

7th Grade Science Priority Standards

	MLS Code	Standard	Length	Grading Period Assessed
Unit		1-Engineering Application		
Priority Standard	6-8.ETS1.A.1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.		1
	6-8.ETS1.B.3	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.		1
Supporting Standards	6-8.ETS1.B.1	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.		
	6-8.ETS1.B.2	Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.		
Unit		2-Motion and Forces		
Priority Standards	6-8.PS2.A.2	Plan and conduct an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. [Clarification Statement: Emphasis is on balanced (Newton's First Law) and unbalanced forces in a system, qualitative comparisons of forces, mass and changes in motion (Newton's Second Law), frame of reference, and specification of units.]		2
	6-8.PS2.A.1	Apply physics principles to design a solution that minimizes the force of an object during a collision and develop an evaluation of the solution.		2
Supporting Standards	6-8.PS3.B.1	Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object. [Clarification Statement: Examples of empirical evidence used in arguments could include an inventory or other representation of the energy before and after the transfer in the form of temperature changes or motion of object.]		

Unit				
Unit		3-Electromagnetic Forces		
Priority Standard	6-8.PS2.B.1	Analyze diagrams and collect data to determine the factors that affect the strength of electric and magnetic forces. [Clarification Statement: Examples of devices that use electric and magnetic forces could include electromagnets, electric motors, or generators. Examples of data could include the effect of the number of turns of wire on the strength of an electromagnet, or the effect of increasing the number or strength of magnets on the speed of an electric motor.]		3
		Conduct an investigation and evaluate the experimental design to provide evidence that electric and magnetic fields exist between objects exerting forces on each other even though the objects are not in contact. . [Clarification Statement: Examples of this phenomenon could include the interactions of magnets, electrically charged strips of tape, and electrically-charged pith balls. Examples of investigations could include first-hand experiences or simulations.]		3
Supporting Standards		None		
Unit				
Unit		4-Our Solar System		
Priority Standard	6-8.ESS1.A.3	Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. [Clarification Statement: Emphasis for the model is on gravity as the force that holds together the solar system and Milky Way galaxy and controls orbital motions within them. Examples of models can be physical or conceptual.]		3
	6-8.ESS1.B.1	Analyze and interpret data to determine scale properties of objects in the solar system. [Clarification Statement: Examples of scale properties include the sizes of an object's layers (such as crust and atmosphere), surface features (such as volcanoes), and orbital radius. Examples of data include statistical information, drawings and photographs, and models.]		4
Supporting Standards	6-8.PS2.B.2	Create and analyze a graph to use as evidence to support the claim that gravitational interactions depend on the mass of interacting objects. [Clarification Statement: Examples of evidence for arguments could include data generated from simulations or digital tools; and charts displaying mass, strength of interaction, distance from the Sun, and orbital periods of objects within the solar system.]		
Unit				
Unit		5-Sun-Moon-Earth Relations		

Priority Standard	6-8.ESS1.A.1	Develop and use a model of the Earth-sun-moon system to explain the cyclic patterns of lunar phases and eclipses of the sun and moon. [Clarification Statement: Examples of models can be physical, graphical, or conceptual and should emphasize relative positions and distances.]		4
	6-8.ESS1.A.2	Develop and use a model of the Earth-sun system to explain the cyclical pattern of seasons, which includes the Earth's tilt and directional angle of sunlight on different areas of Earth across the year. [Clarification Statement: Examples of models can be physical, graphical, or conceptual.]		5
Supporting Standards		None		
Unit		6-Atmosphere and Weather		
Priority Standard	6-8.ESS2.C.1	Design and develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. [Clarification Statement: Emphasis is on the ways water changes its state as it moves through the multiple pathways of the hydrologic cycle. Examples of models can be conceptual or physical.]		5
	6-8.ESS2.C.2	Research, collect, and analyze data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. [Clarification Statement: Emphasis is on how air masses flow from regions of high pressure to low pressure, causing weather (defined by temperature, pressure, humidity, precipitation, and wind) at a fixed location to change over time, and how sudden changes in weather can result when different air masses collide. Emphasis is on how weather can be predicted within possible ranges. Examples of data can be provided to students (such as weather maps, diagrams, and visualizations) or obtained through laboratory experiments (such as with condensation).]		5
Supporting Standards		None		
Unit		7-Climate Changes		

Priority Standard	6-8.ESS2.C.3	Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. [Clarification Statement: Emphasis is on how patterns vary by latitude, altitude, and geographic land distribution. Emphasis of atmospheric circulation is on the sunlight-driven latitudinal banding, the Coriolis effect, and resulting prevailing winds; emphasis of ocean circulation is on the transfer of heat by the global ocean convection cycle, which is constrained by the Coriolis effect and the outlines of continents. Examples of models can be diagrams, maps and globes, or digital representations.]		6
	6-8.ESS3.D.1	Analyze evidence of the factors that have caused the change in global temperatures over the past century. [Clarification Statement: Examples of factors include human activities (such as fossil fuel combustion, cement production, and agricultural activity) and natural processes (such as changes in incoming solar radiation or volcanic activity). Examples of evidence can include tables, graphs, and maps of global and regional temperatures, atmospheric levels of gases such as carbon dioxide and methane, and the rates of human activities.]		6
Supporting Standards		None		
Unit		8-Cells and Functions		
Priority Standard	6-8.LS1.A.1	Provide evidence that organisms (unicellular and multicellular) are made of cells and that a single cell must carry out all of the basic functions of life. [Clarification Statement: Emphasis is on developing evidence that living things are made of cells, distinguishing between living and non-living things, and understanding that living things may be made of one cell or many and varied cells.]		6
	6-8.LS1.A.2	Develop and use a model to describe the function of a cell as a whole and ways parts of the cells contribute to that function. [Clarification Statement: Emphasis is on the cell functioning as a whole system and the primary role of identified parts of the cell, specifically the nucleus, chloroplasts, mitochondria, cell membrane, and cell wall.]		6
Supporting Standards		None		