

Power Standard: Examine and describe the structures and functions of cell organelles, how the circulatory, respiratory, and reproductive systems work together in the human body and compare the variations in cells, tissues, and organs of the circulatory, respiratory and reproductive systems of different organisms.		
SC.O.8.2.02	examine and describe the structures and functions of cell organelles.	
	<ul style="list-style-type: none"> <li>Examine the structures of cell organelles</li> </ul>	
	<ul style="list-style-type: none"> <li>Examine the functions of cell organelles</li> </ul>	
	<ul style="list-style-type: none"> <li>Describe the structures of cell organelles</li> </ul>	
	<ul style="list-style-type: none"> <li>Describe the functions of cell organelles</li> </ul>	
SC.O.8.2.03	explain how the circulatory, respiratory and reproductive systems work together in the human body.	
	<ul style="list-style-type: none"> <li>Explain how the circulatory and reproductive systems work together in the human body</li> </ul>	
	<ul style="list-style-type: none"> <li>Explain how the circulatory and respiratory systems work together in the human body</li> </ul>	
	<ul style="list-style-type: none"> <li>Explain how the respiratory and reproductive systems work together in the human body</li> </ul>	
SC.O.8.2.04	compare the variations in cells, tissues and organs of the circulatory, respiratory and reproductive systems of different organisms.	
	<ul style="list-style-type: none"> <li>Compare the variations in cells between the circulatory and respiratory systems of different organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare the variations in cells between the circulatory and reproductive systems of different organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare the variations in tissues between the circulatory and respiratory systems of different organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare the variations in tissues between the circulatory and reproductive systems of different organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare the variations in cells between the respiratory and reproductive systems of different organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare the variations in tissues between the respiratory and reproductive systems of different organisms</li> </ul>	
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
	<ul style="list-style-type: none"> <li>Investigate scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Design scientific and technological solutions of personal and societal problems</li> </ul>	
SC.O.8.3.03	communicate experimental designs, results and conclusions using advanced technology tools.	
	<ul style="list-style-type: none"> <li>Communicate experimental designs using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental results using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental conclusions using advanced technology tools</li> </ul>	
SC.O.8.3.04	collaborate to present research on current environmental and technological issues to predict possible solutions.	

	<ul style="list-style-type: none"> <li>Collaborate to present research on current environmental issues to predict possible solutions</li> </ul>	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current technological issues to predict possible solutions</li> </ul>	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in technology</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in technology</li> </ul>	
SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on historical observations</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on experimental evidence</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate explanations to account for variability in experimental results</li> </ul>	
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>Relate societal issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate cultural issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate economic issues to key scientific innovations.</li> </ul>	
SC.O.8.1.06	use appropriate technology solutions within a problem solving setting to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to measure data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to collect data</li> </ul>	
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	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interact with simulations</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to conduct research</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to present conclusions</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to communicate conclusions</li> </ul>	
SC.O.8.1.08	draw conclusions from a variety of data sources to analyze and interpret	

	systems and models (e.g., use graphs and equations to measure and apply variables such as rate and scale, evaluate changes in trends and cycles, predict the influence of external variances such as potential sources of error, or interpret maps).	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze systems</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze models</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret systems</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret models</li> </ul>	
<b>Power Standard:</b>		
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
	<ul style="list-style-type: none"> <li>Investigate scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare scientific and technological solutions of personal and societal problems</li> </ul>	
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	<ul style="list-style-type: none"> <li>Explore occupational opportunities in engineering</li> </ul>	
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	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
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SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
SC.O.8.2.16	conduct and classify chemical reactions by reaction type (e.g., synthesis, decomposition, single replacement or double replacement); energy type (e.g., endothermic and exothermic); and write word equations for the chemical reactions.	
	<ul style="list-style-type: none"> <li>Conduct chemical reactions</li> </ul>	

	<ul style="list-style-type: none"> <li>Classify chemical reactions by reaction type</li> </ul>	
	<ul style="list-style-type: none"> <li>Classify chemical reactions by energy type</li> </ul>	
	<ul style="list-style-type: none"> <li>write word equations for the chemical reactions.</li> </ul>	
SC.O.8.1.02	demonstrate how a testable methodology is employed to seek solutions for personal and societal issues. (e.g., “scientific method”).	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for personal issues</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for societal issues</li> </ul>	
SC.O.8.1.04	conduct and/or design investigations that incorporate the skills and attitudes and/or values of scientific inquiry (e.g., established research protocol, accurate record keeping, replication of results and peer review, objectivity, openness, skepticism, fairness, or creativity and logic).	
	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the skills of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the attitudes of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the values of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>design investigations that incorporate the skills of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>design investigations that incorporate the attitudes of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>design investigations that incorporate the values of scientific inquiry</li> </ul>	
SC.O.8.1.05	implement safe procedures and practices when manipulating equipment, materials, organisms, and models.	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating equipment</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating materials</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating models</li> </ul>	
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>Relate societal issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate cultural issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate economic issues to key scientific innovations.</li> </ul>	
Power Standard: Research and draw conclusions related to the quality and quantity of surface and ground water as it relates to the impacts of oceans on weather and climate on global patterns of atmospheric movement on local weather.		
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
	<ul style="list-style-type: none"> <li>Investigate scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Design scientific and technological solutions of personal and societal problems</li> </ul>	
SC.O.8.3.03	communicate experimental designs, results and conclusions using advanced technology tools.	
	<ul style="list-style-type: none"> <li>Communicate experimental designs using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental results using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental conclusions using advanced technology tools</li> </ul>	

SC.O.8.3.04	collaborate to present research on current environmental and technological issues to predict possible solutions.	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current environmental issues to predict possible solutions</li> </ul>	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current technological issues to predict possible solutions</li> </ul>	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in technology</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
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SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
SC.O.8.2.26	research and draw conclusions related to the quality and quantity of surface and ground water.	
	<ul style="list-style-type: none"> <li>Research conclusions related to the quality of surface &amp; ground water</li> </ul>	
	<ul style="list-style-type: none"> <li>Research conclusions related to the quantity of ground &amp; surface water</li> </ul>	
	<ul style="list-style-type: none"> <li>Draw conclusions based on research related to the quality of ground &amp; surface water</li> </ul>	
	<ul style="list-style-type: none"> <li>Draw conclusions based on research related to the quantity of ground &amp; surface water</li> </ul>	
SC.O.8.2.28	determine the impact of oceans on weather and climate; relate global patterns of atmospheric movement on local weather.	
	<ul style="list-style-type: none"> <li>determine the impact of oceans on weather and climate;</li> </ul>	
	<ul style="list-style-type: none"> <li>relate global patterns of atmospheric movement on local weather.</li> </ul>	
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on historical observations</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on experimental evidence</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate explanations to account for variability in experimental results</li> </ul>	
SC.O.8.1.02	demonstrate how a testable methodology is employed to seek solutions for personal and societal issues. (e.g., “scientific method”).	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for personal issues</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for societal issues</li> </ul>	
SC.O.8.1.04	conduct and/or design investigations that incorporate the skills and attitudes and/or values of scientific inquiry (e.g., established research protocol, accurate record keeping, replication of results and peer review, objectivity, openness, skepticism, fairness, or creativity and logic).	

	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the skills of scientific inquiry</li> </ul>	
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	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the values of scientific inquiry</li> </ul>	
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SC.O.8.1.05	implement safe procedures and practices when manipulating equipment, materials, organisms, and models.	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating equipment</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating materials</li> </ul>	
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SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>Relate societal issues to key scientific innovations.</li> </ul>	
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SC.O.8.1.06	use appropriate technology solutions within a problem solving setting to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to measure data</li> </ul>	
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SC.O.8.1.08	draw conclusions from a variety of data sources to analyze and interpret systems and models (e.g., use graphs and equations to measure and apply variables such as rate and scale, evaluate changes in trends and cycles, predict the influence of external variances such as potential sources of error, or interpret maps).	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze systems</li> </ul>	
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	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret systems</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret models</li> </ul>	
Power Standard: Conduct and classify chemical reactions by reaction type, energy type while evaluating the		

variations in diffusion rates by identifying and describing factors that affect chemical reaction rates, including catalysts, temperature changes, light energy and particle size.		
SC.O.8.2.15	evaluate the variations in diffusion rates and examine the effect of changing temperatures.	
	<ul style="list-style-type: none"> <li>• evaluate the variations in diffusion rates</li> <li>• examine the effect of changing temperatures on diffusion rates</li> </ul>	
SC.O.8.2.16	Conduct and classify chemical reactions by reaction type; energy type; and write word equations for the chemical reactions.	
	<ul style="list-style-type: none"> <li>• Conduct chemical reactions</li> <li>• Classify chemical reactions by reaction type</li> <li>• Classify chemical reactions by energy type</li> <li>• Write word equations for the chemical reactions</li> </ul>	
SC.O.8.2.17	identify and describe factors that affect chemical reaction rates, including catalysts, temperature changes, light energies and particle size.	
	<ul style="list-style-type: none"> <li>• Identify factors that affect chemical reaction rates</li> <li>• Describe factors that affect chemical reaction rates</li> <li>• Identify and describe catalysts</li> <li>• Identify and describe temperature changes</li> <li>• Identify and describe light energies</li> <li>• Identify and describe particle size</li> </ul>	
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
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	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
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	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to report data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interact with simulations</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to conduct research</li> </ul>	

	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to present conclusions</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to communicate conclusions</li> </ul>	
SC.O.8.1.08	draw conclusions from a variety of data sources to analyze and interpret systems and models (e.g., use graphs and equations to measure and apply variables such as rate and scale, evaluate changes in trends and cycles, predict the influence of external variances such as potential sources of error, or interpret maps).	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze systems</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze models</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret systems</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret models</li> </ul>	
SC.O.8.1.07	design, conduct, evaluate and revise experiments (e.g., compose a question to be investigated, design a controlled investigation that produces numeric data, evaluate the data in the context of scientific laws and principles, construct a conclusion based on findings, propose revisions to investigations based on manipulation of variables and/or analysis of error, or communicate and defend the results and conclusions).	
	<ul style="list-style-type: none"> <li>Design experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>Conduct experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>Revise experiments</li> </ul>	
Power Standard: Explain the Doppler effect; quantitatively represent wavelength, frequency and velocity; relate the conservation of energy theory to energy transformations; qualitatively represent work, power, and pressure from collected data; graph and interpret the relationships of distance US time, speed versus time, and acceleration versus time; describe Newton's Laws of Motion; illustrate and calculate the mechanical advantage of simple machines.		
SC.O.8.2.19	explain the Doppler effect (e.g., sound).	
SC.O.8.2.20	quantitatively represent wavelength, frequency and velocity (e.g., $v=\lambda f$ ).	
	<ul style="list-style-type: none"> <li>quantitatively represent wavelength</li> </ul>	
	<ul style="list-style-type: none"> <li>quantitatively represent frequency</li> </ul>	
	<ul style="list-style-type: none"> <li>quantitatively represent velocity</li> </ul>	
SC.O.8.2.21	Relate the conservation of energy theory to energy transformations (e.g., electrical/heat, or mechanical/heat).	
SC.O.8.2.22	quantitatively represent work, power, pressure (e.g., $\text{Work}=\text{Force} \times \text{distance}$ , $\text{Power}=\text{Work}/\text{time}$ , or $\text{pressure}=\text{force}/\text{area}$ ) from collected data.	
	<ul style="list-style-type: none"> <li>quantitatively represent work from collected data.</li> </ul>	
	<ul style="list-style-type: none"> <li>quantitatively represent power from collected data.</li> </ul>	
	<ul style="list-style-type: none"> <li>quantitatively represent pressure from collected data.</li> </ul>	
SC.O.8.2.23	graph and interpret the relationships of distance versus time, speed versus time, and acceleration versus time.	
	<ul style="list-style-type: none"> <li>Graph the relationships of distance versus time, speed versus time, and acceleration versus time.</li> </ul>	
	<ul style="list-style-type: none"> <li>Interpret the relationships of distance versus time, speed versus</li> </ul>	

	time, and acceleration versus time.	
SC.O.8.2.24	describe Newton's Laws of Motion; identify examples, illustrate qualitatively and quantitatively drawing vector examples.	
	<ul style="list-style-type: none"> <li>describe Newton's Laws of Motion</li> </ul>	
	<ul style="list-style-type: none"> <li>identify examples of Newton's Laws of Motion</li> </ul>	
	<ul style="list-style-type: none"> <li>Illustrate qualitatively Newton's Laws of Motion</li> </ul>	
	<ul style="list-style-type: none"> <li>Quantitatively draw vector examples.</li> </ul>	
SC.O.8.2.25	illustrate and calculate the mechanical advantage of simple machines.	
	<ul style="list-style-type: none"> <li>Illustrate the mechanical advantage of simple machines.</li> </ul>	
	<ul style="list-style-type: none"> <li>Calculate the mechanical advantage of simple machines.</li> </ul>	
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
	<ul style="list-style-type: none"> <li>Investigate scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Design scientific and technological solutions of personal and societal problems</li> </ul>	
SC.O.8.3.03	communicate experimental designs, results and conclusions using advanced technology tools.	
	<ul style="list-style-type: none"> <li>Communicate experimental designs using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental results using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental conclusions using advanced technology tools</li> </ul>	
SC.O.8.3.04	collaborate to present research on current environmental and technological issues to predict possible solutions.	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current environmental issues to predict possible solutions</li> </ul>	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current technological issues to predict possible solutions</li> </ul>	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in technology</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in technology</li> </ul>	
SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on historical observations</li> </ul>	

	<ul style="list-style-type: none"> <li>• formulate scientific explanations based on experimental evidence</li> </ul>	
	<ul style="list-style-type: none"> <li>• formulate explanations to account for variability in experimental results</li> </ul>	
SC.O.8.1.05	implement safe procedures and practices when manipulating equipment, materials, organisms, and models.	
	<ul style="list-style-type: none"> <li>• implement safe procedures and practices when manipulating equipment</li> </ul>	
	<ul style="list-style-type: none"> <li>• implement safe procedures and practices when manipulating materials</li> </ul>	
	<ul style="list-style-type: none"> <li>• implement safe procedures and practices when manipulating organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>• implement safe procedures and practices when manipulating models</li> </ul>	
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>• Relate societal issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Relate cultural issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Relate economic issues to key scientific innovations.</li> </ul>	
SC.O.8.1.04	conduct and/or design investigations that incorporate the skills and attitudes and/or values of scientific inquiry (e.g., established research protocol, accurate record keeping, replication of results and peer review, objectivity, openness, skepticism, fairness, or creativity and logic).	
	<ul style="list-style-type: none"> <li>• conduct investigations that incorporate the skills of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>• conduct investigations that incorporate the attitudes of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>• conduct investigations that incorporate the values of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>• design investigations that incorporate the skills of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>• design investigations that incorporate the attitudes of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>• design investigations that incorporate the values of scientific inquiry</li> </ul>	
SC.O.8.1.07	design, conduct, evaluate and revise experiments (e.g., compose a question to be investigated, design a controlled investigation that produces numeric data, evaluate the data in the context of scientific laws and principles, construct a conclusion based on findings, propose revisions to investigations based on manipulation of variables and/or analysis of error, or communicate and defend the results and conclusions).	
	<ul style="list-style-type: none"> <li>• Design experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>• Conduct experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>• Evaluate experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>• Revise experiments</li> </ul>	
SC.O.8.1.06	use appropriate technology solutions within a problem solving setting to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.	
	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to measure data</li> </ul>	
	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to collect data</li> </ul>	
	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to interpret data</li> </ul>	
	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to analyze data</li> </ul>	
	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to report data</li> </ul>	

	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to interact with simulations</li> </ul>	
	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to conduct research</li> </ul>	
	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to present conclusions</li> </ul>	
	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to communicate conclusions</li> </ul>	
Power Standard:		
SC.O.8.2.07	demonstrate the basic principles of genetics; introduce Mendel's law, monohybrid crosses, production of body and sex cells (mitosis/meiosis), genes, chromosomes, and inherited traits.	
	<ul style="list-style-type: none"> <li>• demonstrate the basic principles of genetics</li> </ul>	
	<ul style="list-style-type: none"> <li>• demonstrate the basic principles of Mendel's law</li> </ul>	
	<ul style="list-style-type: none"> <li>• demonstrate the basic principles of monohybrid crosses</li> </ul>	
	<ul style="list-style-type: none"> <li>• demonstrate the basic principles of production of body cells (mitosis)</li> </ul>	
	<ul style="list-style-type: none"> <li>• demonstrate the basic principles of production of sex cells (meiosis)</li> </ul>	
	<ul style="list-style-type: none"> <li>• demonstrate the basic principles of genes</li> </ul>	
	<ul style="list-style-type: none"> <li>• demonstrate the basic principles of chromosomes</li> </ul>	
	<ul style="list-style-type: none"> <li>• demonstrate the basic principles of inherited traits</li> </ul>	
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
	<ul style="list-style-type: none"> <li>• Investigate scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>• Compare scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>• Design scientific and technological solutions of personal and societal problems</li> </ul>	
SC.O.8.3.03	communicate experimental designs, results and conclusions using advanced technology tools.	
	<ul style="list-style-type: none"> <li>• Communicate experimental designs using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>• Communicate experimental results using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>• Communicate experimental conclusions using advanced technology tools</li> </ul>	
SC.O.8.3.04	collaborate to present research on current environmental and technological issues to predict possible solutions.	
	<ul style="list-style-type: none"> <li>• Collaborate to present research on current environmental issues to predict possible solutions</li> </ul>	
	<ul style="list-style-type: none"> <li>• Collaborate to present research on current technological issues to predict possible solutions</li> </ul>	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	
	<ul style="list-style-type: none"> <li>• Explore occupational opportunities in science</li> </ul>	
	<ul style="list-style-type: none"> <li>• Explore occupational opportunities in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>• Explore occupational opportunities in technology</li> </ul>	

	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in technology</li> </ul>	
SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on historical observations</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on experimental evidence</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate explanations to account for variability in experimental results</li> </ul>	
SC.O.8.1.05	implement safe procedures and practices when manipulating equipment, materials, organisms, and models.	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating equipment</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating materials</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating models</li> </ul>	
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>Relate societal issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate cultural issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate economic issues to key scientific innovations.</li> </ul>	
SC.O.8.1.02	demonstrate how a testable methodology is employed to seek solutions for personal and societal issues. (e.g., “scientific method”).	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for personal issues</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for societal issues</li> </ul>	
SC.O.8.1.06	use appropriate technology solutions within a problem solving setting to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to measure data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to collect data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interpret data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to analyze data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to report data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interact with simulations</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to conduct research</li> </ul>	

	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to present conclusions</li> </ul>	
	<ul style="list-style-type: none"> <li>• use appropriate technology solutions within a problem solving setting to communicate conclusions</li> </ul>	
SC.O.8.1.08	draw conclusions from a variety of data sources to analyze and interpret systems and models (e.g., use graphs and equations to measure and apply variables such as rate and scale, evaluate changes in trends and cycles, predict the influence of external variances such as potential sources of error, or interpret maps).	
	<ul style="list-style-type: none"> <li>• draw conclusions from a variety of data sources to analyze systems</li> </ul>	
	<ul style="list-style-type: none"> <li>• draw conclusions from a variety of data sources to analyze models</li> </ul>	
	<ul style="list-style-type: none"> <li>• draw conclusions from a variety of data sources to interpret systems</li> </ul>	
	<ul style="list-style-type: none"> <li>• draw conclusions from a variety of data sources to interpret models</li> </ul>	
Power Standard: Trace matter and energy flow on a food web as it flows from sunlight to producers and consumers, design an environment in which the chemical and energy needs and discuss how living cells obtain the essentials of life through chemical reactions of fermentation, respiration and photosynthesis.		
SC.O.8.2.05	discuss how living cells obtain the essentials of life through chemical reactions of fermentation, respiration and photosynthesis.	
	<ul style="list-style-type: none"> <li>• discuss how living cells obtain the essentials of life through chemical reactions of fermentation</li> </ul>	
	<ul style="list-style-type: none"> <li>• discuss how living cells obtain the essentials of life through chemical reactions of respiration</li> </ul>	
	<ul style="list-style-type: none"> <li>• discuss how living cells obtain the essentials of life through chemical reactions of photosynthesis</li> </ul>	
SC.O.8.2.10	trace matter and energy flow in a food web as it flows from sunlight to producers and consumers, design an environment in which the chemical and energy needs for the growth, reproduction and development of plants are met (e.g., food pyramids, decomposition).	
	<ul style="list-style-type: none"> <li>• Trace matter flow in a food web as it flows from sunlight to producers</li> </ul>	
	<ul style="list-style-type: none"> <li>• Tract matter flow in a food web as it flows from producers to consumers</li> </ul>	
	<ul style="list-style-type: none"> <li>• Trace energy flow in a food web as it flows from sunlight to producers</li> </ul>	
	<ul style="list-style-type: none"> <li>• Trace energy flow in a food web as it flows from producers to consumers</li> </ul>	
	<ul style="list-style-type: none"> <li>• Design an experiment in which the chemical needs for growth are met</li> </ul>	
	<ul style="list-style-type: none"> <li>• Design an experiment in which the energy needs for growth are met</li> </ul>	
	<ul style="list-style-type: none"> <li>• Design an experiment in which the chemical needs for reproduction are met</li> </ul>	
	<ul style="list-style-type: none"> <li>• Design an experiment in which the energy needs for reproduction are met</li> </ul>	
	<ul style="list-style-type: none"> <li>• Design an experiment in which the chemical needs for development are met</li> </ul>	
	<ul style="list-style-type: none"> <li>• Design an experiment in which the energy needs for development</li> </ul>	

	are met	
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
	<ul style="list-style-type: none"> <li>Investigate scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Design scientific and technological solutions of personal and societal problems</li> </ul>	
SC.O.8.3.03	communicate experimental designs, results and conclusions using advanced technology tools.	
	<ul style="list-style-type: none"> <li>Communicate experimental designs using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental results using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental conclusions using advanced technology tools</li> </ul>	
SC.O.8.3.04	collaborate to present research on current environmental and technological issues to predict possible solutions.	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current environmental issues to predict possible solutions</li> </ul>	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current technological issues to predict possible solutions</li> </ul>	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in technology</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in technology</li> </ul>	
SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
SC.O.8.1.02	demonstrate how a testable methodology is employed to seek solutions for personal and societal issues. (e.g., “scientific method”).	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for personal issues</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for societal issues</li> </ul>	
SC.O.8.1.04	conduct and/or design investigations that incorporate the skills and attitudes and/or values of scientific inquiry (e.g., established research protocol, accurate record keeping, replication of results and peer review, objectivity, openness, skepticism, fairness, or creativity and logic).	
	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the skills of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the attitudes of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the values of scientific inquiry</li> </ul>	

	<ul style="list-style-type: none"> <li>design investigations that incorporate the skills of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>design investigations that incorporate the attitudes of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>design investigations that incorporate the values of scientific inquiry</li> </ul>	
SC.O.8.1.05	implement safe procedures and practices when manipulating equipment, materials, organisms, and models.	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating equipment</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating materials</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating models</li> </ul>	
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>Relate societal issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate cultural issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate economic issues to key scientific innovations.</li> </ul>	
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on historical observations</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on experimental evidence</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate explanations to account for variability in experimental results</li> </ul>	
SC.O.8.1.06	use appropriate technology solutions within a problem solving setting to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to measure data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to collect data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interpret data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to analyze data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to report data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interact with simulations</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to conduct research</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to present conclusions</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to communicate conclusions</li> </ul>	
SC.O.8.1.08	draw conclusions from a variety of data sources to analyze and interpret systems and models (e.g., use graphs and equations to measure and apply variables such as rate and scale, evaluate changes in trends and cycles, predict the influence of external variances such as potential sources of error, or interpret maps).	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze systems</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze models</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret systems</li> </ul>	

	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret models</li> </ul>	
<b>Power Standard: Research and recognize the societal concerns effects of phenomena associated with motions in sun-moon-earth systems and the origin and orbits of comets, asteroids, and meteoroids as they effect exploration and colonization of space.</b>		
SC.O.8.1.02	demonstrate how a testable methodology is employed to seek solutions for personal and societal issues. (e.g., “scientific method”).	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for personal issues</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for societal issues</li> </ul>	
SC.O.8.1.04	conduct and/or design investigations that incorporate the skills and attitudes and/or values of scientific inquiry (e.g., established research protocol, accurate record keeping, replication of results and peer review, objectivity, openness, skepticism, fairness, or creativity and logic).	
	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the skills of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the attitudes of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>conduct investigations that incorporate the values of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>design investigations that incorporate the skills of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>design investigations that incorporate the attitudes of scientific inquiry</li> </ul>	
	<ul style="list-style-type: none"> <li>design investigations that incorporate the values of scientific inquiry</li> </ul>	
SC.O.8.1.05	implement safe procedures and practices when manipulating equipment, materials, organisms, and models.	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating equipment</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating materials</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating models</li> </ul>	
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>Relate societal issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate cultural issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate economic issues to key scientific innovations.</li> </ul>	
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on historical observations</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on experimental evidence</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate explanations to account for variability in experimental results</li> </ul>	
SC.O.8.1.06	use appropriate technology solutions within a problem solving setting to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to measure data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to collect data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interpret data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to analyze data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to</li> </ul>	

	report data	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interact with simulations</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to conduct research</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to present conclusions</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to communicate conclusions</li> </ul>	
SC.O.8.1.07	design, conduct, evaluate and revise experiments (e.g., compose a question to be investigated, design a controlled investigation that produces numeric data, evaluate the data in the context of scientific laws and principles, construct a conclusion based on findings, propose revisions to investigations based on manipulation of variables and/or analysis of error, or communicate and defend the results and conclusions).	
	<ul style="list-style-type: none"> <li>Design experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>Conduct experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>Revise experiments</li> </ul>	
SC.O.8.2.31	research and recognize the societal concerns of exploration and colonization of space.	
	<ul style="list-style-type: none"> <li>Research the societal concerns of exploration and colonization of space</li> </ul>	
	<ul style="list-style-type: none"> <li>Recognize the societal concerns of exploration and colonization of space</li> </ul>	
SC.O.8.2.32	explain phenomena associated with motions in sun-earth-moon system (e.g., eclipses, tides, or seasons).	
SC.O.8.2.33	describe the origin and orbits of comets, asteroids, and meteoroids.	
	<ul style="list-style-type: none"> <li>Describe the origin of comets</li> </ul>	
	<ul style="list-style-type: none"> <li>Describe the origin of asteroids</li> </ul>	
	<ul style="list-style-type: none"> <li>Describe the origin of meteoroids</li> </ul>	
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
	<ul style="list-style-type: none"> <li>Investigate scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Design scientific and technological solutions of personal and societal problems</li> </ul>	
SC.O.8.3.03	communicate experimental designs, results and conclusions using advanced technology tools.	
	<ul style="list-style-type: none"> <li>Communicate experimental designs using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental results using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental conclusions using advanced technology tools</li> </ul>	

SC.O.8.3.04	collaborate to present research on current environmental and technological issues to predict possible solutions.	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current environmental issues to predict possible solutions</li> </ul>	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current technological issues to predict possible solutions</li> </ul>	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in technology</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in technology</li> </ul>	
SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
Power Standard: Compare patterns of human development to other vertebrates; organize groups of unknown organisms based on observable characteristics; analyze how behaviors of organisms lead to species continuity.		
SC.O.8.2.06	analyze how behaviors of organisms lead to species continuity (e.g., reproductive/mating behaviors, or seed dispersal).	
SC.O.8.2.08	compare patterns of human development to other vertebrates.	
SC.O.8.2.09	organize groups of unknown organisms based on observable characteristics (e.g., create dichotomous keys).	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in technology</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in technology</li> </ul>	
SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
SC.O.8.1.08	draw conclusions from a variety of data sources to analyze and interpret systems and models (e.g., use graphs and equations to measure and apply variables such as rate and scale, evaluate changes in trends and cycles, predict the influence of external variances such as potential sources of error, or interpret maps).	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze systems</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze models</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret systems</li> </ul>	

	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret models</li> </ul>	
Power Standard:		
SC.O.8.2.01	demonstrate an understanding of the interrelationships among physics, chemistry, biology, earth/environmental science, and astronomy.	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships of physics and chemistry</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships of physics and biology</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships of physics and earth/environmental science</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships of physics and astronomy</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships of chemistry and biology</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships of chemistry and earth/environmental science</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships of chemistry and astronomy</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships of biology and earth/environmental sciences</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships biology and astronomy</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate an understanding of the interrelationships earth/environmental sciences and astronomy</li> </ul>	
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
	<ul style="list-style-type: none"> <li>Investigate scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Compare scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>Design scientific and technological solutions of personal and societal problems</li> </ul>	
SC.O.8.3.03	communicate experimental designs, results and conclusions using advanced technology tools.	
	<ul style="list-style-type: none"> <li>Communicate experimental designs using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental results using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>Communicate experimental conclusions using advanced technology tools</li> </ul>	
SC.O.8.3.04	collaborate to present research on current environmental and technological issues to predict possible solutions.	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current environmental issues to predict possible solutions</li> </ul>	
	<ul style="list-style-type: none"> <li>Collaborate to present research on current technological issues to predict possible solutions</li> </ul>	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	

	<ul style="list-style-type: none"> <li>Explore occupational opportunities in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in technology</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in technology</li> </ul>	
SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>Relate societal issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate cultural issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate economic issues to key scientific innovations.</li> </ul>	
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on historical observations</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on experimental evidence</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate explanations to account for variability in experimental results</li> </ul>	
SC.O.8.1.06	use appropriate technology solutions within a problem solving setting to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to measure data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to collect data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interpret data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to analyze data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to report data</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to interact with simulations</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to conduct research</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to present conclusions</li> </ul>	
	<ul style="list-style-type: none"> <li>use appropriate technology solutions within a problem solving setting to communicate conclusions</li> </ul>	
SC.O.8.1.07	design, conduct, evaluate and revise experiments (e.g., compose a question to be investigated, design a controlled investigation that produces numeric data, evaluate the data in the context of scientific laws and principles, construct a conclusion based on findings, propose revisions to investigations based on manipulation of variables and/or analysis of error, or communicate and defend the results and	

	conclusions).	
	<ul style="list-style-type: none"> <li>• Design experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>• Conduct experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>• Evaluate experiments</li> </ul>	
	<ul style="list-style-type: none"> <li>• Revise experiments</li> </ul>	
Power Standard: Identify and explain the principle forces of plate tectonics and related geological events; analyze the forces of tectonics, weathering and erosion; model process of soil formation and suggest methods of soil preservation of conservation.		
SC.O.8.2.27	identify and explain the principle forces of plate tectonics and related geological events (e.g., earthquakes, volcanoes, or landforms).	
	<ul style="list-style-type: none"> <li>• Identify the principle forces of plate tectonics and related geological events</li> </ul>	
	<ul style="list-style-type: none"> <li>• Explain the principle forces of plate tectonics and related geological events</li> </ul>	
SC.O.8.2.29	analyze the forces of tectonics, weathering and erosion that have shaped the earth's surface.	
	<ul style="list-style-type: none"> <li>• Analyze the forces of tectonics</li> </ul>	
	<ul style="list-style-type: none"> <li>• Analyze the forces of weathering</li> </ul>	
	<ul style="list-style-type: none"> <li>• Analyzing the forces of erosion</li> </ul>	
SC.O.8.2.30	model processes of soil formation and suggest methods of soil preservation and conservation.	
	<ul style="list-style-type: none"> <li>• Model processes of soil formation</li> </ul>	
	<ul style="list-style-type: none"> <li>• Suggest methods of soil preservation</li> </ul>	
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.3.02	investigate, compare and design scientific and technological solutions to personal and societal problems.	
	<ul style="list-style-type: none"> <li>• Investigate scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>• Compare scientific and technological solutions of personal and societal problems</li> </ul>	
	<ul style="list-style-type: none"> <li>• Design scientific and technological solutions of personal and societal problems</li> </ul>	
SC.O.8.3.03	communicate experimental designs, results and conclusions using advanced technology tools.	
	<ul style="list-style-type: none"> <li>• Communicate experimental designs using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>• Communicate experimental results using advanced technology tools</li> </ul>	
	<ul style="list-style-type: none"> <li>• Communicate experimental conclusions using advanced technology tools</li> </ul>	
SC.O.8.3.04	collaborate to present research on current environmental and technological issues to predict possible solutions.	
	<ul style="list-style-type: none"> <li>• Collaborate to present research on current environmental issues to predict possible solutions</li> </ul>	
	<ul style="list-style-type: none"> <li>• Collaborate to present research on current technological issues to predict possible solutions</li> </ul>	
SC.O.8.3.05	explore occupational opportunities in science, engineering and technology and evaluate the required academic preparation.	

	<ul style="list-style-type: none"> <li>Explore occupational opportunities in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Explore occupational opportunities in technology</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in science</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in engineering</li> </ul>	
	<ul style="list-style-type: none"> <li>Evaluate required academic preparation for an occupation in technology</li> </ul>	
SC.O.8.3.06	given a current science-technology-societal issue, construct and defend potential solutions.	
	<ul style="list-style-type: none"> <li>Construct solutions given a current science-tech-societal issue</li> </ul>	
	<ul style="list-style-type: none"> <li>Defend solutions given a current science-tech-societal issue</li> </ul>	
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>Relate societal issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate cultural issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>Relate economic issues to key scientific innovations.</li> </ul>	
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on historical observations</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate scientific explanations based on experimental evidence</li> </ul>	
	<ul style="list-style-type: none"> <li>formulate explanations to account for variability in experimental results</li> </ul>	
SC.O.8.1.02	demonstrate how a testable methodology is employed to seek solutions for personal and societal issues. (e.g., “scientific method”).	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for personal issues</li> </ul>	
	<ul style="list-style-type: none"> <li>demonstrate how a testable methodology is employed to seek solutions for societal issues</li> </ul>	
SC.O.8.1.05	implement safe procedures and practices when manipulating equipment, materials, organisms, and models.	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating equipment</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating materials</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating organisms</li> </ul>	
	<ul style="list-style-type: none"> <li>implement safe procedures and practices when manipulating models</li> </ul>	
SC.O.8.1.08	draw conclusions from a variety of data sources to analyze and interpret systems and models (e.g., use graphs and equations to measure and apply variables such as rate and scale, evaluate changes in trends and cycles, predict the influence of external variances such as potential sources of error, or interpret maps).	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze systems</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to analyze models</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret systems</li> </ul>	
	<ul style="list-style-type: none"> <li>draw conclusions from a variety of data sources to interpret models</li> </ul>	
Power Standard: Use the periodic table to locate and classify elements, using models of atoms, as metallic, non-metallic or metalloid and along with the number of subatomic particles present.		
SC.O.8.2.11	use the periodic table to locate and classify elements as metallic, non-metallic or metalloid.	
	<ul style="list-style-type: none"> <li>use the periodic table to locate metallic elements</li> </ul>	

	<ul style="list-style-type: none"> <li>• use the periodic table to locate non-metallic elements</li> </ul>	
	<ul style="list-style-type: none"> <li>• use the periodic table to locate metalloids elements</li> </ul>	
	<ul style="list-style-type: none"> <li>• Use the periodic table to classify elements as metallic</li> </ul>	
	<ul style="list-style-type: none"> <li>• Use the periodic table to classify elements as non-metallic</li> </ul>	
	<ul style="list-style-type: none"> <li>• Use the periodic table to classify elements as metalloid</li> </ul>	
SC.O.8.2.12	reconstruct development models of the atom (e.g., Crookes, Thompson, Becquerel, Rutherford, or Bohr).	
SC.O.8.2.13	calculate the number of protons, neutrons, and electrons and use the information to construct a Bohr model of the atom.	
	<ul style="list-style-type: none"> <li>• calculate the number of protons</li> </ul>	
	<ul style="list-style-type: none"> <li>• calculate the number of neutrons</li> </ul>	
	<ul style="list-style-type: none"> <li>• calculate the number of electrons</li> </ul>	
	<ul style="list-style-type: none"> <li>• use the information to construct a Bohr model of the atom.</li> </ul>	
SC.O.8.2.14	classify elements into their families based upon their valence electrons.	
SC.O.8.3.01	synthesize concepts across various science disciplines to better understand the natural world (e.g., form and function, systems, or change over time).	
SC.O.8.1.03	relate societal, cultural and economic issues to key scientific innovations.	
	<ul style="list-style-type: none"> <li>• Relate societal issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Relate cultural issues to key scientific innovations.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Relate economic issues to key scientific innovations.</li> </ul>	
SC.O.8.1.01	formulate scientific explanations based on historical observations and experimental evidence, accounting for variability in experimental results.	
	<ul style="list-style-type: none"> <li>• formulate scientific explanations based on historical observations</li> </ul>	
	<ul style="list-style-type: none"> <li>• formulate scientific explanations based on experimental evidence</li> </ul>	
	<ul style="list-style-type: none"> <li>• formulate explanations to account for variability in experimental results</li> </ul>	