

Question 1: Share a brief plan of how you will successfully complete this course. Your response will have three parts (A, B, and C). Include (A) the study strategies you will use, referencing the ideas presented in the Course Learning lecture (Guide A, Section 1); (B) which of the four course topics you are most interested in and/or motivated by and why; and (C) how you most envision using this course's material once the course is completed (as a consumer, citizen, and/or culturally).

- A. I have been using this strategy for a while and so far seems to work well. I review material every other day just like having classes every other day. Sure reviewing every day could be more beneficial, but I like to do it every other day because I do it on days when I do not have the class (in a way reviewing every day) and allows me to focus on other topics. This is part of the repetition aspect of memory.
- B. I am most interested in the health topic of this course. There are a lot of things that I know and understand, but there are also a lot that I don't understand. I want to get into weight training. If I could learn anything like what is the cause of muscle growth/reduction, what nutrients are necessary, and the misconceptions of those nutrients would be beneficial to my health.<br>
- C. As mentioned in B, getting to understand how the body works would be beneficial knowledge for weight training because it is all about the care and development of the human body. In the modern world, there is too much information being scattered around that people like me can easily misinterpret.

Question 2: Describe each of the three steps of science discovery using a real-world example from your life experiences. For example, it could be a medical situation, learning how to garden, or a travel adventure.

Exploration: Going to the Grand Canyon. This is investigating a new scenery/landscape that is not the norm.

Description: Very rigid landscape. Tall walls of earth. Dry landscape, almost desert-like. You can see the layers of rock that show different periods of time.

Explanation: The canyon was formed from a river a long time ago. That river slowly eroded into the landscape and created a channel.

Question 3: In the labeled cell model video, you were asked to identify the structures labeled A, B, C, D, E, and F in your notes. Using your notes, list the name of each structure as well as each structure's function within the cell.



- A. Nucleus: the brain of the cell because it contains the cell's genetic material. Some cells have multiple nuclei.
- B. Rough endoplasmic reticulum: produces proteins
- C. Smooth endoplasmic reticulum: produces lipids and more.
- D. Golgi Complex: Where the amino acid chains from the endoplasmic reticulum are processed to make functioning proteins
- E. Vesicle: Contains substances a cell produces, including hormones, and secretes them at the plasma membrane
- F. Mitochondrion: Often called the "powerhouse" of a cell, producing energy-rich ATP molecules. A single cell can have many mitochondria.

Question 4: Tell a cell's life story, including four different processes (life stages) that occur to that cell over time. There is a cell that has been told by the DNA to constantly reproduce itself. The cell starts with mitosis, where it divides and becomes two daughter cells. Those two daughter cells then grow in size over time and then go into mitosis again. Then for whatever reason, some of those daughter cells are told to change their purpose. This is called differentiation. Some of those daughter cells are needed as blood cells because the organism recently got a cut on its arm and lost some blood because of it. Over time, those blood cells have gotten old and now die because they are at the end of their term. This is called apoptosis, where a cell is programmed to die at a certain time.