**WATER TESTING AND TREATMENT**

**DATA COLLECTION AND ANALYSIS**

**1.** **Get your team’s plates and separate them into stacks of experiment 1 (no bleach) and experiment 2 (bleach treatments)**

When you plated the bacteria you spread them out so that the microscopic organisms had lots of room around them. The plates looked wet but you couldn’t see any bacteria.

**A.** Describe what you see. If there is growth on a plate include the shape, color and number. If there isn’t growth what could the lack of growth mean?

*LB plate:*

*EMB plate:*

*Citrate plate:*

**2.** **Looking at the whole class’ data gives you much more information.**

**A.** In the whole class, which concentration of lake water gave the easiest data to work with?

**B.** Which type of plate allowed the largest number of bacteria to grow?

**C.** If you look at just the LB plates, what relationship would you *expect* between the number of colonies seen from full strength lake water and the number of colonies seen from ½ strength lake water? Between full strength lake water and ¼ strength lake water? Do you see this relationship on the plates the class prepared?

**D.** Do the data help make sense of why different groups started with different dilutions of lake water? Write a one or two sentence explanation of how having data from the different dilutions helps data collection and interpreting what the data mean.

**E.** When you prepared the plates you wrote down predictions about which plates would have the most and the least growth. Rewrite you predictions here. Do the class data support your predictions or do you need to update your thinking based on your data?

**The media you used is called selective media because the nutrients and chemicals included allow (select for) some things to grow and don’t allow (select against) other organisms. After you plated the samples you discussed which media selected for which types of bacteria. Refer to those notes now.**

**F.**  If you consider all of the data from all of the plates, what conclusions can you make about the amount and types of bacteria in this lake?

**G.** If you were involved in water resource management for the local utility company how could you use plating on selective media in your daily work?

**H.** If you were involved in resource management for the park service how could you use water sampling and growth on selective media in your work?

**I.** Which concentration of bleach was the best at killing the bacteria?

**J.** Which concentration of bleach was the lowest amount that you could use and still kill the bacteria? Why might someone want to know the lowest concentration that disinfects? Why not go with ‘more is better’ and just add a lot?