

Christine Choi

## **Best Lesson**

**Grade Level:** 2

**Title of Lesson:** Moldy Food

**Unit Title:** Life Cycles

**Performance Standard(s) Covered:**

S2CS1: Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

S2CS7: Students will understand important features of the process of scientific inquiry.

S2L1. Students will investigate the life cycles of different living organisms.

d. Identify fungi as living organisms.

**Essential Question:** What does a fungus need to grow?

**Objective:** The students should learn what fungus is and how fungus grows in comparison to other living organisms that they have learned about so far in the school year.

**Key Words and Terms:**

Living, nonliving, prediction/ hypothesis, life cycles, plants, animals, food, water, sunlight, habitat

**Learning Activity**

**Abstract (limit 100 characters):** Students will have the chance to inoculate fresh bread with potential sources of fungi spores to induce growth of fungus on bread. This gives them ownership of the experiment because they get to choose where they want to get potential spores from. The students will swab different areas of the classroom and rub the swab on some bread. Growth will be observed by the students and conclusions will be made on what the life cycle of fungi entails.

**Materials Needed:**

-1-2 newspapers

-a bag of the soft white bread rolls (5 rolls)

-1 plate or disposable bowl per group.

-plastic wrap

-paper towels or napkins

-ear swabs (Qtips)

-sharpie

-plastic forks

-2 trash bags (1 for each day)

-cup of clean water

### **Safety Concerns:**

1. Make sure that the students do not put any part of their hands in their mouth during this activity.
2. No consumption of the materials.
3. No running to prevent knocking over of materials or other students.

### **Procedure:**

#### Preparation

#### **Day 1**

1. Cover the workspace with a layer of newspaper.
2. Fill a cup with clean water and set aside close to where you will be.
3. Write the group name on the rim of each plate for identification.
4. Place 1 bread roll on a plate for each group.
5. Cover the bread rolls with either a paper towel/napkin or plastic wrap until the activity starts.
6. Place a swab for each student.

#### Activity

#### **Day 1 of Experiment**

1. After breaking into groups of 3-4 students, ask about what they know about living organisms and their requirements for a successful life cycle. Introduce fungus and talk about mold as one of the types. Allow the students to draw pictures or write down their thoughts and predictions in their science notebook.
2. Tell the students that they can grab their swab and dip it in some water.
3. While demonstrating on the table, tell them to take their swab and rub it gently on the surface that they choose. Emphasize to only swab 1 area.
4. Allow them to go and come back within 15 seconds.
5. While they are gone, remove the covering from the bread.
6. When they come back, tell them to gently rub their swab on the surface of the bread.
7. After they are done, collect the swabs and discard them in the trash bag.
8. Ask them to make observations of what the bread looks like today and what they predict will happen to the bread in a few days.
9. You (the teacher) should keep the bread rolls on the plate and cover them with plastic wrap lightly so that the bread is not squished. Store the experiments in a dark place with a mild temperature (room temperature is fine).
10. Spray the bread with some water each day until Day 2 of the experiment. It is important to keep the environment moist but not soaking.

### Preparation

#### **Day 2:**

1. Cover the workspace with newspaper.
2. Set a fork for each student with their plate of bread uncovered or lightly covered with plastic wrap.
3. Lay 1-2 paper towels for each group.

### Activity

#### **Day 2 of Experiment** (probably after a few days of growth time)

1. Allow the students to describe what has changed since the first day of the experiment.
2. Discuss with them the different life cycles of plants and animals to compare with fungus.

3. Ask each student to get their fork and start poking around at the plastic wrap covered mold or the uncovered mold while describing the texture, the “roots” (mycelium), colors, and the condition of the bread.
4. After they are done, discard all of the materials.
5. Give the students time to write their observations in their science notebooks and compare their notes from Day 1 with the results of the activity. ‘
6. Ask the students if they can come up with some ideas on what can make the mold grow better or worse (energy sources, habitat, different types of food, light exposure, temperature, etc.)

### **Notes and Tips:**

Yes, although bread can mold without being inoculated, this activity provides the students with an experience and lesson that fungi spores are essentially everywhere.

Give them the option for the bathroom to swab but try to get them to swab other places in the hallway or classroom. If the bathroom is too much excitement for them, limit the swab areas to the classroom.

Please try to emphasize the importance of not eating anything during a science activity unless it is clearly stated that it is okay.

Having the students share a piece of bread will teach them teamwork but also there may be a fight for space on the bread. Tell them to take turns swabbing or if possible, you can provide a piece of bread to each student.

Cold or hot temperatures may result in no growth on the bread.

Too much moisture may result in no growth.

### **References:**

[http://www.education.com/activity/article/Making\\_Mold\\_Science\\_Experiment/](http://www.education.com/activity/article/Making_Mold_Science_Experiment/)

<http://www.fsec.ucf.edu/en/consumer/buildings/basics/moldgrowth.htm>