

<b>Active Chemistry Correlation to the Instructional Materials Specifications for Integrated Science I to the State of Florida</b>			
" <b>Red text</b> " Coverage = Secondary concept of the activity or problem. Students gain a basic understanding or introduction of the concept.			
" <b>Black text</b> " In-depth coverage = primary concept that is the focus of the activity or problem. Student's gain thorough understanding of the concept.			
<b>Course Description</b>	<b>The Periodic Table</b>	<b>Cool Chemistry Show</b>	<b>Movie Special Effects</b>
<b>INTEGRATED SCIENCE I</b>			
<b>After successfully completing this course, the student will:</b>			
<b>1. Apply knowledge of the nature of science and scientific habits of mind to solve problems, and employ safe and effective use of laboratory technology.</b>			
SC.H.1.4.1 know that investigations are conducted to explore new phenomena, to check on previous results, to test how well a theory predicts, and to compare different theories.	74,77,78, 84-87, 91-96,98, 99-106,123, 124	197-201	25,43,53,63, 64
SC.H.1.4.2 know that from time to time, major shifts occur in the scientific view of how the world works, but that more often, the changes that take place in the body of scientific knowledge are small modifications of prior knowledge.	74,84-87,91-96,98,99-106		5, 53
SC.H.1.4.3 understand that no matter how well one theory fits observations, a new theory might fit them as well or better, or might fit a wider range of observations, because in science, the testing, revising, and occasional discarding of theories, new and old, never ends and leads to an increasingly better understanding of how things work in the world, but not to absolute truth.	84-87,91-96, 98,99-106, 124-126	176-178	5, 53
<b>2. Analyze scientific theories of formation of the universe and solar system with special emphasis on celestial motions and related phenomena, such as eclipses, seasons, or phases, distance, and planetary motion.</b>			
SC.E.1.4.1 understand the relationships between events on Earth and the movements of the Earth, its Moon, the other planets, and the Sun.			
SC.E.1.4.2 know how the characteristics of other planets and satellites are similar to and different from those of the Earth.			
SC.E.1.4.3 know the various reasons that Earth is the only planet in our Solar System that appears to be capable of supporting life as we know it.			
<b>3. Demonstrate knowledge of life cycles of stars and composition of interstellar matter.</b>			
SC.E.2.4.1 know that the stages in the			

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development of three categories of stars are based on mass: stars that have the approximate mass of our Sun, stars that are two- to three-stellar masses and develop into neutron stars, and stars that are five- to six-stellar masses and develop into black holes.			
SC.E.2.4.2 identify the arrangement of bodies found within and outside our galaxy.			
SC.E.2.4.3 know astronomical distance and time.			
SC.E.2.4.4 understand stellar equilibrium.			
SC.E.2.4.5 know various scientific theories on how the universe was formed.			
SC.E.2.4.6 know the various ways in which scientists collect and generate data about our universe (e.g., X-ray telescopes, computer simulations of gravitational systems, nuclear reactions, space probes, and supercollider simulations).			
<b>4. Explain the rock cycle, describing igneous, sedimentary, and metamorphic rocks and their formation.</b>			
SC.D.1.4.1 know how climatic patterns on Earth result from an interplay of many factors (Earth's topography, its rotation on its axis, solar radiation, the transfer of heat energy where the atmosphere interfaces with lands and oceans, and wind and ocean currents).			
<b>5. Demonstrate understanding of the theory of plate tectonics, including possible mechanisms and the factors that determine the development of various land formations, such as volcanism, earthquakes, or mountain building.</b>			
SC.D.1.4.2 know that the solid crust of Earth consists of slow-moving, separate plates that float on a denser, molten layer of Earth and that these plates interact with each other, changing the Earth's surface in many ways (e.g., forming mountain ranges and rift valleys, causing earthquake and volcanic activity, and forming undersea mountains that can become ocean islands).			
<b>6. Demonstrate understanding of how renewable and nonrenewable natural resources interact with technology and society.</b>			
SC.G.2.4.1 know that layers of energy-rich organic materials have been gradually turned into great coal beds and oil pools (fossil fuels) by the pressure of the overlying earth and that humans burn fossil fuels to release the stored energy as heat and carbon dioxide.			
SC.G.2.4.2 know that changes in a component of an ecosystem will have			

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unpredictable effects on the entire system but that the components of the system tend to react in a way that will restore the ecosystem to its original condition.			
<b>7. Demonstrate understanding of the particulate nature of matter.</b>			
SC.A.2.4.1 know that the number and configuration of electrons will equal the number of protons in an electrically neutral atom and when an atom gains or loses electrons, the charge is unbalanced.	114,115,125	163-168	58
SC.A.2.4.2 know the difference between an element, a molecule, and a compound.	75,76,84-86,126-129	157-161,163-168	7-10
SC.A.2.4.3 know that a number of elements have heavier, unstable nuclei that decay, spontaneously giving off smaller particles and waves that result in a small loss of mass and release a large amount of energy.	140-142		
SC.A.2.4.4 know that nuclear energy is released when small, light atoms are fused into heavier ones.	141		
<b>8. Analyze the classification and interaction of matter</b>			
SC.A.1.4.1 know that the electron configuration in atoms determines how a substance reacts and how much energy is involved in its reactions.	110-115,126-129	163-168,180-185	
SC.A.1.4.2 know that the vast diversity of the properties of materials is primarily due to variations in the forces that hold molecules together.	126-129	163-168	12-29
SC.A.1.4.3 know that a change from one phase of matter to another involves a gain or loss of energy.		171-178	12-19
<b>9. Apply the information given in the periodic table and predict behavior of representative elements qualitatively and quantitatively, describing chemical interactions</b>			
SC.A.2.4.5 know that elements are arranged into groups and families based on similarities in electron structure and that their physical and chemical properties can be predicted.	77,110-115,118-122	163-168	58
SC.C.2.4.5 know that most observable forces can be traced to electric forces acting between atoms or molecules.	110-116,118-122	166 -168	58
<b>10. Demonstrate understanding of how energy may be changed in form with varying efficiency.</b>			
SC.B.1.4.1 understand how knowledge of energy is fundamental to all the scientific disciplines (e.g., the energy required for biological processes in living organisms and the energy required for the building, erosion, and rebuilding of the Earth).	99-106,110-115,125	180-185,187-1943	58,59

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SC.B.1.4.2 understand that there is conservation of mass and energy when matter is transformed.	85-87, <b>98</b>	180-185	<b>58,59</b>
<b>11. Demonstrate understanding of various forms of energy, including heat, light, sound, electricity, magnetism, and nuclear energy.</b>			
SC.C.2.4.2 know that electrical forces exist between any two charged objects.	91-96	<b>163-168</b>	<b>58,59</b>
SC.C.2.4.3 describe how magnetic force and electrical force are two aspects of a single force.	91-96, <b>99-106</b>		
SC.C.2.4.4 know that the forces that hold the nucleus of an atom together are much stronger than electromagnetic force and that this is the reason for the great amount of energy released from the nuclear reactions in the sun and other stars.	135-142		
<b>12. Analyze how the physical, earth-space, and biological sciences interact with technology and society.</b>			
SC.H.3.4.2 know that technological problems often create a demand for new scientists to extend their research in a way that advances science.	84-87,91-96	<b>152,155, 206-208</b>	31,64
SC.H.3.4.3 know that scientists can bring information, insights, and analytical skills to matters of public concern and help people understand the possible causes and effects of events.	138-142	197-201	<b>27,36,47,48, 50, 54,59,63,64, 66</b>
SC.H.3.4.4 know that funds for science research come from federal government agencies, industry, and private foundations and that this funding often influences the areas of discovery.	142		<b>31</b>
<b>13. Demonstrate understanding of human growth and development.</b>			
SC.F.1.4.2 know that body structures are uniquely designed and adapted for their function.			
SC.F.1.4.4 understand that biological systems obey the same laws of conservation as physical systems.			