

5th Grade Science

The following CSOs fit with EACH Power Standard/Chunk		
SC.O.5.1.1	realize that scientists formulate and test their explanations of nature using observation and experiments.	DOK 1
SC.O.5.1.3	examine the careers and contributions of men and women of diverse cultures to the development of science.	DOK 1
SC.O.5.1.4	compare and contrast the historical significance of scientific discoveries.	DOK 2
SC.O.5.1.5	cooperate and collaborate to ask questions, design and conduct investigations to find answers and solve problems.	DOK 2
SC.O.5.1.6	formulate conclusions through close observations, logical reasoning, objectivity, perseverance and integrity in data collection.	DOK 3
SC.O.5.1.8	use a variety of technologies and scientific instruments to conduct explorations, investigations and experiments of the natural world.	DOK 1
SC.O.5.1.9	demonstrate safe techniques for handling, manipulating and caring for science materials, equipment, natural specimens and living organisms.	DOK 1
SC.O.5.1.10	utilize experimentation to demonstrate scientific processes and thinking skills (e.g., formulating questions, predicting, forming hypotheses, quantifying, or identifying dependent and independent variables).	DOK 3
SC.O.5.1.11	construct and use charts, graphs and tables to organize, display, interpret, analyze and explain data.	DOK 2
SC.O.5.1.12	use inferential reasoning to make logical conclusions from collected data.	DOK 3
SC.O.5.3.5	research everyday applications and interactions of science and technology.	DOK 3
SC.O.5.3.6	evaluate and critically analyze mass media reports of scientific developments and events.	DOK 3
SC.O.5.3.2	construct a variety of useful models of an object, event, or process.	DOK 2
SC.O.5.3.7	explore the connections between science, technology, society and career opportunities.	DOK 1
Power Standard: Use instruments to collect and display weather data; identify and describe natural landforms and their impact on weather and climate; compare and explain weathering, erosion, & deposition.		
SC.O.5.2.20	Use a variety of instruments and sources to collect and display weather data to	DOK 2

	describe weather patterns.	
	<ul style="list-style-type: none"> • Use a variety of instruments and sources to collect weather data to describe weather patterns 	
	<ul style="list-style-type: none"> • Use a variety of instruments and sources to display weather data to describe weather patterns 	
SC.O.5.2.19	Identify and describe natural landforms and explain how they change and impact weather and climate.	DOK 2
	<ul style="list-style-type: none"> • Identify natural landforms 	
	<ul style="list-style-type: none"> • Describe natural landforms 	
	<ul style="list-style-type: none"> • Explain how natural landforms change weather and climate 	
	<ul style="list-style-type: none"> • Explain how natural landforms impact weather and climate 	
SC.O.5.2.21	Compare and explain the different rates of weathering, erosion and deposition on various materials.	DOK 2
	<ul style="list-style-type: none"> • Compare the different rates of weathering on various materials 	
	<ul style="list-style-type: none"> • Compare the different rates of erosion on various materials 	
	<ul style="list-style-type: none"> • Compare the different rates of deposition on various materials 	
	<ul style="list-style-type: none"> • Explain the different rates of erosion on various materials 	
	<ul style="list-style-type: none"> • Explain the different rates of deposition on various materials 	
	<ul style="list-style-type: none"> • Explain the different rates of weathering on various materials 	
Power Standard: Explore how fossils and geologic features can be used to determine the age of rocks and rock layers; recognize and describe layers of the earth and their various features; analyze a topographical map to make inferences related to elevation and land features.		
SC.O.5.2.18	Describe the layers of the earth and their various features.	DOK 1
SC.O.5.2.25	Recognize that the Earth is made of plates (plate tectonics).	DOK 1
SC.O.5.2.22	Analyze a topographical map to make inferences related to elevation and land features.	DOK 3
	<ul style="list-style-type: none"> • Analyze a topographical map to make inferences related to land features. 	
	<ul style="list-style-type: none"> • Analyze a topographical map to make inferences related to elevation. 	
SC.O.5.2.24	Explore and explain how fossils and geologic features can be used to determine the relative age of rocks and rock layers.	DOK 2

	<ul style="list-style-type: none"> Explore how fossils can be used to determine the relative age of rocks and rock layers. 	
	<ul style="list-style-type: none"> Explain how fossils can be used to determine the relative age of rocks and rock layers. 	
	<ul style="list-style-type: none"> Explore how geologic features can be used to determine the relative age of rocks and rock layers. 	
	<ul style="list-style-type: none"> Explain how geologic features can be used to determine the relative age of rocks and rock layers. 	
<p>Power Standard: Compare and contrast how the different characteristics of plants and animals help them to survive in different niches and environments including adaptations, natural selections, and extinction, through research explore the extinction of a species due to environmental conditions.</p>		
SC.O.5.2.6	Compare how the different characteristics of plants help them to survive in different niches and environments including adaptations, natural selection, and extinction.	DOK 2
	<ul style="list-style-type: none"> Contrast how the different characteristics of plants help them to survive in different niches and environments including adaptations, natural selection, and extinction. 	
	<ul style="list-style-type: none"> Compare how the different characteristics of plants and animals help them to survive in different niches and environments including adaptations, natural selection, and extinction. 	
	<ul style="list-style-type: none"> Contrast how the different characteristics of animals help them to survive in different niches and environments including adaptations, natural selection, and extinction. 	
	<ul style="list-style-type: none"> Compare and contrast how the different characteristics of animals help them to survive in different niches and environments including adaptations, natural selection, and extinction. 	
SC.O.5.2.7	Through the use of research and technology, explore the extinction of a species due to environmental conditions.	DOK 3
	<ul style="list-style-type: none"> Through the use of research, explore the extinction of a species due to environmental conditions. 	
	<ul style="list-style-type: none"> Through the use of technology, explore the extinction of a species due to 	

	environmental conditions.	
No Power Standard		
SC.O.5.2.23	Identify resources as being renewable or non-renewable.	DOK 1
	<ul style="list-style-type: none"> Identify resources as being renewable. 	
	<ul style="list-style-type: none"> Identify resources as being non-renewable. 	
Power Standard: Explain that the mass of a material is conserved whether it is together, in parts, or in a different state and compare and contrast changes that occur in an object or a system to its original state.		
SC.O.5.2.9	Explain that the mass of a material is conserved whether it is together, in parts, or in a different state.	DOK 1
	<ul style="list-style-type: none"> Explain that the mass of a material is conserved when it is together. 	
	<ul style="list-style-type: none"> Explain that the mass of a material is conserved when it is in parts. 	
	<ul style="list-style-type: none"> Explain that the mass of a material is conserved when it is in a different state. 	
SC.O.5.3.3	Compare and contrast changes that occur in an object or a system to its original state.	DOK 2
	<ul style="list-style-type: none"> Compare changes that occur in an object or a system to its original state. 	
	<ul style="list-style-type: none"> Contrast changes that occur in an object or a system to its original state. 	
No Power Standard		
SC.O.5.2.17	Compare and contrast change in length, tension, or thickness of a vibrating object on the frequency of vibration.	DOK 2
	<ul style="list-style-type: none"> Compare the change in length of a vibrating object on the frequency of vibration. 	
	<ul style="list-style-type: none"> Compare the change in tension of a vibrating object on the frequency of vibration. 	
	<ul style="list-style-type: none"> Compare the change in thickness of a vibrating object on the frequency of vibration. 	
	<ul style="list-style-type: none"> Contrast the change in length of a vibrating object on the frequency of vibration. 	
	<ul style="list-style-type: none"> Contrast the change in tension of a vibrating object on the frequency of vibration. 	
	<ul style="list-style-type: none"> Contrast the change in thickness of a vibrating object on the frequency of 	

	vibration.	
Power Standard: Analyze electrical circuits, measure electricity using voltage and wattage, and investigate properties of an electromagnet		
SC.O.5.2.13	Analyze diagrams of electrical circuits.	DOK 2
SC.O.5.2.14	Measure electricity using voltage and wattage.	DOK 1
	<ul style="list-style-type: none"> • Measure electricity using wattage. 	
	<ul style="list-style-type: none"> • Measure electricity using voltage. 	
SC.O.5.2.15	Investigate the properties of an electromagnet by selecting appropriate materials, designing and testing an electromagnet, and evaluating differences in design.	DOK 2
	<ul style="list-style-type: none"> • Investigate the properties of an electromagnet by selecting appropriate materials. 	
	<ul style="list-style-type: none"> • Investigate the properties of an electromagnet by evaluating differences in design. 	
	<ul style="list-style-type: none"> • Investigate the properties of an electromagnet by designing and testing an electromagnet. 	
Power Standard: Identify and explain common energy conversions in cycles of matter including photosynthesis and the carbon dioxide cycle; tracing and describing the pathways of the sun's energy through producers, consumers, and decomposers using food webs and pyramids.		
SC.O.5.2.2	Identify and explain common energy conversions in cycles of matter including photosynthesis and the carbon dioxide cycle.	DOK 2
	<ul style="list-style-type: none"> • Identify common energy conversions in photosynthesis. 	
	<ul style="list-style-type: none"> • Identify common energy conversions in the carbon dioxide cycle. 	
	<ul style="list-style-type: none"> • Explain common energy conversions in photosynthesis. 	
	<ul style="list-style-type: none"> • Explain common energy conversions in the carbon dioxide cycle. 	
SC.O.5.2.8	Trace and describe the pathways of the sun's energy through producers, consumers and decomposers using food webs and pyramids.	DOK 2
	<ul style="list-style-type: none"> • Trace the pathways of the sun's energy through producers using food webs and pyramids. 	
	<ul style="list-style-type: none"> • Trace the pathways of the sun's energy through consumers using food webs 	

	and pyramids.	
	<ul style="list-style-type: none"> Trace the pathways of the sun's energy through decomposers using food webs and pyramids. 	
	<ul style="list-style-type: none"> Describe the pathways of the sun's energy through producers. 	
	<ul style="list-style-type: none"> Describe the pathways of the sun's energy through consumers using food webs and pyramids. 	
	<ul style="list-style-type: none"> Describe the pathways of the sun's energy through decomposers using food webs and pyramids. 	
Power Standard: Starting at the cell level, identify the structures of living organisms, explain their functions, and comparing variations of growth and reproduction.		
SC.O.5.2.3	Identify the structures of living organisms and explain their function.	DOK 2
	<ul style="list-style-type: none"> Identify the structure of living organisms. 	
	<ul style="list-style-type: none"> Explain the function of living organisms. 	
SC.O.5.2.4	Observe and identify cells of organisms using a microscope.	DOK 1
	<ul style="list-style-type: none"> Observe cells of organisms using a microscope. 	
	<ul style="list-style-type: none"> Identify cells of organisms using a microscope. 	
SC.O.5.2.5	Compare variations of plant growth and reproduction.	DOK 2
	<ul style="list-style-type: none"> Compare variations of plant growth. 	
	<ul style="list-style-type: none"> Compare variations of reproduction. 	
Power Standard: Demonstrate an understanding of the interconnections of biological, earth, and space, and physical science concepts as new scientific information challenges current explanations.		
SC.O.5.1.2	Recognize scientific knowledge is subject to modification as new scientific information challenges current explanations.	DOK 1
SC.O.5.2.1	Demonstrate an understanding of the interconnections of biological, earth and space, and physical science concepts.	DOK 1
Power Standard: Explore the relationship between the parts of a system and apply skepticism, careful methods, logical reasoning and creativity in investigating the observable universe.		
SC.O.5.3.1	Explore the relationship between the parts of a system to the whole system.	DOK 1

SC.O.5.1.7	Apply skepticism, careful methods, logical reasoning and creativity in investigating the observable universe.	DOK 3
	<ul style="list-style-type: none"> • Apply skepticism in investigating the observable universe. 	
	<ul style="list-style-type: none"> • Apply careful methods in investigating the observable universe. 	
	<ul style="list-style-type: none"> • Apply logical reasoning in investigating the observable universe. 	
	<ul style="list-style-type: none"> • Apply creativity in investigating the observable universe. 	
Power Standard: Identify the substance by their relative densities through experimentation; compare and contrast the influence that a variation in scale will have on the way an object or system works.		
SC.O.5.3.4	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).	DOK 2
	<ul style="list-style-type: none"> • Contrast the influence that a variation in scale will have on the way an object or system works. 	
	<ul style="list-style-type: none"> • Compare the influence that a variation in scale will have on the way an object or system works. 	
SC.O.5.2.12	Through experimentation, identify substances by their relative densities (mass/volume=density).	DOK 2
No Power Standard		
SC.O.5.2.16	Describe how the variables of gravity and friction affect the motion of objects.	DOK 2
	<ul style="list-style-type: none"> • Describe how the variables of gravity affect the motion of objects. 	
	<ul style="list-style-type: none"> • Describe how the variables of friction affect the motion of objects. 	
Power Standards: Identify elements by their periodic table symbols and recognize they are composed of one type of matter.		
SC.O.5.2.10	recognize that elements are composed of only one type of matter.	DOK 1
SC.O.5.2.11	using the periodic table, identify common elements according to their symbols.	DOK 1