Unit Overview: Cell Theory and Single Celled Organisms

|  |  |  |
| --- | --- | --- |
|

|  |
| --- |
| **Essential Questions** |

What structures of single cell organisms allow them to carry out basic functions of life? | * I totally get it
* I kinda get it
* I don’t get it
 |
| **What Came First:** * (5th Grade) Explain why some organisms are capable of surviving as a single cell while others require many cells that are specialized to survive.
 |
| **What Comes Next:** * (High School: Biology) Explain how specific cell adaptations help cells survive in particular environments (focus on unicellular organisms).
 |
| **Enduring understanding**  | **Important to know and do** | **Worth being familiar with** |
| * Single celled organisms have unique structures that allow them to survive and reproduce.
 | * Using a microscope, identify the four single celled organisms.
* Compare/contrast the four single celled organisms.
* Describe three fundamental concepts of the Cell Theory
* Describe and identify the structures that allow single celled organisms to function as living things (grow, reproduce).
* Identify methods of obtaining food or sources of nutrition
* Eukaryotic vs. Prokaryotic
* Match the single-celled organisms (amoeba, paramecium, volvox, and euglena) with the specialized structures (flagellum, cilia, pseudopod, colony) that allow them to perform specific functions.
 | * Some single celled organisms have characteristics of plants and some characteristics of animals and some both plant and animal characteristics.
* Compare and contrast osmosis and diffusion and describe how single-celled organisms utilize these features.
* Scientists and their discoveries related to cell theory—Schleiden, Schwann and Virchow
 |
| **Vocabulary to master** |
|

|  |  |  |  |
| --- | --- | --- | --- |
| * protists
 | * Chloroplast
 | * Cell Wall
 | * Algae (plant-like)
 |
| * Volvox
 | * Pseudopods
 | * Organelle
 | * Protozoa (animal-like)
 |
| * Euglena
 | * Flagellum
 | * Heterotrophs
 | * Phagocytosis
 |
| * Paramecium
 | * Cell Theory
 | * Autotrophs
 | * Photosynthesis
 |
| * Amoeba
 | * Nucleus
 | * Unicellular
 | * Cellular Respiration
 |
| * Cilia
 | * Cell Membrane
 | * Multicellular
 | * Eukaryote
 |
| * Colony
 | * Cytoplasm
 | * Diffusion/Osmosis
 | * Prokaryote
 |

 |