

A Fungus Among Us

Introduction

Bacteria and fungus live all around and on us, but aren't visible to the naked eye. Test areas of your home to discover where the most mold may be hiding!

Think About This

- What area in a home has the highest amount of bacteria and fungus?
- How do I know that washing my hands makes a difference?

Materials

-  2-4 small slices of bread
 - White bread with the fewest ingredients and no preservatives works best, but any bread can be used
- Spray bottle with water in it
- Zipper plastic bags (1 per slice of bread)
 - Sandwich or snack size will work
- Pen or Marker
- Piece of paper

Do Ahead of Time

- 1 Gather enough bread. You will need one bread slice for each object/area you test.
- 2 Create an observation sheet by dividing a sheet of paper into 4 sections. Label each section "Day 1", "Day 3", "Day 5", and "Day 7". This will be where you write and draw observations throughout this experiment.

Directions

Mold is a fungus that produces spores, which are found almost everywhere. Test the cleanliness of different objects or areas by comparing how much mold grows on pieces of bread after they have contact with various areas of your home.

Follow these steps to compare different objects, such as a trash can and computer keyboard.

- 1 Decide what objects you want to test for this experiment.
- 2 Label a plastic bag with the name of each object you will test.
- 3 Place one piece of bread against an object's surface and rub it gently back and forth for about 5 seconds. Make sure the white part of the bread makes contact (not the crust).
- 4 Use the spray bottle and add two sprays of water to each slice of bread.
- 5 Place the bread in the plastic bag with the correct label and seal it completely.
- 6 Repeat steps 3-5 for each object being tested.
- 7 On the "Day 1" section of your observation sheet, write and/or draw observations about the bread. What do you notice? What is the color of the bread? What is the texture?
- 8 Check daily to see which bread grows the most mold (You may also want to take a daily picture). On Days 3, 5, and 7, make observations on the observation sheet.
- 9 After 7 to 8 days, dispose of all samples in the trash.

A Fungus Among Us Continued

Follow these steps to compare your hands before and after washing.

- 1 Label two plastic bags. Label one “before” and one “after.”
- 2 Hold one piece of bread between your hands and rub gently for about 5 seconds. Make sure the white part of the bread makes contact (not the crust). It is best to do this after an activity, such as playing outside, playing with toys, or touching a pet.
- 3 Use the spray bottle and add two sprays of water to the slice of bread.
- 4 Put the bread in the plastic bag with the correct label and seal it completely.
- 5 Wash your hands well with soap and water.
- 6 Repeat steps 2-4.
- 7 On the “Day 1” section of your observation sheet, write and/or draw observations about the bread. What do you notice? What is the color of the bread? What is the texture?
- 8 Check daily to see which bread grows the most mold (You may also want to take a daily picture). On Days 3, 5, and 7, make observations on the observation sheet.
- 9 After 7-8 days, dispose of all samples in the trash.



DAY 1

DAY 4

DAY 7

Questions to Ponder

- 1 What would happen if I just used water and no soap to clean my hands?
- 2 What would happen if I used hand sanitizer instead of soap on my hands?

What's Happening?

Mold grows from small cells that we cannot see with the naked eye called spores. In order to grow, these spores need water and food. Mold spores are found almost everywhere, and the longer it has been since something was cleaned, the more mold spores will be on an object.

By rubbing a piece of bread on an object or a surface, some of the mold spores transfer to the bread. Those spores used the water from the spray bottle and energy from the bread to grow. If the mold growth was fast and spread out on the bread, it means the object or surface likely had a high number of mold spores. If the mold growth is slow or doesn't spread out, the object likely had fewer mold spores and was cleaner. Mold can be many different colors. If the mold in different areas of the bread is different colors, more than one type of mold was there!

This experiment used bread, but scientists use petri dishes to grow fungi and bacteria. Petri dishes are filled with agar, a gel-like substance that comes from algae. Just like the bread, agar is a food source for what grows. Bacteria are similar to fungi in that they can be found almost everywhere, are microscopic, grow over time, and can make people ill. Regular, thorough cleaning can help kill fungi and bacteria. Don't forget to wash your hands!

**What objects did you test?
What did your bread look like on day 7?
Email us photos of your results at
AtHome@discoveryworld.org**