

# 6

## The Living World (Life Science)

**Essential Question: How are the structure and function of cells similar to that of**

Enduring Knowledge	Science Concepts	GE	Evidence of Understanding
<p><b><u>Survival of Organisms:</u> All living organisms and their component cells have identifiable characteristics that allow for survival.</b></p>	<p>a. All organisms are made of one or more cells. Cells are the basic unit of structure and function in an organism. All cells carry out the same basic functions to survive: (obtain food (energy) and materials for growth and repair; eliminate (recycle) waste; reproduce; provide for defense).</p> <p>b. All cells are enclosed in a membrane that allows materials to pass into and out of the cell.</p> <p>c. Most cells are microscopic.</p>	30	<p>Explaining that the cell, as the basic unit of life, has the same survival needs as the organism</p> <p>Identifying and drawing individual cells seen through a microscope and recognizing that most cells are microscopic</p> <p>Diagramming the exchange of materials through a cell membrane</p>
<p><b><u>Cell and Tissue Differentiation:</u> All living organisms and their component cells have identifiable characteristics that allow for survival.</b></p>	<p>a. In addition to basic functions, cells can carry out “specialized” functions that support the survival of groups of cells and the organism.</p> <p>b. Groups of similar cells connect and work together to form tissue, groups of tissue form organs, and groups of organs form systems.</p>	32	<p>Explaining the relationship between cell, tissue, organ and system</p> <p>Observing plant or animal tissue and explaining how “specialized” cells help to support the specialized function of tissue (e.g., muscle cells form muscle tissue, skin cells form skin tissue, nerve cells form brain tissue)</p>
<p><b><u>Chemical Reactions within Cells:</u> All living organisms and their component cells have identifiable characteristics that allow for survival.</b></p>	<p>a. In order to obtain energy for all the functions of survival, individual cells take in food and oxygen to produce energy and send out waste materials.</p>	33	<p>Demonstrating through drawings, stories or models that cells take in food and oxygen to produce energy and send out waste materials</p>

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**organisms, and how do they support the survival and function of organisms?**

Concepts in Detail	Potential Inquiries/Activities	Resources/Notes
<ul style="list-style-type: none"><li>- Cells carry out functions that allow them to live, grow and develop.</li><li>- Organisms carry out common functions for survival, growth, and development.</li><li>- Cells are the smallest unit of life.</li><li>- There are both single and multi-celled organisms.</li><li>- All cells are enclosed in a membrane.</li><li>- Cells need to take in and eliminate materials in order to live.</li><li>- Cells need food, water, air.</li><li>- Microscopes are a scientific tool that help us identify cells.</li></ul>		
<ul style="list-style-type: none"><li>- All cells carry out the same functions in order to survive.</li></ul>		
<ul style="list-style-type: none"><li>- Cells, like other organisms, need energy to survive.</li></ul>	How does the amount of sugar affect how much CO <sub>2</sub> yeast is produced in a given amount of time. Use yeast, sugar, warm water in a test tube covered with a balloon.	

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**Essential Question: How do traits of organisms help in their survival, both as**

Enduring Knowledge	Science Concepts	GE	Evidence of Understanding
<b><u>Natural Selection/Evolution:</u> All Living Things exhibit patterns of similarity in their structures, behaviors and biochemistry.</b>	a. When the environment changes some plants and animals with advantageous traits are able to survive; others, with less-advantageous traits, either move to new locations or die.	39	Explaining, through engaging in simulations, how a variation in a characteristic (trait) enables an organism to survive in a changing environment

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**individuals and species?**

<b>Concepts in Detail</b>	<b>Potential Inquiries/Activities</b>	<b>Resources/Notes</b>
<ul style="list-style-type: none"><li>- Some organisms survive well in a given environment.</li><li>- The traits of the organisms help them survive in the environment.</li><li>- Changes in environmental conditions can affect survival of individuals as well as species.</li></ul>		