High School Science Virtual Learning

College Biology
Chapter 15 Recap Part 2

May 13, 2020

High School College Biology
Lesson: May 13, 2020

Objective/Learning Target:
Students will be able to discuss the history and origins of life and the evolution of prokaryotes and protists.

Let's Get Started:

1. What are the three shapes of prokaryotic cells?

2. One reason why the spontaneous generation of life on Earth could not occur today is the abundance of _____ in our modern atmosphere.

Answers:

1. Spherical (cocci), rod-shaped (bacilli), spiral
2. Oxygen (O_2)

Lesson Activity:

1. Read over pages 17-32 of the Chapter 15 Notes. (Linked Here)

2. Watch this Crash Course video on Archaea, Bacteria, and Protists.

Practice:

1. How do bacteria help restore the atmospheric CO_2 required by plants for photosynthesis?

2. What are extremophiles and where do they live?

3. Seaweed is not a plant. What is it and what are the different varieties?

Practice Answers:

1. Bacteria, in the form of decomposers, break down down plant and animal material. As this material is broken down CO_2 is released back into the atmosphere.
2. Extremophiles are groups of Archaea that live in extreme environments. Those environments include: extremely hot, high salt, and low-oxygen environments.
3. Seaweed is a large multicellular marine algae. The different varieties are green, red and brown algae.

More Practice:

1. Contrast exotoxins and endotoxins.

2. The bacteria that cause tetanus can be killed only by prolonged heating at temperatures considerably above boiling. What does this suggest about tetanus bacteria?

3. How is the process used in sewage treatment similar to the decomposition of leaf litter in a forest?

4. What do all protists have in common?

More Practice:

5. Which of the following protists is not a human pathogen?
   a. *Toxoplasma*
   b. *Trichomonas*
   c. *Paramecium*
   d. *Giardia*

6. Which algal group is most closely related to plants?
   a. *diatoms*
   b. *green algae*
   c. *dinoflagellates*
   d. *seaweeds*

More Practice Answers:

1. Exotoxins are poisons secreted by pathogenic bacteria; endotoxins are components of the outer membrane of pathogenic bacteria.
2. They can form endospores
3. Prokaryotes in soil or water decompose the organic matter in leaves and other plant and animal remains, returning the elements to the environment in inorganic form. Prokaryotes ina sewage treatment facility decompose the organic matter in sewage, converting it to an inorganic form.
4. They are eukaryotes that are not plants, animals, or fungi.
5. C
6. B

Review Tools:

-Kahoot 2
-Bozeman Science Video Bacteria
-Bozeman Science Video Archaea
-Bozeman Science Video Protists