Name _____ Date _____ Period _____

BACTERIAL GROWTH LAB

PURPOSE:

The purpose of this lab is for students to collect bacteria from a variety of locations and grow them at three different temperatures to evaluate their growth.

HYPOTHESIS:

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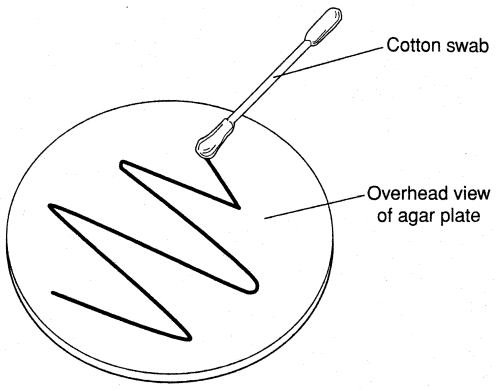
PROCEDURE – DAY ONE:

1. Obtain three pre-made agar petri dishes and three sterile cotton swabs. ***The agar contains the food sources, such as proteins and sugars, for the bacteria.*** Determine which item or location you would like to test. Make sure that your teacher has approved your test subject. You will make all three petri dishes from the same test subject.

2. Collect a sample by gently rolling a cotton swab over the item that you are testing. ***Sterile cotton swabs allow you to pick up bacteria and transfer them to petri dishes.*** Gently roll the cotton swab onto the petri dish in a zig-zag pattern, as shown by the picture. Be careful not to carve up the agar gel. Cover the petri dish immediately. Repeat this procedure with the other two petri dishes. Use a separate cotton swab for each sample.



3. Using a wax pencil, label the top of the petri dish with the following information: your name, your test subject, temperature. Label one temperature as HOT, one as COLD, and one as ROOM TEMPERATURE. Place scotch tape along the entire circumference of the petri dishes.

4. Sort the petri dishes based on temperature in three different locations, according to the instructions from your teacher. The petri dishes will sit upside down for a minimum of three days.

PROCEDURE – DAY TWO:

1. Obtain your three petri dishes from your teacher. Using a plastic inoculating loop to pick up a small sample of bacteria. Spread it thinly onto a glass microscope slide.

2. Hold the microscope slide with a pair of tongs. With your teacher's assistance, pass the slide a few times through the flame from a lit Bunsen burner. ***The heat from the flame will cause the bacteria to stick to the glass slide.***

3. Place a couple of drops of methylene blue stain on your heat-fixed bacteria sample. ***Methylene blue stain works by sticking to the DNA inside of cells, allowing them to become visible under the microscope.*** Wait one minute for the stain to work. Then dip your slide in and out of a bucket of water a few times. ***The bucket of water is used to rinse off the excess stain.*** Dry off the excess water using a paper towel.

4. View the bacteria under the microscope in both low power and in high power. ***The light microscope will allow you to see the bacteria that you have cultured.***

DATA TABLE:

TEMPERATURE	***QUALITATIVE AND/OR QUANTITATIVE RESULTS***
HOT	
COLD	
ROOM TEMPERATURE	

NAME OF TEST SUBJECT: _____

LOCATION OF TEST SUBJECT: _____