

6<sup>th</sup> Grade Science

SC.O.6.1.01	realize that scientists formulate and test their explanations of nature using observation and experiments.	
	<ul style="list-style-type: none"> <li>Realize that scientists formulate their explanations of nature using observation</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Realize that scientists formulate their explanations of nature using experiments</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Realize that scientists test their explanations of nature using observation</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Realize that scientists test their explanations of nature using experiments</li> </ul>	Knowledge
SC.O.6.1.02	recognize scientific knowledge is subject to modification as new scientific information challenges current explanations.	Knowledge
SC.O.6.1.03	examine the careers and contributions of men and women of diverse cultures to the development of science.	
	<ul style="list-style-type: none"> <li>Examine the careers of men of diverse cultures to the development of science</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Examine the contributions of men of diverse cultures to the development of science</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Examine the careers of women of diverse cultures to the development of science</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Examine the contributions of women of diverse cultures to the development of science</li> </ul>	Knowledge
SC.O.6.1.04	compare and contrast the historical significance of scientific discoveries.	
	<ul style="list-style-type: none"> <li>compare the historical significance of scientific discoveries</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>contrast the historical significance of scientific discoveries</li> </ul>	Reasoning
SC.O.6.1.05	cooperate and collaborate to ask questions, design and conduct investigations to find answers and solve problems.	
	<ul style="list-style-type: none"> <li>Cooperate to ask questions to find answers</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Cooperate to ask questions to find solve problems</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Collaborate to ask questions to find answers</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Collaborate to ask questions to find solve problems</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Cooperate to design investigations to find answers</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Cooperate to design investigations to find solve problems</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Collaborate to design investigations to find answers</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Collaborate to design investigations to find solve problems</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Cooperate to conduct investigations to find answers</li> </ul>	Performance

	<ul style="list-style-type: none"> <li>Cooperate to conduct investigations to find solve problems</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Collaborate to conduct investigations to find answers</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Collaborate to conduct investigations to find solve problems</li> </ul>	Performance
SC.O.6.1.06	formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.	
	<ul style="list-style-type: none"> <li>formulate conclusions through close observations in data collection</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>formulate conclusions through logical reasoning in data collection</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>formulate conclusions through objectivity in data collection</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>formulate conclusions through perseverance in data collection</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>formulate conclusions through integrity in data collection</li> </ul>	Reasoning
SC.O.6.1.07	apply skepticism, careful methods, logical reasoning and creativity in investigating the observable universe.	
	<ul style="list-style-type: none"> <li>Apply skepticism investigating the observable universe</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Apply careful methods investigating the observable universe</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Apply logical reasoning investigating the observable universe</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Apply creativity investigating the observable universe</li> </ul>	Performance
SC.O.6.1.08	use a variety of technologies and scientific instruments to conduct explorations, investigations and experiments of the natural world.	
	<ul style="list-style-type: none"> <li>Use a variety of technologies to conduct explorations of the natural world</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use a variety of technologies to conduct investigations of the natural world</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use a variety of technologies to conduct experiments of the natural world</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use a variety of scientific instruments to conduct explorations of the natural world</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use a variety of scientific instruments to conduct investigations of the natural world</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use a variety of scientific instruments to conduct experiments of the natural world</li> </ul>	Performance
SC.O.6.1.09	demonstrate safe techniques for handling, manipulating and caring for science materials, equipment, natural specimens and living organisms.	
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for handling for science materials</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for handling for equipment</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for handling for natural specimens</li> </ul>	Performance

	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for handling for living organisms</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for manipulating for science materials</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for manipulating for equipment</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for manipulating for natural specimens</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for manipulating for living organisms</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for caring for science materials</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for caring for equipment</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for caring for natural specimens</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Demonstrate safe techniques for caring for living organisms</li> </ul>	Performance
SC.O.6.1.10	utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses, quantifying, or identifying dependent and independent variables).	
	<ul style="list-style-type: none"> <li>utilize experimentation to demonstrate scientific processes</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>utilize experimentation to demonstrate scientific thinking skills</li> </ul>	Performance
SC.O.6.1.11	construct and use charts, graphs and tables to organize, display, interpret, analyze and explain data.	
	<ul style="list-style-type: none"> <li>Construct charts to organize</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct graphs to organize</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct tables to organize</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct charts to display</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct graphs to display</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct tables to display</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct charts to interpret</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct graphs to interpret</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct tables to interpret</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct charts to analyze</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct graphs to analyze</li> </ul>	Product

	<ul style="list-style-type: none"> <li>Construct tables to analyze</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct charts to explain data</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct graphs to explain data</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Construct tables to explain data</li> </ul>	Product
	<ul style="list-style-type: none"> <li>Use charts to organize</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use graphs to organize</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use tables to organize</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use charts to display</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use graphs to display</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use tables to display</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use charts to interpret</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use graphs to interpret</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use tables to interpret</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use charts to analyze</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use graphs to analyze</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use tables to analyze</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use charts to explain data</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use graphs to explain data</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Use tables to explain data</li> </ul>	Performance
SC.O.6.1.12	use inferential reasoning to make logical conclusions from collected data.	Reasoning
SC.O.6.2.01	demonstrate the interrelationships among physics, chemistry, biology, earth and environmental science, and astronomy.	
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among physics and chemistry</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among physics and biology</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among physics and earth science</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among physics and environmental science</li> </ul>	Reasoning

	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among physics and astronomy</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among chemistry and biology</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among chemistry and earth science</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among chemistry and environmental science</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among chemistry and astronomy</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among biology and earth science</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among biology and environmental science</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among biology and astronomy</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among earth science and environmental science</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among earth science and astronomy</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>demonstrate the interrelationships among environmental science and astronomy</li> </ul>	Reasoning
SC.O.6.2.02	use pictures to show cyclical processes in nature (e.g., nitrogen cycle, carbon cycle, or water cycle).	Performance
SC.O.6.2.03	classify living organisms according to their structure and functions.	
	<ul style="list-style-type: none"> <li>classify living organisms according to their structure</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>classify living organisms according to their functions</li> </ul>	Reasoning
SC.O.6.2.04	compare the similarities of internal features of organisms, which can be used to infer relatedness.	Reasoning
SC.O.6.2.05	examine how abiotic and biotic factors affect the interdependence among organisms.	
	<ul style="list-style-type: none"> <li>examine how abiotic factors affect the interdependence among organisms.</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>examine how biotic factors affect the interdependence among organisms.</li> </ul>	Knowledge
SC.O.6.2.06	construct models of plant and animal cells and compare the basic parts (e.g., cytoplasm, cell wall, cell membrane, nucleus, or chloroplasts).	
	<ul style="list-style-type: none"> <li>construct models of plant cells</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>construct models of animal cells</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>compare the basic parts of animal cells</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>compare the basic parts of plant cells</li> </ul>	Reasoning
SC.O.6.2.07	compare growth cycles in different plants (e.g., mosses, ferns, perennials, biennials, woody plants, or herbaceous plants).	Reasoning

SC.O.6.2.08	predict changes in populations of organisms due to limiting environmental factors (e.g., food supply, predators, disease, or habitat).	Reasoning
SC.O.6.2.09	analyze the ecological consequences of human interactions with the environment (e.g., renewable and non-renewable resources).	Reasoning
SC.O.6.2.10	classify and investigate properties and processes (changes) as either physical or chemical.	
	<ul style="list-style-type: none"> <li>Classify properties as physical</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Classify properties as chemical</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Classify processes as physical</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Classify processes as chemical</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Investigate properties as physical</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Investigate properties as chemical</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Investigate processes as physical</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Investigate processes as chemical</li> </ul>	Reasoning
SC.O.6.2.11	investigate the formation and separation of simple mixtures of matter concluding that matter is composed of tiny particles and that the particles are the same for the same type of matter.	
	<ul style="list-style-type: none"> <li>investigate the formation of simple mixtures of matter concluding that matter is composed of tiny particles</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>investigate the separation of simple mixtures of matter concluding that matter is composed of tiny particles</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>investigate the formation of simple mixtures of matter concluding that the particles are the same for the same type of matter.</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>investigate the separation of simple mixtures of matter concluding that the particles are the same for the same type of matter.</li> </ul>	Reasoning
SC.O.6.2.12	use indicators to classify substances as acidic, basic or neutral.	
	<ul style="list-style-type: none"> <li>use indicators to classify substances as acidic</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>use indicators to classify substances as basic</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>use indicators to classify substances as neutral</li> </ul>	Performance
SC.O.6.2.13	using the periodic table, identify the symbols of elements as solids, liquids, and gases; metals or nonmetals.	
	<ul style="list-style-type: none"> <li>using the periodic table, identify the symbols of elements as solids</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>using the periodic table, identify the symbols of elements as liquids</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>using the periodic table, identify the symbols of elements as gases</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>using the periodic table, identify the symbols of elements as metals</li> </ul>	Knowledge

	<ul style="list-style-type: none"> <li>using the periodic table, identify the symbols of elements as nonmetals</li> </ul>	Knowledge
SC.O.6.2.14	describe the composition and properties of matter (e.g., particles, malleability, melting point, density, inertia, or specific heat).	
	<ul style="list-style-type: none"> <li>Describe the composition of matter</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Describe the properties of matter</li> </ul>	Reasoning
SC.O.6.2.15	investigate the properties of the electromagnetic spectrum (e.g., wavelengths, frequencies, visible light); relate wavelengths and/or frequencies to position on the electromagnetic spectrum (e.g., colors, x-ray).	Reasoning
SC.O.6.2.16	recognize that an object's color is based upon the absorption and reflection of light waves.	
	<ul style="list-style-type: none"> <li>recognize that an object's color is based upon the absorption of light waves.</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>recognize that an object's color is based upon the reflection of light waves.</li> </ul>	Knowledge
SC.O.6.2.17	describe light and sound in terms of longitudinal or transverse waves.	
	<ul style="list-style-type: none"> <li>describe light in terms of longitudinal waves</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>describe sound in terms of longitudinal waves</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>describe light in terms of transverse waves</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>describe sound in terms of transverse waves</li> </ul>	Knowledge
SC.O.6.2.18	describe the flow of heat between objects (e.g., hot air rises, or absorption and release of heat by metals).	Knowledge
SC.O.6.2.19	diagram simple parallel and series circuits (e.g., bulbs, battery, wires, or switch).	
	<ul style="list-style-type: none"> <li>Diagram simple parallel circuits</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Diagram simple series circuits</li> </ul>	Performance
SC.O.6.2.20	correlate the relationship of mass to gravitational force (e.g., larger the mass the larger the gravitational force, or the closer the objects the stronger the force).	Reasoning
SC.O.6.2.21	examine simple machines and the forces involved.	
	<ul style="list-style-type: none"> <li>Examine simple machines</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Examine the forces involved in simple machines</li> </ul>	Performance
SC.O.6.2.22	apply the effects of balanced and unbalanced forces on motion of objects.	
	<ul style="list-style-type: none"> <li>Apply the effects of balanced forces on motion of objects</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Apply the effects of unbalanced forces on motion of objects</li> </ul>	Performance
SC.O.6.2.23	explain motion in terms of frames of reference and analyze graphs depicting motion and predicted future motion.	

	<ul style="list-style-type: none"> <li>explain motion in terms of frames of reference</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>analyze graphs depicting motion</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Predict future motion</li> </ul>	Reasoning
SC.O.6.2.24	monitor major atmospheric events using a variety of resources including technology.	Performance
SC.O.6.2.25	compare and contrast continental drift hypothesis to the plate tectonic theory.	
	<ul style="list-style-type: none"> <li>compare continental drift hypothesis to the plate tectonic theory.</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>contrast continental drift hypothesis to the plate tectonic theory.</li> </ul>	Reasoning
SC.O.6.2.26	associate plant and animal life forms with specific geologic time periods.	
	<ul style="list-style-type: none"> <li>associate plant life forms with specific geologic time periods.</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>associate animal life forms with specific geologic time periods.</li> </ul>	Reasoning
SC.O.6.2.27	recognize the phases of the moon.	Reasoning
SC.O.6.2.28	investigate models of earth-moon-sun relationships (e.g., gravity, time, or tides).	Performance
SC.O.6.2.29	compare the earth's tilt and revolution to the seasonal changes.	
	<ul style="list-style-type: none"> <li>compare the earth's tilt to the seasonal changes</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>compare the earth's revolution to the seasonal changes</li> </ul>	Reasoning
SC.O.6.3.01	explore the relationship between the parts of a system to the whole system.	Performance
SC.O.6.3.02	construct a variety of useful models of an object, event, or process.	
	<ul style="list-style-type: none"> <li>construct a variety of useful models of an object</li> </ul>	Product
	<ul style="list-style-type: none"> <li>construct a variety of useful models of an event</li> </ul>	Product
	<ul style="list-style-type: none"> <li>construct a variety of useful models of an process</li> </ul>	Product
SC.O.6.3.3	compare and contrast changes that occur in an object or a system to its original state.	
	<ul style="list-style-type: none"> <li>compare changes that occur in an object or a system to its original state</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>contrast changes that occur in an object or a system to its original state</li> </ul>	Reasoning
SC.O.6.3.04	compare and contrast the influence that a variation in scale will have on the way an object or system works. (e.g., cooling rates of different-sized containers of water, strength of different-sized constructions from the same material, or flight characteristics of different-sized model airplanes).	

	<ul style="list-style-type: none"> <li>compare the influence that a variation in scale will have on the way an object works</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>compare the influence that a variation in scale will have on the way an system works</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>contrast the influence that a variation in scale will have on the way an object works</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>contrast the influence that a variation in scale will have on the way an system works</li> </ul>	Reasoning
SC.O.6.3.05	research everyday applications and interactions of science and technology.	
	<ul style="list-style-type: none"> <li>research everyday applications of science</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>research everyday applications of technology</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>research everyday interactions of science</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>research everyday interactions of technology</li> </ul>	Performance
SC.O.6.3.06	evaluate and critically analyze mass media reports of scientific developments and events.	
	<ul style="list-style-type: none"> <li>critically analyze mass media reports of scientific developments</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>evaluate mass media reports of scientific developments</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>critically analyze mass media reports of scientific events</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>evaluate mass media reports of scientific events</li> </ul>	Reasoning