

CURRICULUM MAP

Astronomy

Week 1-3	Weeks 4-6	Weeks 7-9	Weeks 10-12	Weeks 13-15	Weeks 16-18
<p>Physical Science The Nature of Matter</p> <p>9-1. Recognize that all atoms of the same element contain the same number of protons, and elements with the same number of protons may or may not have the same mass. Those with different masses (different numbers of neutrons) are called isotopes.</p> <p>9-2. Illustrate that atoms with the same number of positively charged protons and negatively charged electrons are electrically neutral.</p> <p>9-4. Show that when elements are listed in order according to the number of protons (called the atomic number), the repeating patterns of physical and chemical properties identify families of elements. Recognize that the periodic table was formed as a result of the repeating pattern of electron configurations.</p> <p>9-5. Describe how ions are formed when an atom or a group of atoms acquire an unbalanced charge by gaining or losing one or more electrons.</p> <p>Prerequisites Active Physics Biology Credit 0.5 Single-period semester course</p>	<p>Earth Science The Universe</p> <p>12-1. Explain how scientists obtain information about the universe by using technology to detect electromagnetic radiation that is emitted, reflected or absorbed by stars and other objects.</p> <p>12-2. Explain how the large-scale motion of objects in the universe is governed by gravitational forces and detected by observing electromagnetic radiation.</p> <p>12-3. Explain how information about the universe is inferred by understanding that stars and other objects in space emit, reflect or absorb electromagnetic radiation, which we then detect.</p> <p>12-4. Explain how astronomers infer that the whole universe is expanding by understanding how light seen from distant galaxies has longer apparent wavelengths than comparable light sources close to earth.</p>	<p>Earth Science The Universe</p> <p>9-3. Explain that gravitational forces govern the characteristics and movement patterns of the planets, comets and asteroids in the solar system.</p> <p>9-1. Describe that stars produce energy from nuclear reactions and that processes in stars have led to the formation of all elements beyond hydrogen and helium.</p>	<p>Earth Science The Universe</p> <p>9-2. Describe the current scientific evidence that supports the theory of the explosive expansion of the universe, the Big Bang, over 10 billion years ago.</p> <p>Earth Systems</p> <p>11-2. Analyze how the regular and predictable motions of Earth, sun and moon explain phenomena on Earth (e.g., seasons, tides, eclipses and phases of the moon).</p> <p>10-4. Describe how organisms on Earth contributed to the dramatic change in oxygen content of Earth's early atmosphere.</p> <p>11-12. Explain ways in which humans have had a major effect on the species (e.g., the influence of humans on other organisms occurs through land use, which decreases space available to other species and pollution, which changes the chemical composition of air, soil and water).</p> <p>11-13. Explain how human behavior affects the basic processes of natural ecosystems and the quality of the atmosphere, hydrosphere and lithosphere.</p> <p>11-14. Conclude that Earth has finite resources and explain that humans deplete some resources faster than they can be renewed.</p>	<p>Earth Science The Universe</p> <p>11-1. Describe how the early Earth was different from the planet we live on today, and explain the formation of the sun, Earth and the rest of the solar system from a nebular cloud of dust and gas approximately 4.5 billion years ago.</p>	<p>Earth Science Historical Perspectives / Scientific Revolutions</p> <p>10-7. Describe advances and issues in Earth and space science that have important long-lasting effects on science and society (e.g., geologic time scales, global warming, depletion of resources and exponential population growth).</p> <p>11-15. Use historical examples to explain how new ideas are limited by the context in which they are conceived; are often rejected by the social (scientific) establishment; sometimes spring from unexpected findings; and usually grow slowly through contributions from many different investigators (e.g., global warming, Heliocentric Theory, Plate Tectonics Theory and Theory of Continental Drift). Note: This indicator is a combination of 9-8 and 11-15.</p> <p>11-16. Describe advances in Earth and space science that have important long-lasting effects on science and society (e.g., global warming, Heliocentric Theory and Plate Tectonics Theory).</p>