

Title: Classification of Bacterial Growth

Theme: Bacterial Classification/ Classification

**S5CS3. Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities.**

- a. Choose appropriate common materials for making simple mechanical constructions and repairing things.
- b. Measure and mix dry and liquid materials in prescribed amounts, exercising reasonable safety.
- c. Use computers, cameras and recording devices for capturing information.
- d. Identify and practice accepted safety procedures in manipulating science materials and equipment.

For this lesson, I obtained three different culture plates from a biology class and took them into my classroom. I gave the students an opportunity to choose three places in the classroom where they thought the most bacteria could be found. I then swabbed the three different sites using cuetips and spread the swabs on three different culture plates. The next week there was abundant growth on all the plates and the students were able to compare how much growth came from different places. I then helped the students use a metal loop to collect the growth from the plates and place them on slides. I helped the students focus the slides and they were responsible for characterizing the growth as either streptococcus, staphylococcus, streptobacillus, or a fungus. They recorded what they saw in their lab notebooks and I gave the answers on the board and discussed why the answers were what they were at the end of class.

Materials:

Microscope  
Microscope slides  
Pipettes w/ water  
Classroom w/ different sites where bacteria may grow  
Cuetip  
Culture plates  
Zip lock bags  
Metal culture loops

Safety Concerns:

Infecting the students with the different bacteria may be a concern. After gathering, making the plates, and viewing them under the microscope, the students should wash their hands and clean off the work space. Also, between each slide, the culture loop must be heated with either a lighter or a bunsen burner. It is absolutely necessary for either an adult to perform this sterilizing task, or for students to be supervised.

Facilitate the Lesson:

This lesson was given within a week of teaching the students of the importance of classification and characterization. They also performed the jelly bean classification lesson within a week of this lesson. The students were taught about the importance of grouping different utensils in the kitchen, they were told that athletes would not wear a football helmet in a soccer game, and different comparisons like this. Earlier this week, they also learned about the different structure of bacteria so that they could distinguish and classify

different bacteria. For example, they were able to distinguish between cocci and bacilli, as well as strepto and staph. They were able to characterize what they saw under the microscope because of these earlier lessons.

Modifications:

If I were to perform this experiment again, I would know exactly what each growth was in the culture plate so that I could only place exactly what I wanted on the plates for the students to view. I also wouldn't help the students focus the microscopes as quick and force them to really work hard to maneuvering the lense.