

Biology Remote Learning Program

Introduction to Our Remote Learning Program

Dear Students and Parents:

As we cannot have regular classes, we will be learning biology through this remote learning program. It will be different than regular class in that there won't be the opportunity for me to explain the material, only for me to guide you, but you must study and learn the material from the book. I will be including some short notes and pointers with the material to help you learn and understand what you will be reading.

It is not easy reading, as reading for example, a biography or a short story. Expect to read the material **at least** twice, the first time to familiarize yourself with the general concepts, and the second (and third) times to fully grasp the material. **Please note that if you paid attention until now, you will be familiar with some of the material, as it was mentioned and discussed briefly in previous chapters.**

Accompanying the pages from the book, I will be sending a worksheet for you to complete, so we can ascertain that you have read and comprehend the material. This will be composed of questions from the book at the end of the chapter, my own questions, and I will also attempt to include questions from recent regents associated with the material. Please fill them out and return to me, as this is the work that you will be graded on.

We will be starting the program from Chapter 19, Bacteria and Viruses, because that is what we are involved in presently, and this will make you familiar with the current pandemic and associated issues. The chapter is divided into 3 sections: 1, 2, and 3, and we will start with section 1. Generally, we do one section per session (Note: Section 2 is very short). At the completion of this chapter, I intend to focus on the human body, starting with chapter 35. That should be useful and interesting.

I thank you in advance for your cooperation,

Sholom Bresler

You may return your work in one of the following ways:

- A. email to scienceb.mirrer@gmail.com
- B. Fax to 718 375 6342
- C. Mail to Mirrer Mesivta High School 1791-5 Brooklyn NY 11223

YOU MUST INDICATE ON YOUR WORK YOUR INFORMATION AS TO HOW YOU WOULD LIKE YOUR WORK TO BE RETURNED.

Page 471-2

1. What are Prokaryotes? _____

2. Name the two different groups(kingdoms) of Prokaryotes:
 - a. _____ Describe its main defining factor: _____

 - b. _____ Describe its **2** main defining factors: _____

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3. How do methanogens found in a cow's gut affect Earth's atmosphere? _____

4. Describe the method used to determine the type of cell walls in eubacteria. _____

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5. Name and describe the 2 types of autotrophs.
 - a. _____ Describe how it obtains energy: _____

 - b. _____ Describe how it obtains energy: _____

6. Explain why the bacterium *Clostridium botulinum* commonly found in unsterilized canned food. _____

7. What is the job of an epidemiologist? _____

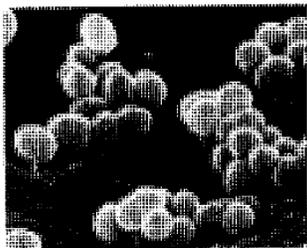
8. Why would it be difficult to kill a facultative anaerobe bacterium? _____

9. Compare the two different types of bacterial reproduction:

a. Binary fission _____

b. Conjugation- _____

10. Identify the type of bacteria in the photographs below:



A. _____

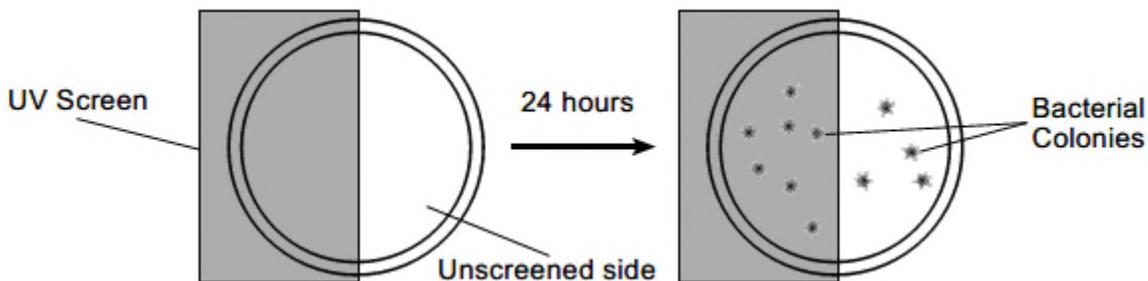
C _____



B. _____

Class Biology Remote Learning Chapter 19-1 Bacteria and Viruses

Base your answers to questions 11-13 on the information and diagram below and on your knowledge of biology. An experiment was carried out to determine the effect of exposure to ultraviolet (UV) light on the growth of bacteria. Equal quantities of bacterial cells were spread on Petri dishes that are used to grow colonies of bacteria. Half of each dish was shielded from the UV light with a UV screen. The other half was exposed to UV light for various amounts of time. After the UV treatment, the bacteria were grown in an incubator for 24 hours and the number of colonies was counted. The diagram below represents the setup of the experiment



The table below contains the data collected at different exposure times by counting the number of bacterial colonies on both the screen-covered side and unscreened side. state a hypothesis for the experiment. *Living Environment–June '18 Q59-60*

Bacterial Growth

Exposure Time to UV Light (min)	Colonies on Screened Side	Colonies on Unscreened Side
0 (No exposure)	20	22
0.5	21	19
1.0	23	16
2.0	22	10
5.0	24	5
10.0	23	1

11. Analyze the experiment that produced the data in the table. In your answer, be sure to:

state a hypothesis (a possible explanation or scientific idea) for the experiment _____

12. State whether the results of the experiment support or fail to support your hypothesis. Support your answer. _____

13. Identify the type of bacteria that were likely used in this experiment. _____

Mirreri Yeshiva HS April 28, 2020
Biology Remote Learning Chapter 19 Bacteria and Viruses

Points to remember

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1. Prokaryotes: Remember that this part of the chapter is discussing a particular type of bacteria.
2. The chapter discusses how to classify (divide into main groups)

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3. These bacteria are divided into 2 main groups (kingdoms)
4. The differences are in the makeup of the cell walls and genetic makeup
5. Eukaryotes- have nucleus

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6. Identify means to help you know which one it is.

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7. Auto= on its own (think **automobile**) troph- nourishment
8. Hetero= other or from other

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9. Obligate= in needs, is "obligated"
10. Aerobes= air -oxygen; **anaerobes= no** oxygen, (an, un=no)
11. Facultative= works as in factor, factory, official, office
12. See top box on page

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13. Two types of reproduction:
 - a. Binary fission- fission means to split as in fissure $1 \div 2 = 2$
 - b. Conjugation- to come together $1 + 1 = 2$ separate, but with joined genetic material
14. Endospore