

7th Grade Science Pacing Guide

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			TN Standards	Lesson Focus	Additional Notes
			Communicate scientific understanding using descriptions, explanations, and models.	I can... Identify root words, prefixes and suffixes to determine the meanings of scientific words. I can... define science and why science is important to help understand everyday life.	7.7.3 Synthesize information to determine cause and effect relationships between evidence and explanations
			Communicate scientific understanding using descriptions, explanations, and models.	I can... use instruments of science to solve problems.	7.7.3 Synthesize information to determine cause and effect relationships between evidence and explanations
			Communicate scientific understanding using descriptions, explanations, and models.	I can... use the scientific method to answer questions in everyday life. I can...identify dependent and independent variables.	7.7.3 Synthesize information to determine cause and effect relationships between evidence and explanations
			GLE. 0707.11.4 Investigate how Newton's Laws of Motion explain an object's movement.	I can...describe the nature of forces and how they act. I can...measure various forces (the force of friction on loads of different weights, the elastic force of a rubber band, and/or gravitational force on different objects). I can...determine the effect of constant force on the motion of an object.	7.7.11.4 Identify and explain how Newton's laws of motion relate to the movement of an object.
			GLE. 0707.11.4 Investigate how Newton's Laws of Motion explain an object's movement.	I can... demonstrate and describe applications of Newton's laws of motion. I can...justify which of Newton's laws of motion is demonstrated when presented with an example of a force or forces	7.7.11.4 Identify and explain how Newton's laws of motion relate to the movement of an object.

			interacting with an object or objects.	
		GLE 0707.11.3 Distinguish between speed and velocity GLE 0707.11.2 Apply the equation for work in experiments with simple machines to determine the amount of force needed to do work	I can...analyze the relationship between velocity and acceleration. I can...design and conduct an experiment to investigate the effect of various forces on motion, supporting all conclusions with relevant and accurate scientific data and evidence. I can...measure various forces (the force of friction on loads of different weights, the elastic force of a rubber band, and/or gravitational force on different objects). I can...calculate the work done by different forces.	SPI 7.7.11.3 Apply proper equations to solve basic problems pertaining to distance, time, speed, and velocity. SPI 7.7.11.2 Determine the amount of force needed to do work using different simple machines
		GLE 0707.11.2 Apply the equation for work in experiments with simple machines to determine the amount of force needed to do work	I can...compare and contrast six types of simple machines. I can...identify the simple machines that make up a compound machine. I can...compare work done using a simple machine, e.g. in pulling a load up and inclined plane, with the work done without using a simple machine, e.g., in lifting the load straight up. I can...analyze how simple machines are used in adaptive and assistive bioengineered products.	SPI 7.7.11.2 Determine the amount of force needed to do work using different simple machines
		GLE 0707.11.5 Compare and contrast the basic parts of a wave	I can...explain the relationship among waves, energy, and matter. I can...compare waves and particles. I can...describe the difference between transverse waves and compressional waves. I can...describe the relationship between the frequency and wavelength of a wave.	SPI 7.7.11.6 Compare how transverse and longitudinal waves are produced and transmitted SPI 7.7.11.5 Compare and contrast the different parts of a wave
		GLE 0707.11.5 Compare and contrast the basic parts of a wave	I can...explain why waves travel at different speeds. I can...explain how waves can reflect from some surfaces. I can...explain how waves change	SPI 7.7.11.6 Compare how transverse and longitudinal waves are produced and transmitted SPI 7.7.11.5 Compare and contrast

			direction when they move from one material into another. I can...describe how waves are able to bend around barriers.	the different parts of a wave
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		GLE 7.7.7.2 Summarize the basic events that occur during the rock cycle	I can...explain how extrusive and intrusive rocks are different. I can...explain how different types of sedimentary rocks are formed.	SPI 7.7.7.2 Label a diagram that depicts the three different rock types
		GLE 7.7.7.2 Summarize the basic events that occur during the rock cycle	I can...describe the conditions needed for metamorphic rock to form. I can...explain how all rocks are linked by the rock cycle.	SPI 7.7.7.3 Identify the major processes that drive the rock cycle
		GLE 7.7.7.4 Explain how earthquakes, mountain building, volcanoes, and sea floor spreading are associated with movements of the earth's major plates.	I can...describe the hypothesis of continental drift. I can...identify evidence supporting continental drift. I can...explain seafloor spreading.	SPI 7.7.7.4 Differentiate among the characteristics of earth's three layers.
		GLE 7.7.7.4 Explain how earthquakes, mountain building, volcanoes, and sea floor spreading are associated with movements of the earth's major plates.	I can...recognize how age and magnetic clues support seafloor spreading.	SPI 7.7.7.5 Recognize that lithospheric plates on the scale of continents and oceans continually move at rates of centimeters per year.
		GLE 7.7.7.4 Explain how earthquakes, mountain building, volcanoes, and sea floor spreading are associated with movements of the earth's major plates.	I can...compare and contrast the characteristics of earth's different layers. I can...compare and contrast different types of plate boundaries.	SPI 7.7.7.5 Recognize that lithospheric plates on the scale of continents and oceans continually move at rates of centimeters per year.

		GLE 7.7.7.4 Explain how earthquakes, mountain building, volcanoes, and sea floor spreading are associated with movements of the earth's major plates.	I can...explain how heat inside Earth causes plate boundaries. I can...recognize features caused by plate tectonics	SPI 7.7.7.6 Describe the relationship between plate movements and earthquakes, mountain building, volcanoes, and sea floor spreading
		GLE 7.7.7.4 Explain how earthquakes, mountain building, volcanoes, and sea floor spreading are associated with movements of the earth's major plates.	I can...explain how earthquakes are caused by a buildup of strain in earth's crust. I can...compare and contrast primary, secondary, and surface waves	SPI 7.7.7.6 Describe the relationship between plate movements and earthquakes, mountain building, volcanoes, and sea floor spreading
		GLE 7.7.7.4 Explain how earthquakes, mountain building, volcanoes, and sea floor spreading are associated with movements of the earth's major plates.	I can...explain how volcanoes can affect people. I can...describe how types of materials are produced by volcanoes. I can...compare how three different volcano forms develop.	SPI 7.7.7.6 Describe the relationship between plate movements and earthquakes, mountain building, volcanoes, and sea floor spreading
		GLE 7.7.7.6 Evaluate how human activities affect the earth's land, oceans, and atmosphere	I can...compare renewable and nonrenewable resources. I can...list uses of fossil fuels. I can...identify alternatives to fossil fuel use.	SPI 7.7.7.7 Analyze and evaluate the impact of man's use of earth's land, water, and atmospheric resources
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			GLE 0707.1.1 Make observations and describe the structure and function of organelles found in plant and animal cells.	I can...compare and contrast prokaryotic and eukaryotic cells. I can...identify names and functions of each part of a cell.	7.7.1.1 Identify and describe the function of the major plant and animal cell organelles.
			GLE 0707.1.1 Make observations and describe the structure and function of organelles found in plant and animal cells.	I can...identify names and functions of each part of a cell.	7.7.1.1 Identify and describe the function of the major plant and animal cell organelles.
			GLE 0707.1.2 Summarize how the different levels of organization are integrated within living systems. GLE 0707.1.3 Describe the function of different organ systems and how collectively they enable complex multicellular organisms to survive.	I can... compare tissues, organs, and organ systems. I can...summarize the discoveries that led to the development of the cell theory. I can...explain how the processes of diffusion and osmosis move molecules in living cells.	7.7.1.2 Interpret a chart to explain the integrated relationships that exist among cells, tissues, organs, and organ systems. 7.7.1.3 Explain the basic functions of a major organ system.
			GLE 0707.1.4 Illustrate how cell division occurs in sequential stages to maintain the chromosome number of a species. GLE 0707.1.5 Observe and explain how materials move through simple diffusion. GLE 0707.3.1 Distinguish between the basic features of photosynthesis and respiration	I can...explain how passive transport and active transport differ. I can...list the differences between producers and consumers. I can...explain how the processes of photosynthesis and cellular respiration store and release energy. I can...describe how cells get energy from glucose through fermentation.	7.7.1.4 Sequence a series of diagram that depict chromosome movement during plant cell division. 7.7.3.1 Compare the chemical compounds that make the reactants and products of photosynthesis and respiration.
			GLE 0707.3.2 Investigate the exchange of oxygen and carbon dioxide between living things and the environment.	I can...explain why mitosis is important. I can...examine the steps of mitosis. I can...compare mitosis in plants and animal cells.	7.7.3.2 Interpret a diagram to explain how oxygen and carbon dioxide are exchanged between living things and the environment.

		0707.4.2 Demonstrate an understanding of sexual reproduction in flowering plants	I can...list two examples of asexual reproduction. I can...describe the stages of meiosis and how sex cells are produced. I can...explain why meiosis is needed for sexual reproduction. I can...name the cells that are involved in fertilization. I can...explain how fertilization occurs in sexual reproduction.	0707.4.3 Describe various methods of plants pollination.
		0707.4.2 Demonstrate an understanding of sexual reproduction in flowering plants	I can...describe the structure and function of the flower.	0707.4.3 Describe various methods of plants pollination.
		0707.1.2 Summarize how different levels of organization are integrated within living systems	I can... compare and contrast vascular and nonvascular. I can...compare and contrast angiosperm and gymnosperm.	7.7.4.2 Match flower parts with their reproductive functions.
		707.4.2 Demonstrate an understanding of sexual reproduction in flowering plants.	I can...distinguish between the two types of plant reproduction.	0707.4.3 Describe various methods of plants pollination.
		0707.4.2 Demonstrate an understanding of sexual reproduction in flowering plants.	I can...describe the two stages in a plants life cycle. I can...examine the life cycles of a moss and a fern.	0707.4.3 Describe various methods of plants pollination.
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		Predict the probability of appearance of offspring based on the genetic characteristics of the parents.	I can... use a Punnett Square to predict the probable outcome of offspring.	0707.4.4
		ALL TN STANDARDS	I can...review for the State Assessment.	ALL TESTED SPI'S
		ALL TN STANDARDS	I can...review for the State	ALL TESTED SPI'S

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			Assessment..	
		ALL TN STANDARDS	I can...review for the State Assessment.	ALL TESTED SPI'S
		ALL TN STANDARDS	I can...review for the State Assessment.	ALL TESTED SPI'S
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		ALL TN STANDARDS	I can TEST State Assessment??	ALL TESTED SPI'S
		Summarize how the different levels of organization are integrated within living systems	I can identify the characteristics of animas. I can differentiate between vertebrates and invertebrates.	0707.1.2
		Summarize how the different levels of organization are integrated within living systems	I can explain how the symmetry of animals differs.	0707.1.2
		Summarize how the different levels of organization are integrated within living systems	I can classify vertebrate animals. I can explain the differences between vertebrate animals.	0707.1.2