

# 7th Grade Science Pacing Guide 2023-2024

<b>Quarter 1</b> <b>August 28-</b> <b>October 28</b>	<b>Intro/Getting to Know Students/ Scientific Method- 2 weeks</b>
	<b>Atmosphere- 7 weeks</b>
	<p><b>7.E.1.1:</b> Compare the composition, properties, and structure of Earth’s atmosphere to include: mixtures of gasses and differences in temperature and pressure within layers.</p> <p><b>7.E.1.2:</b> Explain how the cycling of water in and out of the atmosphere and atmospheric conditions relate to the weather patterns on Earth.</p> <p><b>7.E.1.3:</b> Explain the relationship between the movement of air masses, high and low pressure systems, and frontal boundaries to storms (including thunderstorms, hurricanes, and tornadoes) and other weather conditions that may result.</p> <p><b>7.E.1.4:</b> Predict weather conditions and patterns based on information obtained from:</p> <ul style="list-style-type: none"> <li>● Weather data collected from direct observations and measurement (wind speed and direction, air temperature, humidity and air pressure)</li> <li>● Weather maps, satellites, and radar</li> <li>● Cloud shapes and types and associated elevation</li> </ul> <p><b>7.E.1.5:</b> Explain the influence of convection, global winds, and the jet stream on weather and climatic conditions.</p> <p><b>7.E.1.6:</b> Conclude that the good health of humans requires: monitoring the atmosphere, maintaining air quality, and stewardship.</p>
<b>Quarter 2</b> <b>October 31-</b> <b>January 19</b>	<b>Living Organisms and Cells- 9 weeks</b>
	<p><b>7.L.1.1:</b> Compare the structures of life functions of single-celled organisms that carry out all the basic functions of life including</p> <ul style="list-style-type: none"> <li>● Euglena</li> <li>● Amoeba</li> <li>● Paramecium</li> <li>● Volvox</li> </ul> <p><b>7.L.1.2:</b> Compare the structures and functions of plant and animal cells, including major organelles (cell membrane, cell wall, nucleus, chloroplasts, mitochondria, and vacuoles).</p> <p><b>7.L.1.3:</b> Summarize the hierarchical organization of multicellular organisms from cells to tissues to organs to systems to organisms</p>
<b>Quarter 3</b> <b>January 24-</b> <b>March 28</b>	<b>Living Organisms and Cells- 5 weeks</b>
	<p><b>7.L.1.4:</b> Summarize the general functions of the major systems of the human body (digestion, respiration, reproduction, circulation, and excretion) and ways that these systems interact with each other to sustain life.</p>
	<b>Genetics- 4 weeks</b>
	<p><b>7.L.2.1:</b> Explain why offspring that result from sexual reproduction (fertilization and meiosis) have greater variation than offspring that result from asexual reproduction (budding and mitosis)</p> <p><b>7.L.2.2:</b> Infer patterns of heredity using information from Punnett squares and pedigree analysis.</p> <p><b>7.L.2.3:</b> Explain the impact of the environment and lifestyle choices on biological inheritance (to common genetic diseases) and survival.</p>

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<b>Quarter 4</b> April 9- June 11	<b>Forces and Motion- 3 weeks</b>
	<p><b>7.P.1.1:</b> Explain how the motion of an object can be by position, direction of motion, and speed with respect to some other objects.</p> <p><b>7.P.1.2:</b> Explain the effects of balanced and unbalanced forces acting on an object (including friction, gravity, and magnets).</p> <p><b>7.P.1.3:</b> Illustrate the motion of an object using a graph to show a change in position over a period of time.</p> <p><b>7.P.1.4:</b> Interpret distance versus time graph for a constant speed and variable nation.</p>
	<b>Energy- 3 weeks</b>
	<p><b>7.P.2.1:</b> Explain how kinetic and potential energy contribute to the mechanical energy of an object.</p> <p><b>7.P.2.2:</b> Explain how energy can be transformed from one form to another (specifically potential energy in kinetic energy) using a model or diagram of a moving object (roller coaster, pendulum, or cars on ramps as examples).</p> <p><b>7.P.2.3:</b> Recognize that energy can be transferred from one system to another when two objects push or pull on each other over a distance (work) and electrical circuits require a complete loop through which an electrical current and past.</p> <p><b>7.P.2.4:</b> Explain how simple machines such as in Palm planes, pulleys, levers, and wheel and axles are used to create mechanical advantage and increased efficiency.</p>