

Student's Mushroom Mission: A Fungus Detective Adventure!

Materials Needed:

- A few fresh, store-bought mushrooms with visible gills (Portobello or Cremini work well)
 - A magnifying glass
 - Student's "Fungus Detective Field Journal" (a notebook or blank paper)
 - Pencils, crayons, or markers
 - Play-Doh or modeling clay in at least two different colors (e.g., brown, white)
 - One sheet of white paper and one sheet of black paper
 - A glass, cup, or small bowl
 - A knife for adult use
 - **Optional:** A children's book about fungi (e.g., "The Mushroom Fan Club" by Elise Gravel)
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Learning Objectives

By the end of this lesson, Student will be able to:

- **Identify and name** the three main, visible parts of a mushroom (cap, gills, stem).
- **Create a spore print** to demonstrate how mushrooms reproduce.
- **Explain one important role** of fungi in the environment (decomposition).
- **Build a 3D model** of a mushroom from memory.

Lesson Activities: The Mission

Part 1: The Detective's Briefing (5-10 minutes)

Goal: Spark curiosity and encourage close observation.

1. **Set the Scene:** "Good morning, Detective Student! Your mission today is to investigate a mysterious and fascinating organism: the fungus. We have a few specimens here. Your first task is to examine them closely and record your observations in your Field Journal."
2. **Investigation:** Give Student a mushroom and the magnifying glass. Ask guiding questions to encourage detailed observation:
 - "What do you notice about its shape and color?"
 - "What does it feel like? Is it soft, firm, smooth, or rough?"
 - "Look underneath with your magnifying glass. What do you see?"
 - "What does it smell like?"
3. **Journal Entry:** Have Student draw what they see in their Field Journal. This is not about a perfect drawing, but about recording observations.

Part 2: Fungus Anatomy 101 (10 minutes)

Goal: Learn the basic parts of a mushroom in a hands-on way.

1. **Dissection:** Take a mushroom and gently point out the main parts. As you name each part, help Student find it on their own mushroom.
 - The **Cap:** The top part that looks like a little umbrella.
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- The **Stem** (or Stipe): The stalk that holds the cap up.
 - The **Gills**: The thin, papery lines underneath the cap. Explain that this is where the mushroom's "seeds" are made.
2. **Label the Drawing:** Ask Student to label the three parts on the drawing they made in their Field Journal.

Part 3: The Secret of the Spores (15 minutes to set up)

Goal: Create a piece of art that creatively demonstrates a scientific process (spore release).

1. **The Secret Message:** "Detective, we have a secret to uncover. The gills are holding thousands of tiny, invisible things called **spores**. Spores are like tiny seeds that fungi use to make new fungi. We are going to make them appear like magic!"
2. **Set Up:**
 - An adult should carefully cut the stem off a mushroom, as close to the cap as possible.
 - Choose a piece of paper that will contrast with the spores. (Use white paper for a dark mushroom like a Portobello, or black paper for a lighter mushroom).
 - Place the mushroom cap with the gills facing down onto the paper.
 - Cover the cap with a glass or bowl. This traps moisture and helps the spores release.
3. **Patience:** "Our trap is set! It will take a few hours for the spores to fall. While we wait, we will continue our investigation." Set the experiment aside in a place where it won't be disturbed.

Part 4: Build-A-Mushroom Workshop (15 minutes)

Goal: Reinforce knowledge of mushroom anatomy through creative, kinesthetic building.

1. **The Challenge:** "Now it's time to build your own fungus specimen! Using this clay, create a 3D model of a mushroom."
2. **Construction:** Provide Play-Doh or clay. Encourage Student to build a model that includes a cap, a stem, and gills. They can use a pencil tip or a craft stick to carefully carve the gill lines under the cap.
3. **Review:** Once the model is complete, ask Student to point to the different parts and name them. "Show me the cap on your model! Now, where are the gills?"

Part 5: Mission Debrief & The Big Reveal (10 minutes)

Goal: Connect fungi to their real-world job and assess learning through a final reveal.

1. **Nature's Recyclers:** While looking at the clay model, ask: "What do you think mushrooms do in a forest?" Explain that many fungi are decomposers. "They are nature's clean-up crew! They 'eat' dead things like old leaves and fallen logs, breaking them down and turning them into healthy soil for new plants to grow. Without fungi, the forest would be buried in trash!"
2. **The Reveal:** It's time to check the spore print experiment. Very carefully, have Student lift the bowl and then the mushroom cap straight up.
3. **Observation:** The spores will have fallen onto the paper, creating a beautiful print of the gills. Use the magnifying glass to look at the fine powder. Discuss what you see. "Every speck in that print could grow a new mushroom!"

Assessment & Wrap-Up

Assessment for this lesson is informal and based on observation and conversation.

- **Show and Tell:** Ask Student to use their clay model and spore print to "teach" you what they learned. "Can you tell me the story of this mushroom? What are its parts, and what is its important job?"
- **Field Journal Review:** Look at the labeled drawing in the Field Journal together and celebrate

the excellent detective work.

Differentiation and Extension

- **For Extra Support:** Focus on just the cap and stem. Use a pre-printed diagram of a mushroom for labeling if drawing is a challenge.
- **For an Extra Challenge:** Research a weird and wonderful fungus online (with supervision), like the Lion's Mane, Bleeding Tooth Fungus, or Stinkhorn. Draw it in the Field Journal and write one cool fact about it.