

**5<sup>th</sup> Grade Science Curriculum**  
**5<sup>th</sup> Grade Life Science Nine Week Curriculum Guide**

Developed Summer 2009

Academic Vocabulary: cell, cell membrane, cytoplasm, nucleus, cell wall, predator, prey, mutualism, commensalism, parasitism, photosynthesis, heredity, inherited trait, adaptation, relative age

Grade Level Expectations (GLEs)	Sample Essential Questions	Resources  Science Safety Information	Common Experiences (or equivalent lesson)	Checks for Understanding	Integrations/Connections including Inquiry and Technology and Engineering (* used continually throughout the curriculum.)
<b>Standard 1 – Cells</b> Conceptual Strand 1: <i>All living things are made of cells that perform functions necessary for life.</i>			Time Frame: 1 <sup>st</sup> 9 weeks Guiding Question 1: <i>How are plant and animals cells organized to carry on the processes of life?</i>		
<b>GLE 0507.1.1</b> Distinguish between the basic structures and functions of plant and animal cells.	What is the difference between plant and animal cell parts and the functions they do?	TE: Ch. 1, Lesson 1 pp. 26-27, 30-33 -Art Link: p. 35 -Explore: p. 27 -Quick Lab: p. 33  *GLE 0507.Inq.2 See TE: p. Tviii  Lesson Plan: “Cell Parts & Functions” <a href="http://www.accessexcellence.org/AE/AE/C/AEF/1996/fernandez_cell.php">http://www.accessexcellence.org/AE/AE/C/AEF/1996/fernandez_cell.php</a>	TE: Art Link p. 35 Cell Drawings or Model with Compare/Contrast	<b>0507.1.1</b> Label drawings of plant and animals cells.  <b>0507.1.2</b> Compare and contrast the basic structures and functions of plant and animal cells.	<b>*GLE 0507.Inq.2</b> Select and use appropriate tools and simple equipment to conduct an investigation.  Latin Root: bio Meaning: “life” Exs.: biology, biopsy, biochemist  TE-Reading Skill: Compare & Contrast  TE-Math Link: p. 35 Dividing Bacteria

		<p>Plant/Animal Cell Printables: <a href="http://www.teach-nology.com/worksheets/science/cell/">http://www.teach-nology.com/worksheets/science/cell/</a></p> <p>Lesson Plan: “The Incredible, Edible Cell”: <a href="http://www.teach-nology.com/worksheets/science/bio/lab1/">http://www.teach-nology.com/worksheets/science/bio/lab1/</a></p> <p>Cell Labeled Diagram: <a href="http://kg025.k12.sd.us/cells.htm">http://kg025.k12.sd.us/cells.htm</a></p> <p>Tour a Cell: <a href="http://learn.genetics.utah.edu/content/begin/cells/insideacell/">http://learn.genetics.utah.edu/content/begin/cells/insideacell/</a></p> <p>Brainpop.com “Cell Structures” Movie &amp; Activities</p>			
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<b>Standard 2 – Interdependence</b> Conceptual Strand 2: <i>All life is interdependent and interacts with the environment.</i>			Time Frame: 1 <sup>st</sup> 9 weeks Guiding Question 2: <i>How do living things interact with one another and with the non-living elements of their environment?</i>		
<b>GLE 0507.2.1</b> Investigate different nutritional relationships among organisms in an ecosystem.	What are the relationships of organisms in obtaining food for energy?	TE: Ch. 1, Lesson 2, pp.38-39, 42-45 -A Closer Look: p. 21 -Quick Check: pp. 45, 47, 48 -Focus on Skills: pp. 50-51 -Writing Link: p. 49 -Reading in Science: pp.120-121  Virtual Field Trip: “To Eat or Be Eaten” <a href="http://www.windowsintowonderland.org/eobe/index.shtml">http://www.windowsintowonderland.org/eobe/index.shtml</a>  Predator/Prey, Parasite/Host Background Info.: <a href="http://insected.arizona.edu/enforcers/background.html">http://insected.arizona.edu/enforcers/background.html</a>  Read Aloud: <u>Predators</u> By: John Seidensticker and Susan Lumpkin		<b>0507.2.1</b> Evaluate producer/consumer, predator/prey, and parasite/host relationships.  <b>0507.2.4</b> Analyze basic information from a body of text to identify key issues or assumptions about the relationships among organisms in an ecosystem.	TE-Reading Skill: Main Idea & Details

<p><b>GLE 0507.2.2</b> Explain how organisms interact through symbiotic, commensal, and parasitic relationships.</p>	<p>What kinds of relationships do organisms share?</p>	<p>TE: Ch. 1, Lesson 2, pp. 46-48 -A Closer Look: p. 21 -Quick Check: p. 47 -Explore: p. 39 -Art Link: p. 49 -Performance Assessment: p. 81</p> <p>“Predation, Parasitism, Commensalism, and Mutualism in the Garden” Information &amp; Examples: <a href="http://edmerks.blogspot.com/2007/09/predation-parasitism-commensalism-and.html">http://edmerks.blogspot.com/2007/09/predation-parasitism-commensalism-and.html</a></p> <p>Symbiotic Relationship Video Clip - “Hippo Spa” <a href="http://video.nationalgeographic.com/video/player/animals/mammals-animals/hippos-rhinos-tapirs/hippo_fishclean.html">http://video.nationalgeographic.com/video/player/animals/mammals-animals/hippos-rhinos-tapirs/hippo_fishclean.html</a></p> <p>“Exploring</p>	<p>TE: Explore p. 39 How do organisms in a food chain interact?</p>	<p>□<b>0507.2.2</b> Classify interspecific relationships within an ecosystem as mutualism, commensalism, or parasitism.</p> <p><b>0507.2.3</b> Create a simple model illustrating the interspecific relationships within an ecosystem.</p>	
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		Ecosystems”: <a href="http://www.harcourtschool.com/activity/exploring_ecosystems/index.html">http://www.harcourtschool.com/activity/exploring_ecosystems/index.html</a>			
<b>GLE 0507.2.3</b> Establish the connections between human activities and natural disasters and their impact on the environment.	In what ways do human activities and natural disasters impact the environment?	TE: Ch. 1, Lesson 4, pp. 64-77 -Focus on Skills: pp. 78-79 -Unit Literature: pp. 140-141, 362- 363  *GLE 0507.T/E.5 See TE: p. Tix  Read Aloud: <i>The Lorax</i> By: Dr. Seuss  Conservation Ideas: <a href="http://www.ene.gov.on.ca/en/ezone/conservation/index.php?color=yellow">http://www.ene.gov.on.ca/en/ezone/conservation/index.php?color=yellow</a> Human Consumption <a href="http://channel.nationalgeographic.com/channel/human-footprint/?email=CTW20080407">http://channel.nationalgeographic.com/channel/human-footprint/?email=CTW20080407</a> Natural Disasters: <a href="http://www.fema.gov/kids/dizarea.htm">http://www.fema.gov/kids/dizarea.htm</a>		<b>0507.2.5</b> Create a poster to illustrate how human activities and natural disasters affect the environment.	<b>*GLE 0507.T/E.5</b> Apply a creative design strategy to solve a particular problem generated by societal needs and wants.  TE-Reading Skill: Cause & Effect  TE-Writing Link: p. 77 Endangered Species  TE-Art Link: p. 7

<b>Standard 3 – Flow of Matter and Energy</b> Conceptual Strand 3: <i>Matter and energy flow through the biosphere.</i>			Time Frame: 1 <sup>st</sup> 9 weeks Guiding Question 3: <i>What scientific information explains how matter and energy flow through the biosphere?</i>		
<b>GLE 0507.3.1</b> Demonstrate how all living things rely on the process of photosynthesis to obtain energy.	How do plants use photosynthesis to obtain energy?	TE: Ch. 1, Lesson 3, pp. 52-61 -Writing in Science: p. 62 -Quick Check: p. 57 -Art Link: p. 61 -Tennessee Activity: p. 81  *GLE 0507.Inq.3 See: TE: p. Tviii  Interactive Activity: <a href="http://www.iknowthat.com/com/App?File=ScienceLab.htm&amp;Type=S&amp;SWF=photosynthesis%2Fscience_desk&amp;App=Science+Lab">http://www.iknowthat.com/com/App?File=ScienceLab.htm&amp;Type=S&amp;SWF=photosynthesis%2Fscience_desk&amp;App=Science+Lab</a>  Interactive Video: <a href="http://www.wonderiville.ca/v1/activities/photosynthesis/index.html">http://www.wonderiville.ca/v1/activities/photosynthesis/index.html</a>  Brainpop.com “Photosynthesis”	TE: Tennessee Activity p. 81 Create a Food Web	<b>0507.3.1</b> Identify the cell structures that enable plants to conduct photosynthesis.  <b>0507.3.2</b> Design a graphic organizer that illustrates the difference between plants and animals in the movement of food energy through an ecosystem.	<b>*GLE 0507.Inq.3</b> Organize data into appropriate tables, graphs, drawings, or diagrams.  TE-Reading Skill: Draw Conclusions  TE-Math Link: p. 61 Calculate Grams of Sugar  Greek Root: photo Meaning: “light” Exs: photosynthesis, photography, telephoto

<b>Standard 4 – Heredity</b> Conceptual Strand 4: <i>Plants and animals reproduce and transmit hereditary information between generations.</i>			Time Frame: 1 <sup>st</sup> 9 weeks Guiding Question 4: <i>What are the principal mechanisms by which living things reproduce and transmit information between parents and offspring?</i>		
<b>GLE 0507.4.1</b> Describe how genetic information is passed from parents to offspring during reproduction.	How is genetic information passed along during reproduction?	TE: Ch. 2, Lesson 1, pp. 88-94 -Ch. 2, Lesson 2, pp. 98-104 -Writing in Science: p. 96 -Quick Check: pp. 91, 103 -Quick Lab: p. 92 -Art Link: p. 105  <a href="http://UnitedStreaming.com">UnitedStreaming.com</a> “TLC Elementary School: Life Cycles”  Brainpop.com: “Genetics”		<b>0507.4.1</b> Explain how genetic information is transmitted from parents to offspring.  <b>0507.4.2</b> Create a chart that compares hereditary and environmental traits.	TE-Reading Skills: Summarize Main Idea & Details  TE-Math Link: p. 95 Bee Math  TE-Writing Link: p. 105 Fictional Narrative

<p><b>GLE 0507.4.2</b> Recognize that some characteristics are inherited while others result from interactions with the environment.</p>	<p>Are our characteristics from the environment or are they a result of heredity?</p>	<p>TE: Ch. 2, Lesson 2, pp. 100-101 -Quick Check: p. 101</p> <p>Variation &amp; Classification Video, Activity, Quiz: <a href="http://www.bbc.co.uk/schools/ks3bitesize/science/biology/variation_act.shtml">105http://www.bbc.co.uk/schools/ks3bitesize/science/biology/variation_act.shtml</a></p> <p>*GLE 0507.Inq.4 See TE: p. Tviii</p>	<p>TE: Quick Check p. 101 Compare/Contrast Graphic Organizer</p>	<p><b>0507.4.3</b> Distinguish between a scar and a birthmark in terms of their origins.</p>	<p><b>*GLE 0507.Inq.4</b> Identify and interpret simple patterns of evidence to communicate the findings of multiple investigations.</p>
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<b>Standard 5 – Biodiversity and Change</b> Conceptual Strand 5: <i>A rich variety of complex organisms have developed in response to a continually changing environment.</i>		Time Frame: 1 <sup>st</sup> 9 weeks Guiding Question 5: <i>How does natural selection explain how organisms have changed over time?</i>			
<b>GLE 0507.5.1</b> Investigate physical characteristics associated with different groups of animals.	What are the physical characteristics that define the different groups of animals?	TE: Ch. 2, Lesson 3, pp. 108-118 -A Closer Look: pp. 18-19 -Quick Check, p. 111 -Performance Assessment: p. 137 -Art Link: p. 119 -Quick Lab: p. 127  Interactive Activity “Classifying Critters”: <a href="http://www.hhmi.org/coolscience/forkids/critters/critters.html">http://www.hhmi.org/coolscience/forkids/critters/critters.html</a>  Classify This! Interactive Activity: <a href="http://teacher.scholastic.com/activities/explorations/bug/level1/interactive.htm">http://teacher.scholastic.com/activities/explorations/bug/level1/interactive.htm</a>  Animal Classification Hangman Game: <a href="http://www.apples4theteacher.com/hangman.html">http://www.apples4theteacher.com/hangman.html</a>		<b>0507.5.1</b> Classify animals according to their physical characteristics.  <b>0507.5.2</b> Design a model to illustrate how an animal’s physical characteristics enable it to survive in a particular environment.	TE-Reading Skill: Problem & Solution  TE-Writing Link: p. 119 Fictional Narrative

<p><b>GLE 0507.5.2</b> Analyze fossils to demonstrate the connection between organisms and environments that existed in the past and those that currently exist.</p>	<p>What can fossils tell us about our past and present?</p>	<p>TE: Ch. 2, Lesson 4, pp. 128-132 -Writing in Science: p. 134 -Quick Check: p. 129 -Art Link: p. 133 -Tennessee Activity: p. 137</p> <p>*GLE 0507.Inq.1 See TE: p. Tviii</p> <p>Interactive Information “Making a Fossil”: <a href="http://www.bbc.co.uk/sn/prehistoric_life/dinosaurs/making_fossils/">http://www.bbc.co.uk/sn/prehistoric_life/dinosaurs/making_fossils/</a></p> <p>Brainpop.com “Fossils”</p>	<p>TE: Tennessee Activity p. 137</p>	<p><b>0507.5.3</b> Identify the processes associated with fossil formation.</p> <p><b>0507.5.4</b> Use fossil evidence to describe an environment from the past.</p> <p><b>0507.5.5</b> Use fossils to match a previously existing organism with one that exists today.</p>	<p><b>*GLE 0507.Inq.1</b> Explore different scientific phenomena by asking questions, making logical predictions, planning investigations, and recording data. TE-Reading Skill: Cause &amp; Effect</p> <p>TE-Writing Link: p. 133 Narrative Writing</p>
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*5<sup>th</sup> Grade Earth & Space Science* Nine Week Curriculum Guide  
Developed Summer 2009

Academic Vocabulary: revolution, rotation, core, mantle, crust, geological features, volcano, earthquake

Grade Level Expectations (GLEs)	Sample Essential Questions	Resources	Common Experiences (or equivalent lesson)	Checks for Understanding	Integrations/Connections including Inquiry and Technology and Engineering (* used continually throughout the curriculum.)
<b>Standard 6 – The Universe</b> Conceptual Strand 6: <i>The cosmos is vast and explored well enough to know its basic structure and operational principles.</i>			Time Frame: 2 <sup>nd</sup> 9 Weeks Guiding Question 6: <i>What big ideas guide human understanding about the origin and structure of the universe, Earth’s place in the cosmos, and observable motions and patterns in the sky?</i>		
<b>GLE 0507.6.1</b> Compare planets based on their known characteristics.	How are the planets alike and different?	TE: Ch. 3, Lesson 1, pp. 152-159 -Ch. 3, Lesson 2, pp. 162-169 -Focus on Skills: pp. 160-161 -Reading in Science: pp. 170-171 -Quick Lab: pp. 158, 167 -Art Link: p. 169 *GLE 0507.T/E.4 See TE: p. Tix  Space Poems/Songs: <a href="http://www.geocities.com/Heartland/1133/spacepoems.html">http://www.geocities.com/Heartland/1133/spacepoems.html</a>	Make a chart or model to show characteristics of the planets.  TE: Focus on Skills: p. 160-161 -Quick Lab: p. 167 -Art Link: p. 169  Solar System Model Ideas & Information: <a href="http://www.efn.org/~jack_v/teaching.html">http://www.efn.org/~jack_v/teaching.html</a>	<input type="checkbox"/> 0507.6.1 Develop a chart that communicates the major characteristics of each planet.	*GLE 0507.T/E.4 Recognize the connection between scientific advances, new knowledge, and the availability of new tools and technologies.  TE-Reading Skills: Compare & Contrast Infer  TE-Social Studies Link: p. 159 Sky Observations  TE-Writing Link: p. 169 Personal Narrative

		<p>Planet Facts: <a href="http://www.iknowthat.com/com/App?File=ScienceLab.htm&amp;Type=S&amp;SWF=solarsystem%2Fscience_desk&amp;App=Science+Lab">http://www.iknowthat.com/com/App?File=ScienceLab.htm&amp;Type=S&amp;SWF=solarsystem%2Fscience_desk&amp;App=Science+Lab</a></p> <p>Interactive Activity: “Engineering Interact – Astro Adventure” <a href="http://engineeringinteract.org/resources/astroadventure/astroadventurelink.htm">http://engineeringinteract.org/resources/astroadventure/astroadventurelink.htm</a></p> <p>Exploring the Planets Website: <a href="http://www.nasm.si.edu/research/ceps/etp/etp.htm">http://www.nasm.si.edu/research/ceps/etp/etp.htm</a></p> <p>Solar System Trading Cards Activity: <a href="http://amazing-space.stsci.edu/resources/explorations/trading/">http://amazing-space.stsci.edu/resources/explorations/trading/</a></p> <p>Virtual Solar System: <a href="http://science.nationalgeographic.com/science/space/solar-system">http://science.nationalgeographic.com/science/space/solar-system</a></p>			
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<p><b>GLE 0507.6.2</b> Recognize that charts can be used to locate and identify star patterns.</p>	<p>How can star charts be used to locate and identify star patterns?</p>	<p>TE: Ch. 3, Lesson 3, pp. 180-181 -Focus on Skills: pp. 184-185 -Writing Link: p. 183 -Performance Assessment: p. 187</p> <p>*GLE 0507.T/E.1 See TE: p. Tix</p> <p>Star Finder Activity: <a href="http://spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml">http://spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml</a></p> <p>Star Maps: <a href="http://www.fossweb.com/modules3-6/SunMoonandStars/activities/starmaps.html">http://www.fossweb.com/modules3-6/SunMoonandStars/activities/starmaps.html</a></p>		<p><input type="checkbox"/> 0507.6.2 Use images of the night sky to identify different seasonal star patterns.</p> <p><input type="checkbox"/> 0507.6.3 Research a star pattern using a chart.</p>	<p>*GLE 0507.T/E.1 Describe how tools, technology, and inventions help to answer questions and solve problems.</p> <p>TE-Reading Skill: Problem &amp; Solution</p> <p>TE-Writing Link: p. 183 Southern Constellations</p> <p>TE-Social Studies Link: p. 183 Supernovas</p>
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<b>Standard 7 – The Earth</b> Conceptual Strand 7: <i>Major geologic events that occur over eons or brief moments in time continually shape and reshape the surface of the Earth, resulting in continuous global change.</i>			Time Frame: 2 <sup>nd</sup> 9 Weeks Guiding Question 7: <i>How is the earth affected by long-term and short term geological cycles and the influence of man?</i>		
<b>GLE 0507.7.1</b> Compare geologic events responsible for the earth’s major geological features.	What is the difference in the events that have formed the Earth’s surface?	TE: Ch. 4, lesson 1, pp. 194-195, 198-205 -Ch. 4, Lesson 2, pp. 208-215 -Ch. 4, Lesson 3, pp. 218-227 -A Closer Look: pp. 144-145 -Writing in Science: p. 206 -Be a Scientist: pp. 216-217 -Performance Assessment: p. 243  Volcano Video Clip & Quiz: <a href="http://video.nationalgeographic.com/video/player/kids/forces-of-nature-kids/volcanoes-101-kids.html">http://video.nationalgeographic.com/video/player/kids/forces-of-nature-kids/volcanoes-101-kids.html</a>	“Shaping Earth’s Surface” Chart TE: Performance Assessment: p. 243	<input type="checkbox"/> 0507.7.1 Create a model to illustrate geologic events responsible for changes in the earth’s crust.  <input type="checkbox"/> 0507.7.2 Prepare a chart to compare how volcanoes, earthquakes, faulting, and plate movements affect the earth’s surface features.	TE-Reading Skills: Summarize, Infer, Draw Conclusions  TE-Math Link p. 205 Measuring the Age of an Ocean  TE-Writing Link p. 215 Interviewing a Witness to an Eruption  TE-Social Studies Link p. 215 Eruption of Mount Vesuvius  TE-Math Link p. 227 Measuring Earthquake Strength  TE-Social Studies Link p. 227 Earthquake Magnitude

<p><b>Standard 8 – The Atmosphere</b>          Conceptual Strand 8: <i>The earth is surrounded by an active atmosphere and an energy system that controls the distribution life, local weather, climate, and global temperature.</i></p>		<p>Time Frame: 2<sup>nd</sup> 9 Weeks          Guiding Question 8: <i>How do the physical characteristics and the chemical makeup of the atmosphere influence surface processes and life on Earth?</i></p>		
<p>GLE 0507.8.1 Analyze and predict how major landforms and bodies of water affect atmospheric conditions.</p>	<p>What effect do landforms and bodies of water have on the atmospheric conditions?</p>	<p>TE: Ch. 4, Lesson 4, pp. 230-231, 234-239          -A Closer Look: pp. 146-147          -Explore: p. 231          -Quick Lab: p. 237          -Art Link: p. 239          -Math Link: p. 239          -Math in Science: pp. 240-241          -Tennessee Activity: p. 243</p> <p>*GLE 0507.Inq.6          See TE: p. Tviii</p>	<p><input type="checkbox"/> 0507.8.1 Compare the climates of coastal and inland areas at similar latitudes to demonstrate the ocean’s impact on weather and climate.</p> <p><input type="checkbox"/> 0507.8.2 Use land maps to demonstrate how mountain ranges affect weather and climate.</p> <p><input type="checkbox"/> 0507.8.3 Use weather maps of the United States to graph temperature and precipitation for inland and coastal regions.</p> <p><input type="checkbox"/> 0507.8.4 Use local environmental information to analyze how weather and climate are affected by landforms and bodies of water.</p>	<p>*GLE 0507.Inq.6 Compare the results of an investigation with what scientists already accept about this question.</p> <p>Latin Root: aqua          Meaning: “water”          Exs: aquatic, aqueduct, aqueous</p> <p>TE-Reading Skill: Main Idea &amp; Details</p> <p>TE-Math Link: p. 239 Average Temperature</p>

**5<sup>th</sup> Grade Physical Science Nine Week Curriculum Guide**  
 Developed Summer 2009

Academic Vocabulary: physical property, condensation, evaporation, chemical property, gravity, potential energy, kinetic energy, conduction, convection, radiation

Grade Level Expectations (GLEs)	Sample Essential Questions	Resources	Common Experiences (or equivalent lesson)	Checks for Understanding	Integrations/Connections including Inquiry and Technology and Engineering (* used continually throughout the curriculum.)
<b>Standard 9 – Matter</b> Conceptual Strand 9: The composition and structure of matter is known, and it behaves according to principles that are generally understood.			Time Frame: 3 <sup>rd</sup> 9 Weeks Guiding Question 9: How does the structure of matter influence its physical and chemical behavior?		
<b>GLE 0507.9.1</b> Observe and measure the simple chemical properties of common substances.	What are the simple chemical properties of common substances?	TE: Ch. 5, Lesson 4, pp. 292-298, 300-301 -A Closer Look: pp. 252-253 -Explore: p. 293 -Read a Diagram: p. 296 -Quick Lab: p. 297 -Quick Check: p. 297 -Focus on Skills: pp. 300-301 - Assessment: p. 303  *GLE 0507.T/E.3 See TE: p. Tix		<b>0507.9.1</b> Compare the simple chemical properties of common substances.	<b>*GLE 0507.T/E.3</b> Identify appropriate materials, tools, and machines that can extend or enhance the ability to solve a specified problem.  TE-Reading Skill: Compare & Contrast  TE-Writing Link: p. 299 Explanatory Writing

		Physical vs. Chemical Properties Lesson Plan <a href="http://www.lessonsnp.com/docs/pdf/physicalchemical.pdf">http://www.lessonsnp.com/docs/pdf/physicalchemical.pdf</a>			
<b>GLE 0507.9.2</b> Design and conduct an experiment to demonstrate how various types of matter freeze, melt, or evaporate.	How do the different types of matter change states?	TE: Ch. 5, Lesson 3, pp. 283, 290-291 -Reading in Science: pp. 268-269 -Explore: p. 283 -Be a Scientist: pp. 290-291  *GLE 0507.Inq.5 See TE: p. Tviii  Interactive Activity: <a href="http://www.harcourtschool.com/activity/status_of_matter/index.html">http://www.harcourtschool.com/activity/status_of_matter/index.html</a>	Experiment with matter as it freezes, melts, and/or evaporates.  TE: Be a Scientist pp. 290-291 -Explore: p. 283 “What Happens When Ice Melts?”	<b>0507.9.2</b> Investigate how different types of materials freeze, melt, evaporate, or dissipate.	<b>*GLE 0507.Inq.5</b> Recognize that people may interpret the same results in different ways.  TE-Reading Skill: Fact & Opinion  TE-Writing Link: p. 289 Descriptive Writing  TE-Math Link: p. 289 Boiling

<p><b>GLE 0507.9.3</b> Investigate factors that affect the rate at which various materials freeze, melt, or evaporate.</p>	<p>Are there factors that might affect a material's changing rate?</p>	<p>TE: Ch. 5, Lesson 3 pp. 284-287, 290-291 -Reading in Science: pp. 268-269 -Quick Lab: p. 287</p> <p>Melting &amp; Boiling Interactive Activity: <a href="http://www.harcourtshool.com/activity/hotplate/index.html">http://www.harcourtshool.com/activity/hotplate/index.html</a></p> <p>Reversible &amp; Irreversible Changes Interactive Activity: <a href="http://www.bbc.co.uk/schools/scienceclips/ages/10_11/rev_irrev_changes.shtml">http://www.bbc.co.uk/schools/scienceclips/ages/10_11/rev_irrev_changes.shtml</a></p>		<p><b>0507.9.3</b> Use data from a simple investigation to determine how temperature change affects the rate of evaporation and condensation.</p>	
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<b>Standard 10 – Energy</b> Conceptual Strand 10: <i>Various forms of energy are constantly being transformed into other types without any net loss of energy from the system.</i>			Time Frame: 3 <sup>rd</sup> 9 Weeks Guiding Question 10: <i>What basic energy related ideas are essential for understanding the dependency of the natural and man-made worlds on energy?</i>		
<b>GLE 0507.10.1</b> Design an experiment to illustrate the difference between potential and kinetic energy.	What is the difference in potential and kinetic energy?	TE: Ch. 6, Lesson 3, p. 337 -Be a Scientist: pp. 344-345 -Explore: p. 337 -Quick Check: p. 341  *GLE 0507.T/E.2 See TE: p. Tix  Lesson Investigation: <a href="http://www.eduref.org/Virtual/Lessons/Science/Physics/PHS0036.html">http://www.eduref.org/Virtual/Lessons/Science/Physics/PHS0036.html</a>	Brainpop.com “Kinetic Energy” & “Potential Energy” Video, Activity, Quiz	<b>0507.10.1</b> Design and conduct an investigation to demonstrate the difference between potential and kinetic energy.  <b>0507.10.2</b> Create a graphic organizer that illustrates different types of potential and kinetic energy.	<b>*GLE 0507.T/E.2</b> Recognize that new tools, technology, and inventions are always being developed.  TE-Reading Skill: Main Idea & Details  TE-Writing Link: p. 343 Descriptive Writing
<b>GLE 0507.10.2</b> Conduct experiments on the transfer of heat energy through conduction, convection, radiation.	How do the processes of conduction, convection, and radiation transfer heat energy?	TE: Ch. 6, Lesson 4, pp. 347, 353 -Be a Scientist: pp. 356-357 -Quick Check: p. 351  -Performance Assessment: p. 359 -Quick Lab: pp. 341, 353 -Art Link: p. 343 -Explore: p. 347 -TN Activity: p. 359		<b>0507.10.3</b> Describe the differences among conduction, convection, and radiation.  <b>0507.10.4</b> Create a poster to illustrate the major forms of energy.	TE-Reading Skill: Draw Conclusions  TE-Writing Link: p. 355 Writing a Story  TE-Math Link: p. 355 Heating Gold

		<p>Heat Transfer Interactive Activity: <a href="http://www.wisc-online.com/objects/index_tj.asp?objID=SC E304">http://www.wisc-online.com/objects/index_tj.asp?objID=SC E304</a></p> <p>Heat Transfer Interactive Explanation: <a href="http://www.vtaide.com/png/heat2.htm">http://www.vtaide.com/png/heat2.htm</a></p> <p>Unitedstreaming.com “Heat Transmission: Conduction, Convection, and Radiation” <a href="http://player.discoveryeducation.com/index.cfm?guidAssetId=e8b580cd-c3f4-4797-851c-a25e7c8a0899">http://player.discoveryeducation.com/index.cfm?guidAssetId=e8b580cd-c3f4-4797-851c-a25e7c8a0899</a></p>		<p><b>0507.10.5</b> Demonstrate different ways that energy can be transferred from one object to another.</p>	
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<b>Standard 11 – Motion</b> Conceptual Strand 11: <i>Objects move in ways that can be observed, described, predicted, and measured.</i>			Time Frame: 3 <sup>rd</sup> 9 Weeks Guiding Question 11: <i>What causes objects to move differently under different circumstances?</i>		
<b>GLE 0507.11.1</b> Design an investigation, collect data and draw conclusions about the relationship among mass, force, and distance traveled.	How are mass, force, and distance traveled related?	TE: Ch. 6, Lesson 2, pp. 330-331 -A Closer Look: pp. 250-251 -Focus on Skills: pp. 334-335 -Quick Lab: p. 329 -Quick Check: p. 331  Unitedstreaming.com “Speed and Acceleration” <a href="http://player.discoveryeducation.com/index.cfm?guidAssetId=00B0004F-F285-4A44-8CB7-DCF72689B33E">http://player.discoveryeducation.com/index.cfm?guidAssetId=00B0004F-F285-4A44-8CB7-DCF72689B33E</a>	Experiment with mass, force, and motion.  TE: A Closer Look: pp. 250-251	<b>0507.11.1</b> Predict how the amount of mass affects the distance traveled given the same amount of applied force.  <b>0507.11.2</b> Prepare statements about the relationship among mass, applied force, and distance traveled.  <b>0507.11.3</b> Design and conduct experiments using a simple experimental design to demonstrate the relationship among mass, force, and distance traveled.	Greek Root: aero Meaning: “air” Exs: aerodynamics, aerial, aeronautics  TE-Reading Skill: Main Idea & Details  TE-Writing Link: p. 333 Narrative Writing  TE-Math Link: p. 333 Upward Forces

<b>Standard 12 – Forces in Nature</b> Conceptual Strand 12: <i>Everything in the universe exerts a gravitational force on everything else; there is an interplay between magnetic fields and electrical currents.</i>			Time Frame: 3 <sup>rd</sup> 9 Weeks Guiding Question 12: <i>What are the scientific principles that explain gravity and electromagnetism?</i>		
<b>GLE 0507.12.1</b> Recognize that the earth attracts objects without directly touching them.	What allows the earth to attract objects from a distance?	TE: Ch. 6, Lesson 2 pp. 324-325 -Explore: p. 323 -Be a Scientist: pp. 344-345 -Also see: p. 314  Singing Science – “What is Gravity” <a href="http://www.acme.com/jef/singing_science/">http://www.acme.com/jef/singing_science/</a>  Gravity & Inertia Information, Activity <a href="http://www.sciencemonger.com/gravity_inertia.html">http://www.sciencemonger.com/gravity_inertia.html</a>		<b>0507.12.3</b> Design and explain an investigation exploring the earth’s pull on objects.	TE-Reading Skill: Main Idea & Details
<b>GLE 0507.12.2</b> Investigate how the shape of an object influences the way that it falls toward the earth.	How does an object’s shape affect the way it falls?	TE: Ch. 6, Lesson 2 pp. 323, 326-327 -Explore: p. 323 -Also see: p. 314  Lesson Plan: “Gravity Gets You Down” <a href="http://school.discovereducation.com/lessonplans/programs/invisibleforce/">http://school.discovereducation.com/lessonplans/programs/invisibleforce/</a>	TE: Explore p. 323 “Does gravity affect all objects in the same way?”	<b>0507.12.2</b> Demonstrate how the shape of an object affects how it falls toward the earth.	

<p><b>GLE 0507.12.3</b> Provide examples of how forces can act at a distance.</p>	<p>How can forces act at a distance?</p>	<p>TE: Ch. 6, Lesson 2 pp. 324-325 -Quick Check: p. 325 -Also see: p. 314</p> <p>“Gravity in Action” Hands-on Lesson: <a href="http://www.tryscience.org/experiments/experiments_gravity_athome.html">http://www.tryscience.org/experiments/experiments_gravity_athome.html</a></p> <p>Gravity Interactive Information: <a href="http://www.amnh.org/ology/features/gravity/">http://www.amnh.org/ology/features/gravity/</a></p> <p>Interactive Activity: <a href="http://www.fearofphysics.com/Fall/fall.html">http://www.fearofphysics.com/Fall/fall.html</a></p>		<p><input type="checkbox"/> <b>0507.12.1</b> Explain and give examples of how forces act at a distance.</p>	
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**5<sup>th</sup> Grade Science Nine Week Curriculum Guide**  
Developed Summer 2009

Title: Preview 6 <sup>th</sup> grade curriculum			Time Frame: 4 <sup>th</sup> nine weeks after curriculum for 5 <sup>th</sup> grade has been taught and after TCAP testing.		
Academic Vocabulary: Currently being updated by Tn DoE, link to come later					
Grade Level Equivalent (GLE)	Sample Essential Questions	Resources	Common Experiences	Checks for Understanding	Integrations/ Connections Including Inquiry and Technology and Engineering
<b>GLE 0607.12.1</b> Describe how simple circuits are associated with the transfer of electrical energy.	How does electricity work to turn on a light bulb?	See 6 <sup>th</sup> grade teacher for curriculum help. Discovery streaming video (48sec) “Electricity all Around Us” Great unit opener. Brain Pop offers several videos and activities on electricity and circuits. Have students write or illustrate “A Day Without Electricity” Students can share their ideas. Create posters or graphic organizers of items using electricity. Research and create a time line of electrical items. Great site for all electricity topics:		<input type="checkbox"/> <b>0607.12.1</b> Prepare a poster that illustrates how electricity passes through a simple circuit to produce heat, light, or sound.	<b>GLE0601.7.4</b> ELA – Apply and adapt the principals of written composition to create coherent media productions. <b>GLE 0606.1.1</b> Math – Use mathematical language, symbols, and definitions while developing mathematical reasoning.

		<a href="http://www.kathimitchell.com/elect.htm">http://www.kathimitchell.com/elect.htm</a>			
<p><b>GLE 0607.12.2</b> Explain how simple electrical circuits can be used to determine which materials conduct electricity.</p>	<p>What makes a good conductor of electricity?</p>	<p>Discovery streaming video (1:35)“Static and Current Electricity, Conductors and Insulators” (2:22) “Breaking Electrical Paths” Magic School Bus segment. Game site showing circuits: <a href="http://www.andythelwell.com/blobz/">http://www.andythelwell.com/blobz/</a> <a href="http://www.physics4kids.com/files/elect_conduct.html">http://www.physics4kids.com/files/elect_conduct.html</a> In groups have students research and determine items that would make good conductors.</p>		<p>□ <b>0607.12.2</b> Determine a material’s electrical conductivity by testing it with a simple battery/bulb circuit.</p> <p>□ <b>0607.12.3</b> Compare and contrast the characteristics of objects and materials that conduct electricity with those that are electrical insulators.</p>	<p><b>GLE0601.2.7</b> ELA – Participate in work teams and group discussions. <b>GLE 0606.1.5</b> Math – Use mathematical ideas and processes in different to formulate processes, analyze graphs, set up and solve problems and interpret solutions.</p>