

# WV CSO Curriculum Planning Tool

## Science 10

Standard	Obj.#	Objective	Projected Date	Date Taught	Date Assessed	Date Re-Taught	Date Re-Assessed
Standard 1: History and the Nature of Science	SC.10.1.1	formulate scientific explanations based on historical observations & experimental evidence, accounting for variability in experimental results.					
	SC.10.1.2	recognize that science has practical and theoretical limitations.					
	SC.10.1.3	recognize that science is based on a set of observations in a testable framework that demonstrate basic laws that are consistent.					
	SC.10.1.4	conclude that science is a blend of creativity, logic and mathematics.					
	SC.10.1.5	trace the development of key historical concepts and principles describing their impact on modern thought and life by identifying the scientist's contributions.					
Standard 2: Science as Inquiry	SC.10.2.1	model & exhibit the skills, attitudes and/or values of scientific inquiry					
	SC.10.2.2	demonstrate ethical practices for science					
	SC.10.2.3	apply scientific approaches to seek solutions for personal and societal issues.					
	SC.10.2.4	properly and safely manipulate equipment, materials, chemicals, organisms and models.					
	SC.10.2.5	conduct explorations in a variety of environments					
	SC.10.2.6	use appropriate technology solutions					
	SC.10.2.7	demonstrate science processes within a problem solving setting					
	SC.10.2.8	design, conduct, evaluate and revise experiments					
Standard 3: Unifying Themes	SC.10.3.1	analyze systems to understand the natural and designed world; use systems analysis to make predictions about behaviors in systems; recognize order in units of matter, objects or events.					
	SC.10.3.2	apply evidence from models to make predictions about interactions and changes in systems.					
	SC.10.3.3	measure changes in systems using graphs and equations relating these to rate, scale, patterns, trends and cycles.					
	SC.10.3.4	understand that different characteristics, properties or relationships within a system might change as its dimensions are increased or decreased (e.g., scale up, scale down).					
Standard 4: Science Subject Matter/Concepts	SC.10.4.1	demonstrate an understanding of the interconnections of biological, earth and space and physical science concepts.					
	SC.10.4.2	identify and explain the structure and function of cell organelles					
	SC.10.4.3	compare the variations in cells, tissues and organs of different organisms (e.g., endocrine, nervous, digestion and immune systems).					
	SC.10.4.4	identify mechanisms for the movement of materials into and out of cells (e.g., active and passive transport, endo- and exocytosis).					
	SC.10.4.5	explore the discovery of DNA and its structure by constructing a model to demonstrate the nucleotide bonding and the double helix structure.					
	SC.10.4.6	relate the role of DNA analysis to genetic disorders, forensic science, molecular genetics, and biotechnology					
	SC.10.4.7	review principles of genetics					
	SC.10.4.8	compare the embryonic development of invertebrate and vertebrate animals					
	SC.10.4.9	construct and manipulate models which show variations in living things.					
	SC.10.4.10	recognize that fossil records provide a scientific explanation for variation in the species and common ancestors.					
	SC.10.4.11	relate the role of natural selection to the development, diversity and or extinction of a species.					
	SC.10.4.12	construct diagrams showing energy flow and cycles of matter between chemical and biological systems including photosynthesis, stored chemical energy, decomposition, carbon and nitrogen cycles.					
	SC.10.4.13	explain how the nervous, endocrine and immune systems work together in the human body.					
	SC.10.4.14	review the needs of growing plants and the environments supplying those needs.					
	SC.10.4.15	review factors that affect succession, populations and					

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		communities (e.g., use maps, graphs, charts, tables).					
	<b>SC.10.4.16</b>	trace matter and energy flow through the respiration process					
	<b>SC.10.4.17</b>	investigate the properties of solutions including density, conductivity, solubility, concentration, pH and colligative properties.					
	<b>SC.10.4.18</b>	differentiate among physical, chemical and nuclear changes and reactions.					
	<b>SC.10.4.19</b>	investigate the relationships among temperature, pressure and volume in gases and interpret graphs that depict these relationships					
	<b>SC.10.4.20</b>	investigate and measure changes in thermal energy in physical and chemical changes.					
	<b>SC.10.4.21</b>	compare and contrast the characteristics and uses of waves in various parts of the electromagnetic spectrum; calculate the frequency of a particular wavelength.					
	<b>SC.10.4.22</b>	summarize the relationship between frequency and speed					
	<b>SC.10.4.23</b>	qualitatively explain the relationship between electricity and magnetism & describe how electrical components of a circuit function					
	<b>SC.10.4.24</b>	qualitatively and quantitatively describe the conservation of energy					
	<b>SC.10.4.25</b>	apply Newton's Laws of Motion to depict the relationship among rate, force, momentum, work, and time using kinematics graph and mathematical models.					
	<b>SC.10.4.26</b>	describe and quantify how machines can provide mechanical advantages.					
	<b>SC.10.4.27</b>	determine the effect of different forces on vibrating systems					
	<b>SC.10.4.28</b>	demonstrate qualitative and quantitative understanding of pressure in various systems					
	<b>SC.10.4.29</b>	relate the characteristics and behavior of mechanical waves to earth processes					
	<b>SC.10.4.30</b>	relate the cause of tides to their height and frequency.					
	<b>SC.10.4.31</b>	investigate effects of geological events on weather and climate					
	<b>SC.10.4.32</b>	observe and describe the effects of water on the earth's surface					
	<b>SC.10.4.33</b>	relate Earth's electromagnetic field to the dynamics of the magnetosphere.					
	<b>SC.10.4.34</b>	discuss theories for the causes of plate tectonics.					
	<b>SC.10.4.35</b>	discuss physical & chemical relationships between minerals in rock cycle					
	<b>SC.10.4.36</b>	investigate fossils as evidence for evolution and indicators of paleo-environments.					
	<b>SC.10.4.37</b>	compare and contrast morphological features of fossils to present-day organisms.					
	<b>SC.10.4.38</b>	use fossil evidence to estimate the relative and absolute ages of rock layers.					
	<b>SC.10.4.39</b>	compare and contrast the characteristics of Earth and the other planets relative to their distance from the Sun.					
	<b>SC.10.4.40</b>	interpret apparent motion of constellations and their relationship to the rotation of the earth.					
<b>Standard 5: Scientific Design and Application</b>	<b>SC.10.5.1</b>	investigate and analyze the interdependence of science and technology.					
	<b>SC.10.5.2</b>	research and design solutions to a personal or a societal problem created by technology.					
	<b>SC.10.5.3</b>	compare and test modifications to an engineering design.					
	<b>SC.10.5.4</b>	utilize technology to communicate designs, results & conclusions.					
<b>Standard 6: Science in Personal and Social Perspectives</b>	<b>SC.10.6.1</b>	investigate the effects of natural phenomena on the habitat and habitat change.					
	<b>SC.10.6.2</b>	research current environmental issues					
	<b>SC.10.6.3</b>	describe the impact of cultural, technological, and economic influences on the evolving nature of scientific thought and knowledge.					
	<b>SC.10.6.4</b>	explore occupational opportunities in science and technology including the academic preparation necessary.					
	<b>SC.10.6.5</b>	engage in decision making activities and actions to resolve science-technology-society issues.					