

# 7<sup>th</sup> Grade Science Pacing Guide/ Timeline

State Standard	"I Can"	9 Weeks	Chapter	T	M
<b>Benchmark 1 (Sept 14-18)</b>					
<b><u>SPI 0707.Inq.1</u></b> Design a simple experimental procedure with an identified control and appropriate variables.	<ul style="list-style-type: none"> <li>I can design a simple experiment. (P)</li> <li>I can define the terms control and variable. (K)</li> <li>I can identify the control and variables in an experiment. (K)</li> </ul>	1	1		
<b><u>SPI 0707.Inq.2</u></b> Select tools and procedures needed to conduct a moderately complex experiment.	<ul style="list-style-type: none"> <li>I can match laboratory tools with their appropriate function. (K)</li> <li>I can choose the appropriate tools and procedures for an experiment. (K, S)</li> </ul>	1	1		
<b><u>SPI 0707.Inq.3</u></b> Interpret and translate data in a table, graph, or diagram.	<ul style="list-style-type: none"> <li>I can define the words interpret and translate. (K)</li> <li>I can construct a graph when given a set of data. (P)</li> <li>I can answer questions using a graph as text evidence. (R, S)</li> </ul>	1	1		
<b><u>SPI 0707.Inq.4</u></b> Draw a conclusion that establishes a cause and effect relationship supported by evidence.	<ul style="list-style-type: none"> <li>I can define the terms conclusion and cause and effect. (K)</li> <li>I can use evidence to draw a conclusion. (S)</li> <li>I can use evidence to identify the cause and effect. (K, R, S)</li> </ul>	1	1		
<b><u>SPI 0707.Inq.5</u></b> Identify a faulty interpretation of data that is due to bias or experimental error.	<ul style="list-style-type: none"> <li>I can define the term bias. (K)</li> <li>I can analyze data and identify bias and experimental error. (K, R, S)</li> <li>I can define terms accurate and precise. (K)</li> </ul>	1	1		
<b><u>SPI 0707.T/E.1</u></b> Identify the tools and procedures needed to test the design features of a prototype.	<ul style="list-style-type: none"> <li>I can define the term prototype. (K)</li> <li>I can match laboratory tools with their appropriate function. (K)</li> <li>I can build, test, and evaluate a working prototype. (R, S, P)</li> </ul>	1	1		
<b><u>SPI 0707.T/E.2</u></b> Evaluate a protocol to determine if the engineering design process was successfully applied.	<ul style="list-style-type: none"> <li>I can identify and explain the steps of the Engineering Design Process. (K, R)</li> </ul>				

	<ul style="list-style-type: none"> <li>I can define the term protocol. (K)</li> <li>I can evaluate a protocol to determine if the engineering design process was successfully applied.</li> <li>I can define the term cost-benefit analysis.</li> </ul>	1	1		
<b>SPI 0707.T/E.3</b> Distinguish between the intended benefits and the unintended consequences of a new technology.	<ul style="list-style-type: none"> <li>Define the terms intended benefit and unintended consequence. (K)</li> <li>I can identify examples of intended benefits/unintended consequences of a technology. (K, R, S)</li> </ul>	1	1		
<b>SPI 0707.T/E.4</b> Differentiate between adaptive and assistive engineered products (e.g., food, biofuels, medicines, integrated pest management).	<ul style="list-style-type: none"> <li>I can define the term differentiate. (K)</li> <li>I can define the terms adaptive and assistive. (K)</li> <li>Differentiate between adaptive and assistive engineered products. I</li> <li>I can classify a technology as an example of bioengineering. (R, S)</li> </ul>	1	1		
<b>Benchmark 2 (Oct 26-30)</b>					
<b>SPI 0707.1.1</b> Identify and describe the function of the major plant and animal cell organelles.	<ul style="list-style-type: none"> <li>I can draw and accurately label a plant and animal cell. (K, S)</li> <li>I can create a physical model a plant/animal cell. (S, P)</li> <li>I can compare the functions of cell organelles to dissimilar object/character/unit. (P)</li> <li>I can use a microscope to examine different examples of cells. (K)</li> <li>I can match cell organelles with their appropriate function. (K, S)</li> <li>I can Identify and describe the function of the major plant and animal cell organelles. (K, R)</li> </ul>	1	2		
<b>SPI 0707.1.2</b> Interpret a chart to explain the integrated relationships that exist among cells, tissues, organs, and organ systems.	<ul style="list-style-type: none"> <li>I can summarize the levels of organization of life. (K)</li> <li>I can create a leveled diagram showing the levels of organization. (K)</li> </ul>	1	2		
<b>SPI 0707.1.5</b> Explain how materials move through simple diffusion.	<ul style="list-style-type: none"> <li>I can define the term concentration. (K)</li> <li>I can define the term semipermeable membrane. (K)</li> <li>I can identify regions of high concentration and regions of low concentration. (K)</li> <li>I can predict the movement of a given substance</li> </ul>	2	3		

	<p>across a semipermeable membrane. I</p> <ul style="list-style-type: none"> <li>I can design an experiment that demonstrates simple diffusion. (R, S, P)</li> </ul>				
<p><b>SPI 0707.3.1</b> Compare the chemical compounds that make up the reactants and products of photosynthesis and respiration.</p>	<ul style="list-style-type: none"> <li>I can define the terms reactants, products, photosynthesis, and respiration. (K)</li> <li>I can identify the reactants and products of photosynthesis and cellular respiration. (K, R)</li> <li>I can correctly write the formulas for photosynthesis and cellular respiration. (K)</li> <li>I can use mnemonic devices to correctly sequence reactants and products of photosynthesis and cellular respiration. (K, R, S)</li> <li>I can use laboratory tools to examine the cellular structures associated with gas exchange. (K, R, S, P)</li> <li>I can use physical models to represent the reactants and products of photosynthesis and cellular respiration. (K, R, S, P)</li> </ul>	2	3		
<p><b>SPI 0707.3.2</b> Interpret a diagram to explain how oxygen and carbon dioxide are exchanged between living things and the environment.</p>	<ul style="list-style-type: none"> <li>I can identify the cellular organelles associated with photosynthesis and cellular respiration. (K)</li> <li>I can identify which organisms perform photosynthesis and which organisms perform cellular respiration. (K)</li> <li>I can draw a diagram representing carbon dioxide/oxygen exchange. (K, R, S, P)</li> </ul>	2	3		
<h2>Benchmark 3 (Dec 7-11)</h2>					
<p><b>SPI 0707.1.4</b> Sequence a series of diagrams that depict chromosome movement during plant cell division.</p>	<ul style="list-style-type: none"> <li>I can sequence diagrams showing the steps of mitosis. (K)</li> <li>I can use a physical model to represent chromosome movement during mitosis. (K, R, S, P)</li> </ul>	2	3		
<p><b>SPI 0707.4.1</b> Classify methods of reproduction as sexual or asexual.</p>	<ul style="list-style-type: none"> <li>I can define the terms sexual and asexual reproduction. (K)</li> <li>I can classify organisms based on how they reproduce. (R, S)</li> </ul>	2	4		

	<ul style="list-style-type: none"> <li>I can classify methods of reproductions (budding, fragmentations, regeneration, flowering) as sexual or asexual reproduction.</li> <li>I can compare the genetic makeup of the offspring to the genetic make-up of the parent as the result of sexual/asexual reproduction. (K, R, S, P)</li> </ul>				
<b>SPI 0707.4.2</b> Match flower parts with their reproductive functions.	<ul style="list-style-type: none"> <li>I can draw and label the reproductive structures of a flowering plant. (K)</li> <li>I can associate flowering plants with sexual reproduction. (K)</li> <li>I can use laboratory tools to examine the reproductive structures of an actual flower. (K, R, S, P)</li> <li>I can use various materials to construct and label a physical model of a flowering plant. (K, R, S, P)</li> </ul>	2	4		
<b>SPI 0707.4.3</b> Describe the relationship among genes, chromosomes, and inherited traits.	<ul style="list-style-type: none"> <li>I can define the terms genes, chromosomes, and traits. (K)</li> <li>I can describe the relationship among genes, chromosomes, and inherited traits. (K, R)</li> </ul>	2	4		
<b>Benchmark 4 (Feb 8-12)</b>					
<b>SPI 0707.4.4</b> Interpret a Punnett square to predict possible genetic combinations passed from parents to offspring during sexual reproduction.	<ul style="list-style-type: none"> <li>I can predict the genotype of offspring using a Punnett square. (R)</li> <li>I can predict the mathematical likelihood of a specific genotype/ phenotype given the cross between given genotypes. (R, S, P)</li> </ul>	2	4		
<b>SPI 0707.1.3</b> Explain the basic functions of a major organ system.	<ul style="list-style-type: none"> <li>I can identify the major organ systems. (K)</li> <li>I can match organ systems with their corresponding diagram. (K)</li> <li>I can match the organ systems with their corresponding functions. (K)</li> <li>I can interrelate the functions of 2 organ systems and how they are interdependent. I</li> <li>I can create a physical model of an organ system. (P)</li> </ul>	3	8-12		
<b>SPI 0707.7.1</b> Use a table of physical properties to classify minerals.	<ul style="list-style-type: none"> <li>I can define the term mineral. (K)</li> <li>I can identify physical/ chemical properties of</li> </ul>	3	13		

	<ul style="list-style-type: none"> <li>minerals. (K)</li> <li>I can use Moh's Hardness Scale to identify the hardness of a mineral sample. (K)</li> <li>I can use a series of physical tests to determine the identify of an unknown mineral. (K, R, S,P)</li> </ul>				
<b>SPI 0707.7.7</b> Analyze and evaluate the impact of man's use of earth's land, water, and atmospheric resources.	<ul style="list-style-type: none"> <li>I can evaluate the impact of man's use of earth's land, water, and atmospheric resources. (R)</li> <li>I can describe the importance of recycling. (K)</li> </ul>	3	13		
<b>SPI 0707.7.2</b> Label a diagram that depicts the three different rock types.	<ul style="list-style-type: none"> <li>I can identify the 3 types of rocks (sedimentary, metamorphic, igneous). (K)</li> <li>I can explain the formation of each rock type. (K, R, S)</li> <li>I can label a diagram that depicts the three different rock types. (K)</li> </ul>	3	14		
<b>SPI 0707.7.3</b> Identify the major processes that drive the rock cycle.	<ul style="list-style-type: none"> <li>I can explain the terms weathering, erosion, heat and pressure, melting, cooling, compaction and cementation. (K, R)</li> <li>I can associate each process with the appropriate rock type. (R)</li> </ul>	3	14		
<b>Benchmark 5 (Mar 21-24)</b>					
<b>SPI 0707.7.4</b> Differentiate among the characteristics of the earth's three layers.	<ul style="list-style-type: none"> <li>I can draw and label a diagram depicting the 3 layers of the earth.</li> <li>I can identify the characteristics of each layer. (K)</li> </ul>	3	15		
<b>SPI 0707.7.5</b> Recognize that lithospheric plates on the scale of continents and oceans continually move at rates of centimeters per year.	<ul style="list-style-type: none"> <li>I can describe the rate at which lithospheric plates move as cm/year. (K, S)</li> </ul>	4	15		
<b>SPI 0707.7.6</b> Describe the relationship between plate movements and earthquakes, mountain building, volcanoes, and sea floor spreading.	<ul style="list-style-type: none"> <li>I can explain the theories of Plate Tectonics, Sea-Floor Spreading, and Continental Drift. (K, R)</li> <li>I can draw and describe the 3 types of plate boundaries (diverging, converging, and transform). (K, S)</li> <li>I can explain how plate movement creates each of the following: earthquakes, volcanoes, mountains, and mid-ocean ridges.</li> </ul>	4	15-17		

	<ul style="list-style-type: none"> <li>I can infer as to what past geological processes created various landforms. (R)</li> </ul>				
<b>SPI 0707.11.3</b> Apply proper equations to solve basic problems pertaining to distance, time, speed, and velocity.	<ul style="list-style-type: none"> <li>I can use mathematical equations to calculate distance, time, speed (rate), and velocity. (R, S)</li> <li>I can use laboratory tools to collect data and then calculate distance, time, speed (rate), and velocity. (S)</li> </ul>	4	19-20		
<b>SPI 0707.11.4</b> Identify and explain how Newton's laws of motion relate to the movement of objects.	<ul style="list-style-type: none"> <li>I can summarize Newton's three laws of motion. (K)</li> <li>I can apply the correct law of motion to a given real-world example. (S)</li> <li>I can use laboratory tools to demonstrate Newton's laws of motion. (R, S)</li> </ul>	4	19-20		
<b>After Benchmark 5</b>					
<b>SPI 0707.11.1</b> Differentiate between the six simple machines.	<ul style="list-style-type: none"> <li>I can define the term differentiate. (K)</li> <li>I can identify the 6 simple machines. (K)</li> <li>I can identify examples of each of the 6 simple machines. (K)</li> <li>I can demonstrate and explain how each simple machine makes work easier.</li> </ul>	4	21		
<b>SPI 0707.11.2</b> Determine the amount of force needed to do work using different simple machines.	<ul style="list-style-type: none"> <li>I can use mathematical equations to calculate force and work. (R, S)</li> </ul>	4	21		
<b>SPI 0707.11.5</b> Compare and contrast the different parts of a wave.	<ul style="list-style-type: none"> <li>I can draw and label a transverse and longitudinal wave. (K)</li> </ul>	4	22		
<b>SPI 0707.11.6</b> Differentiate between transverse and longitudinal waves in terms of how they are produced and transmitted.	<ul style="list-style-type: none"> <li>I can identify a wave as transverse or longitudinal. (K)</li> <li>I can use laboratory equipment to produce waves and demonstrate how they are produced and move. (K, R, S, P)</li> </ul>	4	22		