Principles of Biomedical Science

Virtual Learning

9-12 / PLTW® PBS

May 13, 2020

Principles of Biomedical Science

9-12/PLTW® PBS
Lesson: May 13, 2020

Objective/Learning Target:

Students will be able to: identify and use multiple technique when transferring and growing bacteria in petri dishes in a lab setting. *(Reference: PLTW®* 5.1.3 Isolating Bacteria)

Let’s Get Started (Bell Ringer):

Watch the following Videos:

Streak Plate Method - Amrita University

Streak Plate Quadrant Method

Lesson/Activity: Spread Plate Method

Start by watching the following video from Microbiology -004-Spread Plate Method and answer the following question in your notebook, lab journal, or on a separate piece of paper.

1. Why is the spread plate method used for bacteria?
2. A successful spread plate will have what when your done?
3. What is the name of the tool used to make the "spread"

You may also want to visit Online Microbiology Notes to help as well.

Answers:

1. Easy to count and isolate groups of bacteria.
2. WIll have a countable number of isolated bacterial colonies evenly distributed on the plate.
3. Plate spreader or “hockey stick”

Lesson/Activity continued: Pour plate method

Please use the following resources to help answer the following question about the Pour Plate Method below in your lab journal, notebook, or on a seperate piece of paper. Serial dilutions and pour plate technique and MicrobeOnline

1. Pour Plate Method for isolating bacteria is used for?
2. When taking Pour Plates you have to make the bacteria less concentrated as you make new samples, what is this referred to as?
3. Once the dilutions are made, and bacteria is grown, what can be done with the colonies on the plates?
4. Each tube in a cereal dilution as you continue down the line will be what?
5. A single dilution will be = to what?
6. The Total Dilution is equal to what?
7. Once you pour the plates what will you do to the petri dish?
8. What does TNTC stand for?
9. What does TFTC stnad for?
10. To calculate the number of bacteria per gram per sample what must you do?

Answers:

1. Quantifying bacteria in a sample
2. Serial dilution
3. Colonies can now be accurately counted
4. Consistent in dilution by the same amount
5. Amount transferred / Amount transferred + Volume of blank
6. The Current Dilution x Previous Dilution
7. Swirl the dish to mix it
8. Too Numerous To Count
9. Too Few To Count
10. Number of Colonies x Reciprocal of dilution counted

Practice:

Use your own resources to find the answer to the following question. Put your answers in your notebook, lab journal, or on a seperate piece of paper.

What are three reasons why you would perform a stab culture when working with Bacteria?

Answers:

1. Demonstrate gelatin liquefaction
2. Oxygen requirement for the bacterium
3. To maintain stock culture for preservation of bacteria

Additional Practice:

Check yourself before you wreck yourself…

Try this quiz over Streak Plate Tools

Answers:

Provided at end of quiz