Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences --particularly students of color and girls -- by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

See how much bacteria is around you!

Supplies Required:

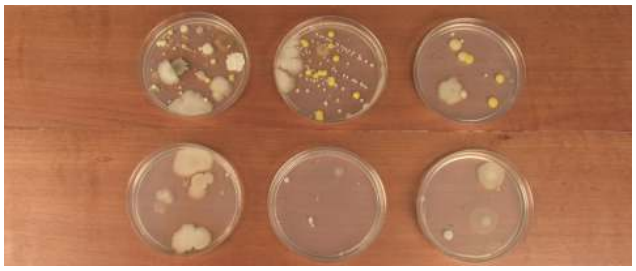
- Agar filled petri dishes
- Cotton swabs
- Permanent marker
- Gloves
- Pen and paper

Video

Learn how to grow bacteria: https://tinyurl.com/ycktmcv2

Overview

Bacteria are single celled microorganisms that multiply very quickly. Some bacteria is helpful. There is bacteria in our bodies that help us break down food in our digestive systems. Bacteria also helps milk turn into cheese! Other bacteria can be harmful by causing and spreading diseases. Because bacteria is very small, we can't see them without a microscope. In this experiment, we'll see the bacteria in colonies.



Instructions

1. Guess which two places are the dirtiest in your house. Write them down!
2. Put gloves on!
3. Use your sharpie to draw a line down the middle of the BOTTOM of the petri dish.
4. On one side of the line, label the dish with your first guess for the dirtiest place. On the other side of the line, do the same with the second place. For example, you can write "toilet seat" and then "door knob."
5. Grab a clean cotton swab and use it to wipe the first location. Open the petri dish so the agar is exposed. Make sure you know which side you just swabbed and match it to the label you wrote! Then, use the same swab and draw a squiggly line onto the correct side of the agar. Close the petri dish.
6. Grab a second clean cotton swab and use it to wipe the second location. Open the petri dish so the agar is exposed. Then, use the same swab and draw a squiggly line onto the other side of the agar. Close the petri dish.
7. Take off gloves and throw them away!
8. Wait 24 hours and write down what you see. Repeat for one week. Which side ended up with more bacteria?
9. Put gloves on and throw petri dishes away once your done!

Additional Resources

Think About It! What did you observe? Were you surprised by your results? Based on your observations, do you think that bacteria is living or nonliving? Explain your thinking. What other areas would you like to test?

1. Extra instructions! https://tinyurl.com/y9uv26vj
2. What are microorganisms? Find out with Dr. Binocs! https://tinyurl.com/hzudluk
3. How does your immune system work? https://tinyurl.com/y8lr5ztb

Share It Out

Share on social media: Share a picture of your petri dish on social media! Did the results surprise anyone? Use the hashtags:

#BacterialInvestigation
#ProjectExploration
#StemAtHome

Share via PE's website: Students who complete STEM@home activities and share what they learned with the PE team via our website will earn points which can be traded in for cash prizes at the Explore Store. Your project number is 226. Learn more at www.projectexploration.org/explore-store

Join PE's character contest!
Design a STEM character who will lead kids through activities and be featured on our website and in our STEMbooks. Cash prizes will be awarded to the top 3 finalists. Learn more at: www.projectexploration.org/character-contest.

project exploration
changing the face of science