

Moldy Bread Experiment



Meet Mika Sovak, MD, PhD

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What do you do at AstraZeneca?

I develop medicines for people who have cancer.

What was your favorite class growing up?

Recess! It allowed my imagination to run free – an important part of science.

Was there a moment in your elementary school years that sparked your passion for science?

My interest was sparked from a geeky book of grass that grew inwards- it turns out it was spinning on a record player and the centrifugal force made it grow that way. I loved the idea of solving big questions, big riddles like that.

Why do you love science?

It helps me understand the way the world works.

What advice would you give your 13-year-old self?

Be curious!

How did you navigate the challenges of being a woman in STEM?

Remember that what you have to say is important.

Why should students consider a career in STEM?

To answer the question, 'Why?'

What scientist inspires you? Why?

Anthony Fauci – he speaks truth to power.

Navigate to:

Materials



- Safety goggles or clear-lensed glasses
- A lab coat or kitchen apron
- Latex or non-latex gloves
- A permanent marker
- 5 slices of bread (the kind from a bakery or homemade works best — the fewer preservatives the better)
- 5 resealable plastic zipper bags
- Soap
- Hand sanitizer
- A notebook
- A pen
- A ruler
- Clean tongs (optional)
- Sticky notes, washi paper tape or masking tape (optional)
- A camera or smartphone camera (optional)

Read the Directions

Before starting your experiment, carefully read the protocol. If helpful, record the protocol in your notebook, which will help document your science experiment.

Practice Safety

Before starting, find a clean surface to set-up your experiment. Then, put on your safety goggles, lab coat (or kitchen apron), and gloves. Always to practice safety when exploring science!

Experiment Procedure

01. Use your permanent marker to label your five (5) bags the following. You can write either directly on the plastic bags, or you can write the labels on a sticky note, wash paper tape or masking tape and place it on top of the resealable bag. Feel free to ask an adult for help!:

- Control
- Unwashed Hands
- Soap and Water
- Hand Sanitizer
- A surface of your choosing (e.g., computer keyboard or mouse, a doorknob, a kitchen sink, bottom of a shoe)

02. Next, with your gloves on, grab your bread slices. If they are not already sliced, ask an adult to help slice the bread. Ask them to wear gloves while handling the bread.

03. Use clean tongs or carefully grab one slice of bread with your gloved hands. Place the bread in the “Control” bag. Seal the bag.

04. Take a second slice of bread and gently wipe it over a surface of your choosing (e.g., computer keyboard or mouse, a doorknob, a kitchen sink, bottom of a shoe). Be careful not to tear or smash the bread. Place in the bag with the same label. Seal the bag.

05. Next, remove your gloves. Grab the third slice slide of bread with your bare hands. Touch as much of the bread with your unwashed hands. Then place the bread slice in the bag labeled “Unwashed Hands.” Seal the bag shut.

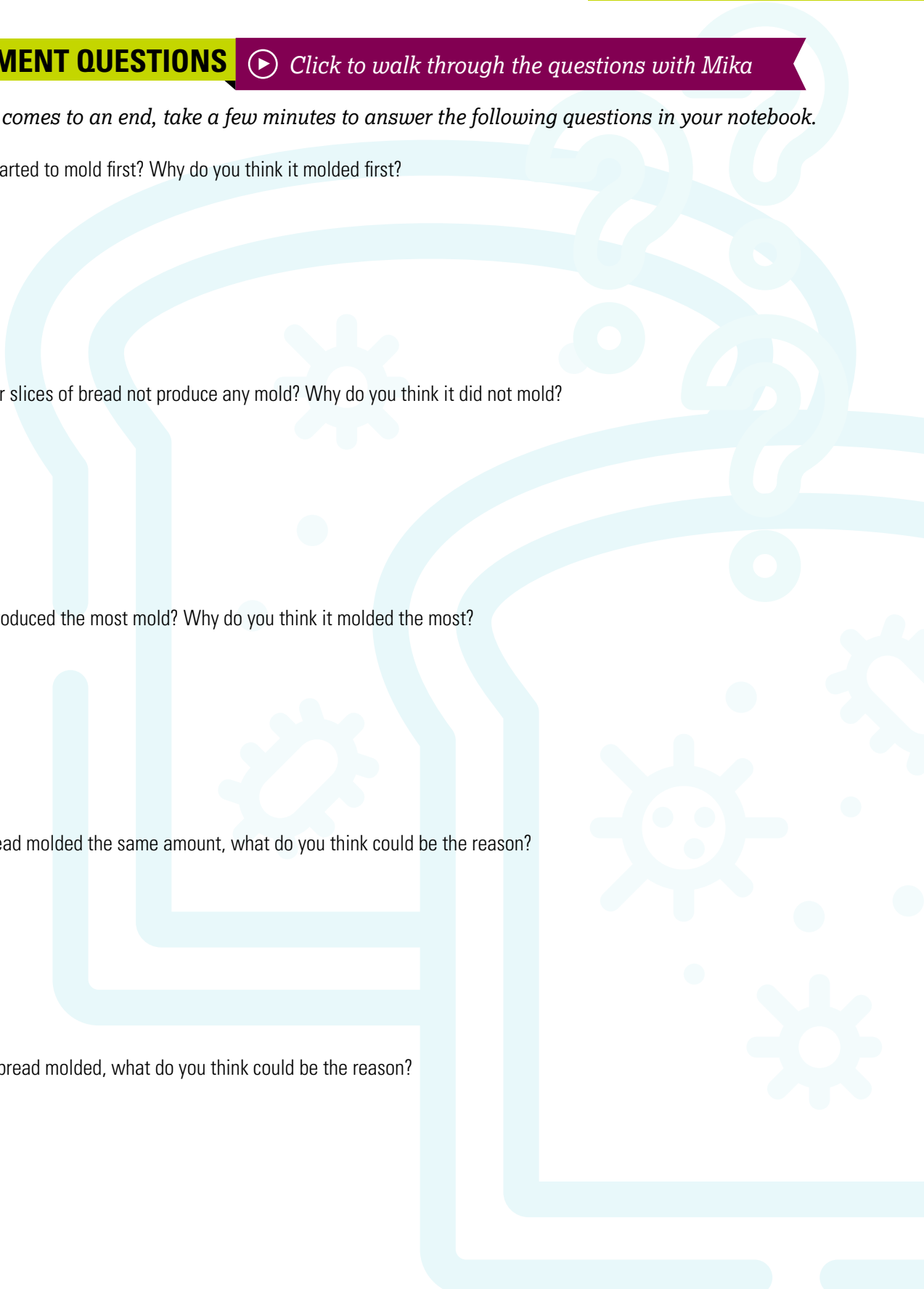


- 06. Next, wash your hands with soap and water for 20 seconds.** You can also sing the alphabet song from A to Z. Dry your hands. Then grab the fourth slice of bread and touch it all over. Place this in the “Soap and Water” bag. Seal the bag shut.
- 07. Next, touch a few surfaces around the house with your bare hands.** After 2 to 3 minutes of doing this, use hand sanitizer on your hands. Then, grab the fifth slice of bread and touch it all over. Place it in the “Hand Sanitizer” bag. Seal the bag shut.
- 08. Take your five baggies of bread and place them in a warm spot.** Take a picture, using a camera or smartphone, to document what they look like on Day 1. You can also draw a picture in your notebook of what your bread looks like.
- 09. Look at the bread every day and write down in your notebook** what you see. You can also take photos to document each day. If mold starts to appear on any of the bread slides, take a ruler to measure the mold. Write down in the size of the mold in your notebook. You can also draw or snap a picture of the bread each day to include with your notebook.



POST-EXPERIMENT QUESTIONS Click to walk through the questions with Mika

As your experiment comes to an end, take a few minutes to answer the following questions in your notebook.

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- 01.** What bread started to mold first? Why do you think it molded first?
 - 02.** Did any of your slices of bread not produce any mold? Why do you think it did not mold?
 - 03.** What bread produced the most mold? Why do you think it molded the most?
 - 04.** If all of the bread molded the same amount, what do you think could be the reason?
 - 05.** If none of the bread molded, what do you think could be the reason?

06. Did any part of the experiment surprise you?

07. Why do you think there is a “Control” bread slice? What would it mean if mold grew on the “Control” bread slice?

08. What other surfaces could you test in the moldy bread experiment?

09. What other cleaning products could you test in the moldy bread experiment?

10. In this experiment, we had you place the bread in a warm spot. Where else could you place the bread to determine the effects of temperature on mold growth?