

Disease and ME Project - Experiment

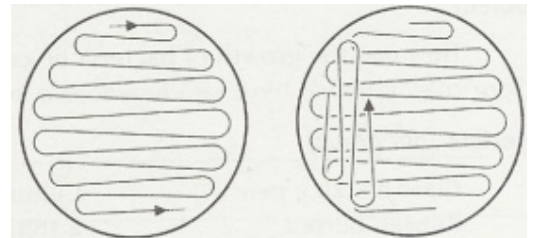
Driving Questions - How gross is my cell phone and what can I do to protect myself?

Materials –

- Computers
- Cell phones
- Petri dishes
- Cotton swab
- Nutrient agar
- Sterile swabs or inoculating needle
- Disinfectants used for cleaning phones - lysol wipes, alcohol swabs, bleach cleaner, ect
- Incubator
- Microscopes
- Safety gloves

Procedure for growing bacteria

1. Obtain 2 petri dishes per student in lab group
2. Label THE BOTTOM of each petri dish with Sharpie
 - a. One petri dish will be – “Name, date, before cleaning”
 - b. One petri dish will be – “Name, date, after cleaning”
3. Using a cotton swab, dip it in clean water and swab one cell phone.
 - a. You should roll the cotton swab in your fingers as you pull it across the surface. Make sure you swab the entire surface of the cell phone focusing on areas that are touched a lot.
4. Once a good sample is collected, lift the lid off the corresponding Petri dish and LIGHTLY draw a squiggly line in the agar with the end of the cotton swab. Roll the swab in your fingers as you draw the line. Replace the lid immediately. (see picture to the right)
 - a. You want to limit the amount of time the petri dish is without the lid.
5. Turn Petri dish over – so label side is up.
6. Using a disinfectant of your groups’ choice, clean the cell phone.
 - a. Make sure you focus on the areas that are touched a lot and experience the most exposure.
 - b. Allow some time for your phone to dry.
7. Now complete steps 3 – 5 for the “cleaned” cell phone.
8. Repeat steps 3-7 for all group members’ phones using a DIFFERENT disinfectant for each phone.
 - a. Example - If there are 3 group members, you will test 3 different disinfectants.
9. Once both petri dishes are completed, place them (upside down, label side up) in the incubator.
10. Check the appearance of growth in both petri dishes over the next few days. Make sure to document and take pictures of the progress – recording your data along the way!



Hypothesis - _____

Experimental Design

1. Independent variable: _____
2. Dependent variable: _____
3. Constants: _____
4. Control: _____
5. Source of error: _____

Data Collection

Time	Cell phones before cleaning - insert pictures and descriptions	Cell phones after cleaning - insert pictures and descriptions
DAY 1	<ul style="list-style-type: none">• Cell phone receiving _____	
	<ul style="list-style-type: none">• Cell phone receiving _____	
	<ul style="list-style-type: none">• Cell phone receiving _____	
	<ul style="list-style-type: none">• Cell phone receiving _____	

DAY 2	<ul style="list-style-type: none">• Cell phone receiving _____		
	<ul style="list-style-type: none">• Cell phone receiving _____		
	<ul style="list-style-type: none">• Cell phone receiving _____		
	<ul style="list-style-type: none">• Cell phone receiving _____		

DAY 3	<ul style="list-style-type: none">• Cell phone receiving _____		
	<ul style="list-style-type: none">• Cell phone receiving _____		
	<ul style="list-style-type: none">• Cell phone receiving _____		
	<ul style="list-style-type: none">• Cell phone receiving _____		

Conclusion Questions

1. Which cell phone showed the most growth? How did you know?
2. How do you think the bacteria/microorganisms got on the cell phone?
3. What happened to the growth of microorganisms on the cell phones AFTER cleaning occurred?
4. Based on your pictures and observations - Which disinfectant worked best? Which disinfectant would you recommend someone to use to clean his or her phone?