Create a forest floor collage using real leaves, twigs, and pink-painted materials to recreate the habitat shown in the photo.

4. Social Studies - Community Helpers: Connect to the idea that decomposers are "nature's cleanup crew" by comparing them to community workers like garbage collectors and janitors who help keep our neighborhoods clean and healthy.

STEM Career Connection

1. Mycologist (Fungus Scientist): A mycologist is a scientist who studies fungi, including slime molds, mushrooms, and molds. They learn about how these organisms grow, what they eat, and how they help nature. Mycologists work in forests, laboratories, and universities to understand these amazing living things. Average Annual Salary: $45,000 - $65,000 USD

2. Forest Ecologist: A forest ecologist studies how all the living things in a forest work together, including decomposers, plants, and animals. They observe and care for forests, understanding how nutrients move through nature and keeping forests healthy. Average Annual Salary: $50,000 - $70,000 USD

3. Environmental Scientist: An environmental scientist studies nature and works to keep our planet healthy. They might research how decomposers help soil, study forests, or learn about different habitats. These scientists help protect nature for animals and plants. 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 (including humans) need to survive
- Disciplinary Core Idea: K-LS1.C - All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.
- Crosscutting Concept: Patterns - Patterns in the natural world can be observed and used as evidence

Science Vocabulary

* Organism: A living thing that can grow and make more of itself
* Decomposer: A living thing that breaks down dead plants and animals
* Life cycle: The different stages a living thing goes through as it grows
* Spores: Tiny seeds that some living things make to create babies
* Habitat: The place where a living thing finds everything it needs to survive

External Resources

Children's Books:
- The Magic School Bus Meets the Rot Squad by Joanna Cole
- Fungi by David West
- What's Alive? by Kathleen Weidner Zoehfeld