SGI Activity 6: Cell Structure and Function

Today, you will use your literacy skills to gain more information about cell structure and function. For this activity we will be using the PALS reading strategy. Please be sure to follow along with this reading guide as you discover more about cells with your partner.

**Before Reading:**

Vocabulary Preview: If you know the word below please put a +, if you do not please put a –, and if you think you might know what the word means but aren’t quite sure please use a \*.

\_\_Biosphere \_\_Molecule \_\_Compositions \_\_Surface Area

\_\_Monastery \_\_Declared \_\_Momentous \_\_Confirmed

\_\_Metabolism \_\_Homeostasis \_\_Radiate \_\_Nuclei

\_\_Unicellular \_\_Hemoglobin \_\_Organism \_\_Cell Biology

\_\_Organelle \_\_System \_\_Organ \_\_Tissue

\_\_Cell \_\_DNA \_\_Nucleus \_\_ Eukaryotic

\_\_Prokaryotic \_\_Structure \_\_Function \_\_Proteins

\_\_Protists \_\_Cytoplasm \_\_Cell Membrane \_\_Microvilli

\_\_Microtubules \_\_Mitochondria \_\_Hemoglobin

Agree or Disagree: Read each of the statements below before you read and record whether you agree (A) or disagree (d) with the statement. Then after you read, record the correct answer that you have gained from the text.

\_\_\_Increased surface area of a cell increases the rate of nutrient absorption. \_\_\_

**\_\_\_Red blood cells do not have a nucleus so they can carry more oxygen. \_\_\_**

\_\_\_Muscle cells, like all cells, have the same amount of mitochondria. \_\_\_

**\_\_\_ All cells have some form of a cytoskeleton. \_\_\_**

\_\_\_One of the most important regulators of homeostasis is the cell membrane. \_\_

**\_\_\_ All cells have a cytoplasm and cell membrane but many do not have DNA. \_\_**

\_\_\_ Some organelles have a membrane that is two layers thick. \_\_\_

**\_\_\_ An atom is bigger than a cell \_\_\_**

\_\_\_ Corks are made from plant matter. \_\_\_

**\_\_\_ Cells were named ‘cells’ because the person that first observed them under a microscope thought they looked like rooms. \_\_\_**

**During Reading - T/F Evaluation** You should read this passage with a partner, one partner reads aloud, while the other follows. You will alternate reading each paragraph. Periodically stop evaluate and mark the statements below as **T**rue for **F**alse. If a statement is false, rewrite it to make it correct.

1. **The Cell Principle**

\_\_\_It was the discovery of cells by Robert Hooke that led to the development of the Cell Principle (Theory)

\_\_\_The cell principle has 3 parts.

\_\_\_The cell principle states that all cells have a nucleus.

1. **All Cells contain Genetic Information**

\_\_\_Animals and plants are the only eukaryotes.

\_\_\_Bacteria are prokaryotes because their DNA is located in the cytoplasm

1. **All Cells Have a Cell Membrane and Cytoplasm**

\_\_\_The cell membrane is a non-permeable barrier, which allows no substances to pass through.

\_\_\_Most metabolic processes occur in the cytoplasm.

\_\_\_The cell membrane helps maintain homeostasis by regulating the flow of substances in and out of the cell.

1. **All Cells Must Maintain an Internal Balance**

\_\_\_Cells have to maintain constant internal conditions, such as water content and temperature, this process is called homeostasis.

1. **The Cytoskeleton**

\_\_\_The cytoskeleton provides structure and organization to the cytoplasm to help maintain the shape of the cell.

1. **Cells in Multicellular Organisms Specialize**

\_\_\_Muscle cells are specialized to contract and create movement.

\_\_\_Muscle cells containing large numbers of ribosomes to provide energy for movement.

**After Reading:**

What are the similarities between all cells?

What is the major characteristic that classifies a cell as a prokaryote or eukaryote?

Some substances can damage cell membranes. If a cell membrane is damaged, how might this effect the function of the cell membrane?