

## Curriculum Outline 2021-22 - Science 7

Unit	Standards	Essential Skills	Resources	Assessments
<b>1. Characteristics of life &amp; Cells</b>	<ul style="list-style-type: none"> <li>● <b>Key Idea 1:</b> Living things are both similar to and different from each other and from nonliving things.</li> <li>● <b>MS-LS1-1.</b> Plan and conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.</li> <li>● <b>MS-LS1-2.</b> Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</li> <li>● <b>MS-LS1-3.</b> Construct an explanation supported by evidence for how the body is composed of interacting systems consisting of cells, tissues, and organs working together to maintain homeostasis.</li> <li>● <b>MS-LS1-8.</b> Gather and synthesize information that sensory receptors respond to stimuli, resulting in immediate behavior and/or storage as memories.</li> </ul>	<ul style="list-style-type: none"> <li>● Develop evidence living things are made of cells</li> <li>● Distinguish between living and non-living things</li> <li>● Develop a model of both a plant and an animal cell</li> <li>● Compare and contrast the parts of plants, animals, and one-celled organisms</li> <li>● Describe the function of various cell components</li> <li>● Explain how interacting systems work together to help living things maintain homeostasis</li> <li>● Use cause and effect relationships to predict phenomena in natural systems</li> </ul>	<ul style="list-style-type: none"> <li>● Various YouTube videos</li> <li>● Amoeba Sisters</li> <li>● Classroom demonstrations</li> <li>● Google Classroom</li> </ul>	<ul style="list-style-type: none"> <li>● Cell models</li> <li>● Quizzes</li> <li>● Unit test</li> </ul>
<b>2. Photosynthesis &amp; Respiration</b>	<ul style="list-style-type: none"> <li>● <b>Key Idea 6:</b> Plants and animals depend on each other and their physical environment.</li> <li>● <b>MS-LS1-6.</b> Construct a scientific explanation based</li> </ul>	<ul style="list-style-type: none"> <li>● Trace the movement of matter and energy during photosynthesis</li> <li>● Explain how molecules</li> </ul>	<ul style="list-style-type: none"> <li>● Various YouTube videos</li> <li>● Google</li> </ul>	<ul style="list-style-type: none"> <li>● Respiration lab</li> <li>● Quiz</li> <li>● Test</li> </ul>

	<p>on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p> <ul style="list-style-type: none"> <li>● <b>MS-LS1-7.</b> Develop a model to describe how food molecules are rearranged through chemical reactions to release energy during cellular respiration and/or form new molecules that support growth as this matter moves through an organism.</li> </ul>	<p>are broken apart and put back together in order to release energy during respiration</p> <ul style="list-style-type: none"> <li>● Provide evidence that green plants make food and explain the significance of this process to other organisms</li> </ul>	<p>Classroom</p>	
<p><b>3. Growth, Development &amp; Reproduction</b></p>	<ul style="list-style-type: none"> <li>● <b>Key Idea 2:</b> Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.</li> <li>● <b>Key Idea 4:</b> The continuity of life is sustained through reproduction and development.</li> <li>● <b>MS-LS1-4.</b> Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants, respectively.</li> <li>● <b>MS-LS1-5.</b> Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</li> </ul>	<ul style="list-style-type: none"> <li>● Identify and explain the basic genetic structures within humans</li> <li>● Describe plant and animal structures and behaviors that could impact their chances of reproduction</li> <li>● Provide an evidence based explanation for how various factors impact growth of organisms</li> <li>● Explain what mutations are</li> <li>● Compare and contrast sexual and asexual reproduction</li> <li>● Explain the role of sperm and egg cells in sexual reproduction</li> <li>● Observe and describe</li> </ul>	<ul style="list-style-type: none"> <li>● The Gene</li> <li>● Various YouTube videos</li> <li>● Origami DNA</li> <li>● Google Classroom</li> </ul>	<ul style="list-style-type: none"> <li>● Various labs</li> <li>● Quizzes</li> <li>● Unit test</li> </ul>

	<ul style="list-style-type: none"><li>● <b>MS-LS3-1.</b> Develop and use a model to explain why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.</li><li>● <b>MS-LS3-2.</b> Develop and use a model to describe how asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</li><li>● <b>MS-LS4-5.</b> Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.</li></ul>	<p>cell division at the microscopic level and its large-scale effects</p> <ul style="list-style-type: none"><li>● Observe and describe developmental patterns in various plants and animals (insects, frogs, humans, seed-bearing plants)</li><li>● Describe various genetic technologies (selective breeding, genetic modification) and their impact</li></ul>		
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