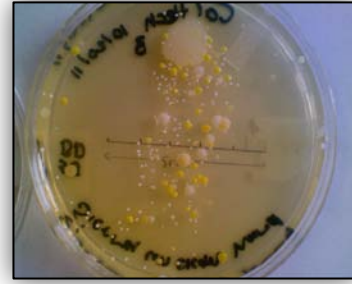


Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Bacterial growth

How effective is washing your hands or using hand sanitizer on removing bacteria? Let's find out!



We will be taking samples of the bacteria on the surface of our own hands and watching it grow! Samples will be taken from one student's hand under three different conditions:

1. Unwashed hand
2. Hand washed with soap and water
3. Hand sanitized with antibacterial hand gel

Use this worksheet to collect and organize your data, and remember to keep it handy since this experiment will continue for one week!

### Streak your plates

1. Chose *one* student from your group to obtain samples from (it is important to have all samples come from the same person to reduce experimental error!).
2. Label 3 Petri dishes, writing your group number, sample name (unwashed, washed, or sanitized), and class on the lid with a Sharpie.
3. Using a Q-tip, rub the Q-tip on the surface of the student's palm. Open your Petri dish (labeled "unwashed") containing agar and rub the Q-tip back and forth on the agar. Be careful not to apply too much pressure when doing this, otherwise the agar will tear.
4. Close the Petri dish.
5. Wash *one* hand with soap and water (may need assistance from a teacher or group member) and repeat Steps 3 and 4, except being careful to streak the plate labeled "washed" this time.
6. Apply hand sanitizer to *the other* hand (may need assistance from a teacher or group member) and let it air dry. Repeat Steps 3 and 4, except being careful to streak the plate labeled "sanitized" this time.

Table 1: Fill in this table with after analyzing the images of your Petri dish with the area covered by the bacteria (in centimeters squared). Also record any comments or observations on the sample during the experiment.

Sample	Area covered by bacteria (cm <sup>2</sup> )			Comments & observations
	Day 0	Day 4	Day 7	
Unwashed hand				
Washed hand				
Sanitized hand				

Plot the area covered by bacteria of the 3 samples versus time (in days) below. Make one line for each sample and chose a different color for each line. Make a legend to label which color corresponds with which sample.

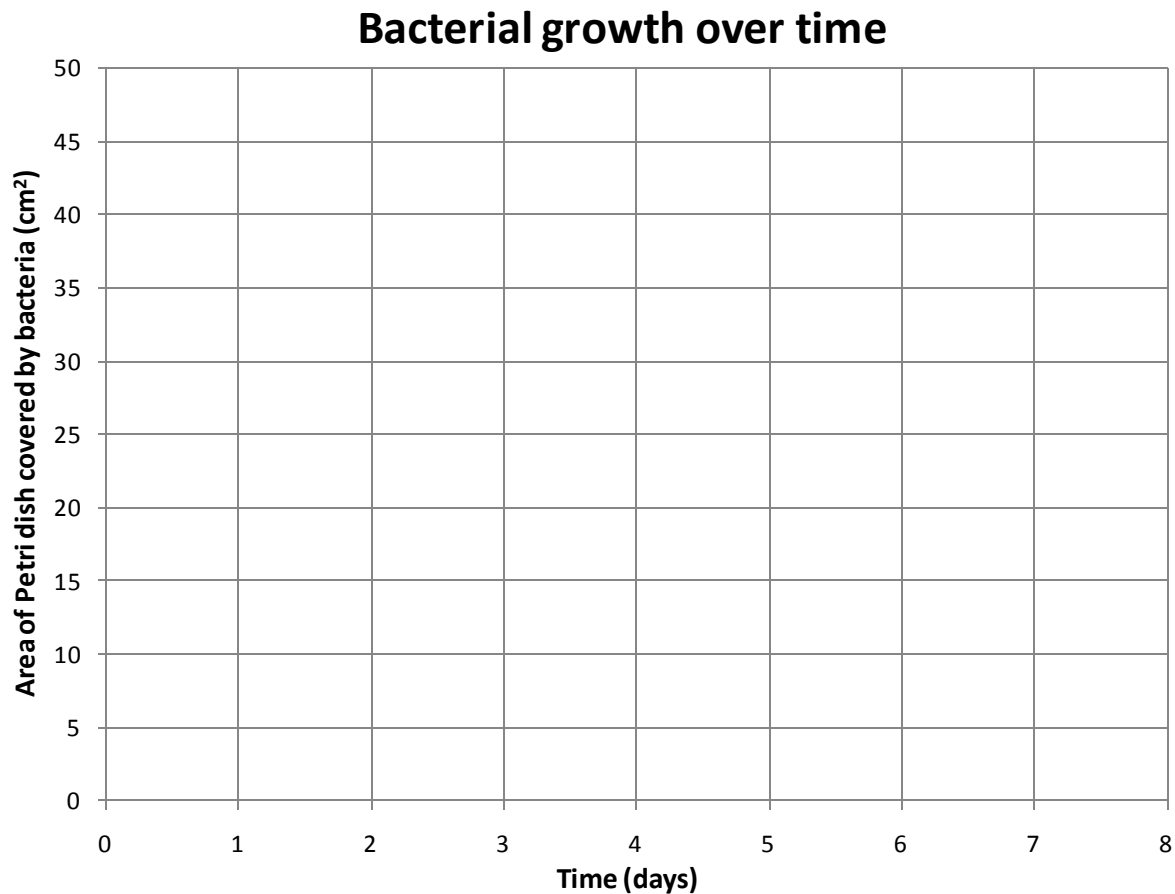


Figure 1 : Plot of bacterial growth over time for unwashed hand, hand washed with soap and water, and hand sanitized with antibacterial hand gel.

