8th Grade Science Pacing Guide
2023-2024

<table>
<tr><td rowspan="2">Quarter 1
August 28-
October 28</td><td>Check-in 1: Physical Science</td></tr>
<tr><td>Matter: Properties and Change</td></tr>
<tr><td></td><td>8.P.1.1 Classify matter as elements, compounds, or mixtures based on how the atoms are packed together in arrangements.
8.P.1.2 Explain how the physical properties of elements and their reactivity have been used to produce the current model of the Periodic Table of Elements.
8.P.1.3 Compare physical changes such as size, shape, and state to chemical changes that are the result of a chemical reaction to include changes in temperature, color, formation of a gas or precipitate.
8.P.1.4 Explain how the idea of atoms and balanced equations support the law of conservation of mass.</td></tr>
<tr><td rowspan="4">Quarter 2
October 31-
January 19

Earth History will be split between Q2 and Q3 but tested on Check-In 2</td><td>Check-in 2: Earth Science</td></tr>
<tr><td>Energy Resources</td></tr>
<tr><td>8.P.2.1 Explain the environmental consequences of the various methods of obtaining, transforming and distributing energy.
8.P.2.2 Explain the implications of the depletion of renewable and nonrenewable energy resources and the</td></tr>
<tr><td>Hydrosphere</td></tr>
<tr><td></td><td>8.E.1.1 Explain the structure of the hydrosphere including
· Water distribution on earth
· Local river basins and water availability
8.E.1.2 Summarize evidence that Earth's oceans are a reservoir of nutrients, minerals, dissolved gasses, and life forms:
· Estuaries
· Marine Ecosystems
· Upwelling
· Behavior of gasses in the marine environment
· Value and sustainability of marine resources
· Deep ocean technology and understandings gained
8.E.1.3 Predict the safety and portability of water supplies in North Carolina based on physical and biological factors, including
· Temperature
· Dissolved Oxygen
· pH
· Nitrates and phosphates
· Turbidity
· Bio-indicators
8.E.1.4 Conclude that the good health of humans requires:
· Monitoring of the hydrosphere
· Water quality standards
· Methods of water treatment
· Maintaining safe water quality
· Stewardship</td></tr>
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	Earth History
Quarter 3 January 24- March 28	**8.E.2.1** Infer the age of Earth and relative age of rocks and fossils from index fossils and ordering of rock layers (relative dating and radioactive dating). **8.E.2.2** Explain the use of fossils, ice cores, composition of sedimentary rocks, faults, and igneous rock formations found in rock layers as evidence of the history of the Earth and its changing life forms.
	Check-in 3: Life Science
	Genetic Variability
	8.L.4.1 Summarize the use of evidence drawn from geology, fossils, and comparative anatomy to form the basis of biological classifications systems and the theory of evolution. **8.L.4.2** Explain the relationship between genetic variation and an organism's ability to adapt to its environment.
	Ecosystems
	8.L.3.1 Explain how factors such as food, water, shelter, and space affect populations in an ecosystem. **8.L.3.2** Summarize the relationship among producers, consumers, and decomposers including the positive and negative consequences of such interactions including: · Coexistence and cooperation · Competition (predator/prey) · Parasitism · Mutualism **8.L.3.3** Explain how the flow of energy within food webs is interconnected with the cycling of matter (including water, nitrogen, carbon dioxide, and oxygen).
Quarter 4 April 9- June 11	**Microbiology**
	8.L.1.1 Summarize the basic characteristics of viruses, bacteria, fungi, and parasites relating to the spread, treatment, and prevention of disease **8.L.1.2** Explain the difference between epidemic and pandemic as it relates to the spread, treatment, and spread of disease.
	Molecular Biology
	8.L.5.1 Summarize how food provides the energy and the molecules required for building materials, growth and survival of all organisms (to include plants) **8.L.5.2** Explain the relationship among a healthy diet, exercise, and the general health of the body (emphasis on the relationship between respiration and digestion)
	Biotechnology
	8.L.2.1 Summarize aspects of biotechnology including: · Specific genetic information available · Careers · Economic benefits to North Carolina · Ethical Issues · Implications for agriculture