

MARZANO LEARNING SCALES

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| Unit 1: Investigating Cells Topic 2: Prokaryotic Cells/ Eukaryotes & Cell Differentiation | 3 Week |
| Unifying Theme: Prokaryotic cells are less complex than eukaryotic cells however both provide the foundation for all life on earth. All cells perform specific functions to help the organism maintain homeostasis. | |
| Key Standard: SC.6.L.14.4 Compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles. | |
| Support Standards: SC.6.L.14.1 Describe and identify patterns in the hierarchical organization of organisms from atoms to molecules and cells to tissues to organs to organ systems to organisms. SC.6.L.14.2 Investigate and explain the components of the scientific theory of cells (cell theory): all organisms are composed of cells (single-celled or multi-celled), all cells come from pre-existing cells, and cells are the basic unit of life. SC.6.L.14.3 Recognize and explore how cells of all organisms undergo similar processes to maintain homeostasis, including extracting energy from food, getting rid of waste, and reproducing. SC.912.L.14.2 Relate structure to function for the components of plant and animal cells. Explain the role of cell membranes as a highly selective barrier (passive and active transport). SC.912.L.14.3 Compare and contrast the general structures of plant and animal cells. Compare and contrast the general structures of prokaryotic and eukaryotic cells | |

ACEDMIC VOCABULARY: *Study for vocabulary quiz*

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|----------------------|--|--------------|--|------------------------|--|-------------------------|
| Animal cell | | Cytoplasm | | Multi- celled organism | | Prokaryote |
| Cell membrane | | Energy | | Nucleus | | Reproduction |
| Cell wall | | Eukaryote | | Organelles | | Single- celled organism |
| Cells | | Function | | Photosynthesis | | Structure |
| Cellular respiration | | Homeostasis | | Plant cell | | Vacuoles |
| Chloroplast | | Mitochondria | | Multi- celled organism | | |

LEARNING GOAL

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| 4 | I CAN ... compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles enough to teach it. |
| 3 | I CAN... compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles enough to pass a quiz. |
| 2 | I CAN... compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles with help. |
| 1 | I CANNOT... The student will be able to compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles, even with help. |

LEARNING OBJECTIVES: *I can...*

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| Explain how prokaryotic cells are structured. |
| Differentiate between types of prokaryotic cells. |
| Explain how structural modifications of specialized cells are related to function. |
| Explain the need for cell differentiation in multicellular organisms. |
| Describe the main structures common to all eukaryotic cells. |
| Distinguish between plant and animal cells. |