A STEM in the Park Take Home Activity

STEM in the PARK™

Science, Technology, Engineering, and Mathematics

Germ Experiment —

Where Do Germs Grow in Your House??!

What You Need

- Unflavored gelatin
- Sugar
- Paper cups
- Plastic wrap
- Cotton swabs

What To Do

1. Boil 1/2 cup of water
2. Add 2 tsp of sugar and 2 tsp of unflavored gelatin
3. Stir until dissolved. Spoon into the cups (about 1 cm or 1/4 inch of gelatin in each cup.)
4. Cover immediately with Glad wrap to keep it clean and as uncontaminated as possible.
5. Chill for 24 hours

The next day: Label each cup. Then go around the house with cotton swabs and choose areas to collect germs. Rub the swab over the area. Rub the swab gently on the top of the gelatin. Ideal areas to swab would be the following: the toilet, a door knob, nothing (as a control), a plant, the kitchen sink, the inside of someone's mouth.

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What To Do cont.

Label and seal the collection cups. Once you have introduced the bacteria, you should cover the cup with some plastic wrap and seal it with some tape.

- Make sure to label each cup with the source of the bacteria it contains, otherwise you won't be able to tell which is which. You can do this using some tape and a marker.
- As an extra precaution, you can place each cup in a zipper-lock bag. This will provide an extra layer of protection against any hazardous bacteria colonies that may develop, but will still allow you to view the contents of the cup.

Place the cups in a warm, dark place. Leave the cups in a warm, dark place where the bacteria can develop, undisturbed, for several days. Remember to store the cups upside down, so the bacterial growth remains undisturbed by any water droplets.

- The ideal temperature for growing bacteria is between 70 and 98 degrees F (20-37 degrees C). If necessary, you can place the collection cups in a cooler location, but the bacteria will grow a lot more slowly.
- Leave the bacteria to develop for 4-6 days, as this will give the cultures enough time to grow. Once the bacteria begins to grow, you may notice a smell coming from the cups.

Record your results. After a couple of days, you will notice an amazing variety of bacteria, molds and fungi growing inside each cup.

- Use a notebook to record your observations on the contents of each dish and perhaps come to a conclusion about which locations had the most bacteria.
- Was it the inside of your mouth? The door handle? The buttons on your remote control? The results may surprise you!

The Science

Bacteria are microorganisms that grow everywhere. We can collect and grow them in specially prepared dishes. The sugared gelatin is an excellent medium for supplying bacteria with nutrients and an environment in which we can see them grow.

CAUTION: *Most bacteria collected in the environment will not be harmful. However, once they multiply into millions of colonies in a petri dish they become more of a hazard. Be sure to protect open cuts with rubber gloves and never ingest or breathe in growing bacteria. Keep growing petri dishes taped closed until your experiment is done. Then you should safely destroy the fuzzy bacteria colonies using bleach.*

This activity is brought to you by Wood County Hospital

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