

5th Grade Science Pacing Guide First Semester 2018 - 2019

5.PS1: Matter and its Interactions

5.PS2: Motion and Stability: Forces and Interactions

Tn Science Reference Standards https://www.tn.gov/content/dam/tn/education/standards/sci/sci_standards_reference.pdf

Science Training Resources

<https://drive.google.com/drive/mobile/folders/1v0mTNaUwttvRwFUw1wLzuDBGi8dCVCmj>

1 st Quarter	Instructional Days	TN Standards	Lesson Focus	Additional Notes
Week 1: August 13 - 17	5	<p>5.ETS1.1 Research, test, re-test, and communicate a design to solve a problem.</p> <p>5.ETS1.2 Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype.</p>	Engineering Design Process:	<p>https://mysteryscience.com/forces/mystery-5/magnets-engineering/151?r=906761#slide-id-0</p> <p>https://www.sciencebuddies.org/teacher-resources/lesson-plans/paper-airplane-engineering-design#lesson (pdf in Schoology)</p> <p>1.2 Stem Boat (in Schoology)</p>
Week 2: August 20 - 24	5	<p>5.PS1.1 - Analyze and interpret data from observations and measurements of the physical properties of matter to explain phase changes between a solid, liquid, or gas.</p> <p>5.PS1.2 - Analyze and interpret data to show that the amount of matter is conserved even when it changes form, including transitions where matter seems to vanish.</p>	<p>https://www.discoveryeducation.com/</p> <p>UNIT: Chemical and Physical Changes Concept: Changing States</p>	<p>https://thewonderofscience.com/5-matter-structure-and-properties Tennessee Training Lesson: https://drive.google.com/drive/folders/1aTnwOBeZHwrJdxroBXyw_qjsRvAQJ5z</p> <p>Brainpop: Property Changes; States of Matter; Conservation of Mass</p>
Week 3: August 27 - 31	5	<p>5.PS1.3 - Design a process to measure how different variables (temperature, particle size, stirring) affect the rate of dissolving solids into liquids.</p>	<p>https://www.discoveryeducation.com/</p> <p>UNIT: Chemical and Physical Changes Concept: Solutions</p>	<p>https://mysteryscience.com/chemistry/chemical-reactions-properties-of-matter</p> <p>Brainpop: Compounds and Mixtures</p>
Week 4: Sept. 3 - 7	4	<p>5.PS1.4 - Evaluate the results of an experiment to determine whether the mixing of two or more substances result in a change of properties.</p>	<p>https://www.discoveryeducation.com/</p> <p>UNIT: Chemical and Physical Changes Concept: Types of Mixtures</p>	<p>https://mysteryscience.com/chemistry/chemical-reactions-properties-of-matter</p>
Week 5: Sept. 10 - 14	5	<p>5.PS1.2 - Analyze and interpret data to show that the amount of matter is conserved even when it changes form, including transitions where matter seems to vanish.</p> <p>5.PS1.4 - Evaluate the results of an experiment to determine whether the mixing of two or more substances result in a change of properties.</p>	<p>https://www.discoveryeducation.com/</p> <p>UNIT: Chemical and Physical Changes Concept: Chemical Changes</p>	<p>https://mysteryscience.com/chemistry/chemical-reactions-properties-of-matter</p>
Week 6: September 17 - 21	4	<p>5.PS2.1 - Test the effects of balanced and unbalanced forces on the speed and direction of motion of objects.</p>	<p>https://www.discoveryeducation.com/</p>	<p>https://thewonderofscience.com/5ps21</p>

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		<p>5.PS2.2 - Make observations and measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.</p> <p>5.PS2.5 - Explain how forces can create patterns within a system (moving in one direction, shifting back and forth, or moving in cycles), and describe conditions that affect how fast or slowly these patterns occur.</p>	<p>UNIT: Direction and Force Concept: Changing Direction</p>	<p>Tennessee Training Lesson: https://drive.google.com/drive/folders/1LP0P4mgX1_Xsa5xBcb74ab2Ktfg9PCXI Tennessee Training Lesson: https://drive.google.com/drive/folders/1gR6SvYdmcm6t6lGidZhEsZ_XvjPnevR9</p> <p>https://mysteryscience.com/forces/forces-motion-magnets</p> <p>https://mysteryscience.com/energy/energy-motion-electricity</p> <p>https://www.sciencebuddies.org/teacher-resources/lesson-plans/two-stage-balloon-rocket#summary</p>
Week 7: September 24 - 28	5	<p>5.PS2.2 - Make observations and measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.</p> <p>5.PS2.3 - Use evidence to support that the gravitational force exerted by Earth on objects is directed toward the Earth's center.</p>	<p>https://www.discoveryeducation.com/</p> <p>UNIT: Direction and Force Concept: Gravity</p>	<p>https://www.sciencebuddies.org/teacher-resources/lesson-plans/modeling-gravity#summary</p> <p>http://www.apwschools.org/tfiles/folder534/Science%20Grade%205%20Unit%202.pdf</p> <p>https://thewonderofscience.com/5ps21</p>
Week 8: Oct. 1 - 5	5	<p>5.PS2.4 - Explain the cause and effect relationship of two factors (mass and distance) that affect gravity.</p> <p>5.PS2.5 - Explain how forces can create patterns within a system (moving in one direction, shifting back and forth, or moving in cycles), and describe conditions that affect how fast or slowly these patterns occur.</p>	<p><i>Continue—</i> UNIT: Direction and Force Concept: Gravity</p>	<p>Nearpod: https://nearpod.com/s/science/8th-grade/mass-and-weight-L38382654 Nearpod: https://nearpod.com/s/science/4th-grade/gravity-for-kids-L35352604</p>
FALL Break (October 8-12)				
Week 9: October 15 - 19	5	<p>5.ETS1.1 - Research, test, re-test, and communicate a design to solve a problem.</p> <p>5.ETS1.2 - Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype.</p> <p>5.ETS1.3 - Describe how failure provides valuable information toward finding a solution.</p> <p>5.ETS2.1 - Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology.</p> <p>5.ETS2.3 - Identify how scientific discoveries lead to new and improved technologies.</p>	<p>https://www.discoveryeducation.com/</p> <p>UNIT: Materials Concept: Building with Materials</p>	<p>Lego We-Do Earthquake Unit</p>
5.LS1: From Molecules to Organisms: Structures and Processes				

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2 nd Quarter	Instructional Days	TN Standards	Lesson Focus	Additional Notes
Week 1: Oct. 22 - 26	5	<p>5.ETS2.2 Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently.</p> <p>5.LS1.1 Compare and contrast animal responses that are instinctual versus those that are gathered through the senses, processed, and stored as memories to guide their actions.</p>	<p>https://www.discoveryeducation.com/</p> <p>Unit: Using the Senses Concept: Receiving and Using Information</p>	<p>https://thewonderofscience.com/4ls12-phenomena</p>
Week 2: Oct. 29 - Nov. 2	5	<p>5.ETS2.2 Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently.</p> <p>5.LS1.1 Compare and contrast animal responses that are instinctual versus those that are gathered through the senses, processed, and stored as memories to guide their actions.</p>	<p><i>Continued--</i> Unit: Using the Senses Concept: Using and Receiving Information</p>	
Week 3: November 5 - 9	5	<p>5.LS3.2 Provide evidence and analyze data that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms.</p>	<p>https://www.discoveryeducation.com/</p> <p>Unit: Characteristics and the Environment Concept: Similarities of Parents and Offspring</p>	<p>http://learn.genetics.utah.edu/content/basics/</p>
Week 4: November 12 - 16	5	<p>5.LS3.1 Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Apply this concept by giving examples of characteristics of living organisms that are influenced by both inheritance and the environment.</p>	<p>https://www.discoveryeducation.com/</p> <p>Unit: Characteristics and the Environment Concept: Adaptation</p>	<p>http://learn.genetics.utah.edu/content/basics/traits/</p>
Thanksgiving Break (November 19-23)				
Week 5: November 26 - 30	5	<p>5.LS4.1 Analyze and interpret data from fossils to describe types of organisms and their environments that existed long ago. Compare similarities and differences of those to living organisms and their environments. Recognize that most kinds of animals (and plants) that once lived on Earth are now extinct.</p>	<p>https://www.discoveryeducation.com/</p> <p>Unit: Characteristics and the Environment Concept: Extinction</p>	<p>Tennessee Training Lesson: https://drive.google.com/drive/folders/1cBL5cFA_E_bdt2atQZKHZTPLY51uj5a</p>
Week 6: December 3 - 7	5	<p>5.ESS1.7 Use evidence from the presence and location of fossils to determine the order in which rock strata were formed.</p>	<p>https://www.discoveryeducation.com/</p> <p>Unit: Aging Earth Concept: Rock Dating</p>	<p>https://www.amnh.org/ology/features/layersoftime/game.php</p>
Week 7: December 10 - 14	5	<p>5.ETS2.2 Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently.</p>	<p><i>Continued--</i> Unit: Aging Earth Concept: Rock Dating</p>	<p>http://pirate.shu.edu/~schoenma/rockCycleWeb/pdfFiles/IntroRockLayerCake.pdf</p>

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Week 8: December 17 - 21	4.5	<p>5.ETS1.1 - Research, test, re-test, and communicate a design to solve a problem.</p> <p>5.ETS1.2 - Plan and carry out tests on one or more elements of a prototype in which variables are controlled and failure points are considered to identify which elements need to be improved. Apply the results of tests to redesign the prototype.</p> <p>5.ETS1.3 - Describe how failure provides valuable information toward finding a solution.</p> <p>5.ETS2.1 - Use appropriate measuring tools, simple hand tools, and fasteners to construct a prototype of a new or improved technology.</p> <p>5.ETS2.3 - Identify how scientific discoveries lead to new and improved technologies.</p>	<p>https://www.discoveryeducation.com/</p> <p>UNIT: Materials Concept: Building with Materials</p>
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Winter Break (December 24 – January 4)

5th Grade Science Pacing Guide Second Semester 2018 - 2019

5.ESS1: Earth’s Place in the Universe

3 rd Quarter	Instructional Days	TN Standards	Lesson Focus	Additional Notes
Week 1: January 7 - 11	5	5.ESS1.1 Explain that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth. the Earth.	<p>https://www.discoveryeducation.com/</p> <p>Unit: Stars and the Universe Concept: Our Star the Sun</p>	<p>https://thewonderofscience.com/5ess11</p> <p>https://www.history.com/shows/the-universe Tennessee Training Lesson: https://drive.google.com/drive/folders/1uvHuAlhoa_c4ffjpxl6s4cpAwnPMI37g</p>
Week 2: January 14 - 18	5	5.ESS1.4 Explain the cause and effect relationship between the positions of the sun, earth, and moon and resulting eclipses, position of constellations, and appearance of the moon. 5.ESS1.6 Use tools to describe how stars and constellations appear to move from the Earth’s perspective throughout the seasons.	<p>https://www.discoveryeducation.com/</p> <p>Unit: Stars and the Universe Concept: Constellations</p>	<p>Tennessee Training Lesson: https://drive.google.com/drive/folders/16ZW8h3WGat0y_ecUMtvlg2o8qvii6D-S</p> <p>Total Lunar Eclipse, Sunday, January 20th 11:12 pm.</p>
Week 3: January 21 - 25	4	5.ESS1.4 Explain the cause and effect relationship between the positions of the sun, earth, and moon and resulting eclipses, position of constellations, and appearance of the moon. 5.ESS1.6 Use tools to describe how stars and constellations appear to move from the Earth’s perspective throughout the seasons.	<p>https://www.discoveryeducation.com/</p> <p>Unit: Stars and the Universe Concept: Constellations</p>	<p>http://www.skymaps.com/</p>
Week 4: Jan. 28 - Feb.1	5	5.ESS1.3 Use data to categorize different bodies in our solar system including moons, asteroids, comets, and meteoroids according to their physical properties and motion.	<p>https://www.discoveryeducation.com/</p> <p>Unit: Stars and the Universe Concept: Non-planetary Objects</p>	<p>Tennessee Training Lesson: https://drive.google.com/drive/folders/1pGFkb-541YY10pp8R7sugw_PNJfF1BWQ</p>
Week 5: February 4 - 8	5	5.ETS2.2 Describe how human beings have made tools and machines (X-ray cameras, microscopes, satellites, computers) to	<p><i>Continued—</i></p> <p>Unit: Stars and the Universe</p>	<p>Tennessee Training Lesson: https://drive.google.com/drive/folders/1cRosF</p>

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		observe and do things that they could not otherwise sense or do at all, or as quickly or efficiently.	Concept: Non-planetary Objects	pg5okseHdtQxG3gcHkb90cm--6T
Week 6: February 11 - 15	5	5.ESS1.2 Research and explain the position of the Earth and the solar system within the Milky Way galaxy, and compare the size and shape of the Milky Way to other galaxies in the universe.	https://www.discoveryeducation.com/ Unit: Stars and the Universe Concept: Galaxies	Mystery Science: Why does the moon change shape?
Week 7: February 18 - 22	4	5.ESS1.4 Explain the cause and effect relationship between the positions of the sun, earth, and moon and resulting eclipses, position of constellations, and appearance of the moon. 5.ESS1.5 Relate the tilt of the Earth's axis, as it revolves around the sun, to the varying intensities of sunlight at different latitudes. Evaluate how this causes changes in day-lengths and seasons.	https://www.discoveryeducation.com/ Unit: Moving Earth The Seasons	https://thewonderofscience.com/5ess12 Mystery Science: Why do the stars change with the seasons?
Week 8: Feb. 25 - March 1	5	5.ESS1.4 Explain the cause and effect relationship between the positions of the sun, earth, and moon and resulting eclipses, position of constellations, and appearance of the moon. 5.ESS1.5 Relate the tilt of the Earth's axis, as it revolves around the sun, to the varying intensities of sunlight at different latitudes. Evaluate how this causes changes in day-lengths and seasons.	https://www.discoveryeducation.com/ Unit: Moving Earth Concept: Phases of the Moon	http://www.harcourtschool.com/activity/moon_phases/
Week 9: March 4 - 8	5	5.ESS1.4 Explain the cause and effect relationship between the positions of the sun, earth, and moon and resulting eclipses, position of constellations, and appearance of the moon.	https://www.discoveryeducation.com/ Unit: Moving Earth Concept: Eclipses	
Spring Break (March 11 – 15)				
4th Quarter	Instructional Days	TN Standards	Lesson Focus	Additional Notes
Week 1: March 18 - 22	5	5.PS1: Matter and its Interactions 5.PS2: Motion and Stability: Forces and Interactions	Physical Science	
Week 2: March 25 - 29	5	5.LS1: From Molecules to Organisms: Structures and Processes 5.LS3-Heredity: Inheritance and Variation of Traits 5.LS4-Biological Change: Unity and Diversity	Life Science	
Week 3: April 1 - 5	5	5.ESS1 - Earth's Place in the Universe	Earth Science	
Week 4: April 8 - 12	5	ETS1: Engineering Design ETS2: Links Among Engineering, Technology, Science, and Society ETS3: Applications of Science	Engineering Design Process	
Week 5: April 15 - 19	4	All TN Academic Standards	State Testing	
Week 6: April 22 - 26	5	All TN Academic Standards	State Testing	

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Week 7: April 29 - May 3	5	ETS1: Engineering Design ETS2: Links Among Engineering, Technology, Science, and Society ETS3: Applications of Science	STEM PROJECTS	http://pbskids.org/designsquad/parentseducators/lesson-plans/engineering_design_process.html
Week 8: May 6 - 10	5	Family Life	Family Life	
Week 9: May 13 - 17	5	ETS1: Engineering Design ETS2: Links Among Engineering, Technology, Science, and Society ETS3: Applications of Science	STEM PROJECTS	http://pbskids.org/designsquad/parentseducators/lesson-plans/engineering_design_process.html
Week 10: May 20 - 24	4.5	ETS1: Engineering Design ETS2: Links Among Engineering, Technology, Science, and Society ETS3: Applications of Science	STEM PROJECTS	http://pbskids.org/designsquad/parentseducators/lesson-plans/engineering_design_process.html

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