

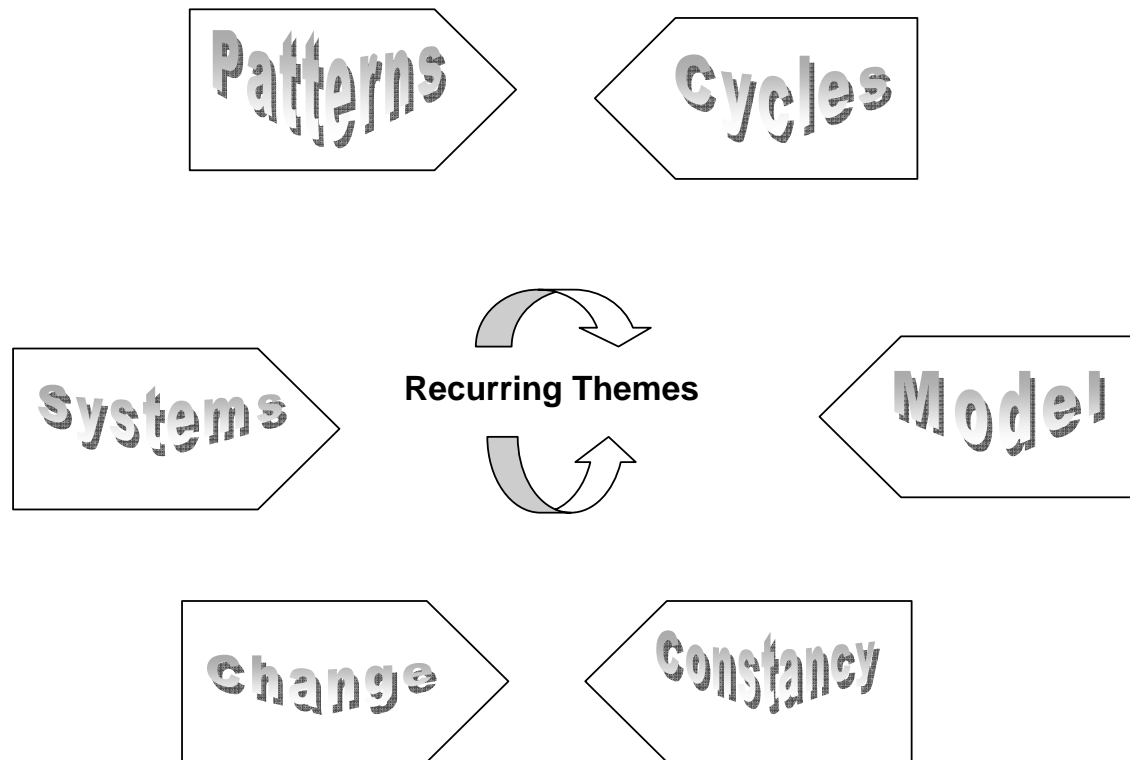
4th Grade Science Scope and Sequence Overview 2009-2010 GO GREEN! 50% Investigations						
	1st 6wks Aug 24- Oct 2	2nd 6wks Oct 5 - Nov 6	3rd 6weeks Nov 9 - Dec 18	4th 6 weeks Jan 5 - Feb 19	5th 6 weeks Feb 22 - April 16	6th 6 weeks April 19 - June 4
Week One	★ Safety and Equipment Scientific Method Aug 24-28 ()	Scientific Method (4.2 A-E) (4.3A) Oct 5-9	Soils (Texture, Capacity to hold water, support life) (4.11A)	Effects of Oceans on Land (4.11B)	Writing TAKS Models (4.3C) Feb 22-26	TAKS Review Earth Day Activities Adaptations (4.1B) (4.8B) Apr 19-23
Week Two	★ THEMES (Introduction) Aug 31 - Sept 4	Non-living Systems such as Electric Circuits (4.5A) Oct 12-16	Nov 9-Nov 20	Jan 5-15	Sun: Growth of plants (4.11C) Mar 1-5	Adaptations (4.8B) Math and Reading TAKS April 26-30
Week Three	States of Matter (4.7B) Sept 7-11	Removing Parts of a System (4.5B) Oct 19-23	Rock Cycle, Erosion, Weathering, flow, dissolving and growth (4.10A)	Sun in Relation to winds and water cycle (4.11C) Jan 18-22	Preparation for Science Fair Week 1 Mar 8-12	Inherited Traits and Learned Characteristics (4.9A-B) May 3 -7
Week Four	Changes in states Caused by +,- of heat and conductivity (4.7A) Sept 14-25	Transformations and Symmetry (4.6B) (4.6C) Oct 26-30	Nov 23-Dec 11	Patterns: weather and objects in the sky (4.6A) Jan 25-Feb 5	Preparation for Science Fair Week 2 Mar 22-26	Species Past and Present (4.8C) May 10 -14
Week Five		Physical Science Review and Assessment Nov 2-6	Fossils (4.10B) Dec 14-18		Metamorphosis (4.6A) Mar 29-Apr 9	District Science Fair May 22@RSE Investigation 1 May 17-21
Week Six	Density and Buoyancy (4.7B) Sept 28-Oct 2			Earth Science Review and Assessment Feb 8-12		Life Science Review and Assessment Investigation 1 May 24-28
Week Seven				Living Systems (4.5A) Feb 15-19	Survival and Reproduction (4.8A) April 12-16	Review Recurring Themes Investigation 1 May 31-June 4
<p style="text-align: center;">Recurring Themes: Patterns, Cycles, Systems, Models, Change and Constancy</p> <p>★ Ongoing TEKS: Scientific Investigation and Reasoning Tested in 5th Grade</p>						

Recurring Themes






Recurring Themes are pervasive in science, mathematics and technology. These ideas transcend disciplinary boundaries and include patterns, cycles, systems, models, change and constancy.

Posters have been provided for all teachers to place in their classrooms with the purpose to connect these themes to their daily instruction in science. Teachers can also create different posters with their students if they desire.




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First Six Weeks - **Week One** - Safety and Equipment

Standards 	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.1) Conduct field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices.</p> <p>A. Demonstrate safe practices during field and laboratory investigations;</p> <p>B. Make wise choices in the use and conservation of resources.</p> <p>(4.4) Know how to use tools and methods to conduct science inquiry.</p> <p>A. Collect information using tools: calculators, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devises, balances, compasses;</p> <p>B. Demonstrate that repeated investigations may increase the reliability of results.</p> <div data-bbox="401 938 699 1304" style="border: 1px solid black; background-color: #e0f0ff; padding: 5px;"> <p>Set up Interactive Notebook</p> <p>Right side of Interactive Notebook: Students record vocabulary, lab notes, concepts,</p> <p>Left side of Interactive Notebook: Students create brainstorming, mind-mapping, questioning, and other synthesis strategies to make sense of the content.</p> </div>	<p>► Be safe during experiments. Follow lab rules and talk to the teacher if there is a problem.</p> <p>► Conserve resources and materials in the science lab when possible.</p> <div data-bbox="724 651 968 760" style="border: 1px solid black; background-color: #d3d3d3; padding: 5px; text-align: center;"> <p>Emphasis on SAFETY and tools . Make connection between both of them.</p>  </div> <div data-bbox="699 902 1108 1052" style="border: 1px solid black; padding: 5px;"> <p>Clear Expectations: With student input, create a criteria chart that lists characteristics of quality interactive journal entries.</p> </div> <div data-bbox="699 1065 1108 1273" style="border: 1px solid black; padding: 5px;"> <p>Clear Expectations: The teacher will introduce and model the use of an interactive notebook. Collectively, the classroom teacher and students will develop a criteria chart of what makes a "quality" or "good" interactive notebook.</p> </div>	<p>hypotheses graph table chart goggles hand lenses device reliability</p>	<p>Grade 3 (3.1) Conduct field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices.</p> <p>A. Demonstrate safe practices during field and laboratory investigations;</p> <p>B. Make wise choices in the use and conservation of resources.</p> <p>Grade 5  (5.1) Scientific processes. The student conducts field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:</p> <p>(A) demonstrate safe practices during field and laboratory investigations; and</p> <p>(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.</p>	<p>Internet Activities:</p> <p>► Balance Scale Online Tutorial www.ohaus.com/products/education/tutorials.asp?source+2</p> <p>► Virtual Microscope http://www.udel.edu/biology/ketcham/microscope [Click on virtual microscope]</p> <p>Lesson Idea:</p> <p>Show students a transparency or a picture of a scene. Have students follow the flow chart below and interact with the illustration. This information can be written in their Interactive notebook.</p> <div data-bbox="1396 1015 1669 1258" style="text-align: center;"> <p>Observations Inferences Opinions Compare Classify Label</p> </div>


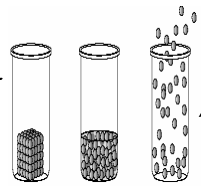

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First Six Weeks- **Week Two**- Themes

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>Introduction Part 2</p> <p>Recurring Themes are pervasive in science, mathematics and technology. These ideas transcend disciplinary boundaries and include patterns, cycles, systems, models, change and constancy.</p> <div data-bbox="436 873 674 1015" style="border: 2px solid green; padding: 5px; text-align: center;"> <p>Recurring Themes</p> </div>	<ul style="list-style-type: none"> ▶ A system is a collection of cycles, structures, and processes that interact. ▶ All systems have basic properties that can be described in terms of space, time, energy, and matter. ▶ Change and constancy occur in systems and can be observe and measured as patterns. ▶ Patterns help predict what will happen next and can change over time. 	<p>systems change Constancy pattern cycles models</p>	<p>These concepts are part of Kinder through 5th grade.</p>	<p>Create poster for each main idea. An axample is attached to this document. Posters need to be displayed for the rest of the year to make easy reference to the concepts.</p> <div data-bbox="1493 732 1570 792" style="text-align: center;">  </div>



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First Six Weeks- Physical Science- **Week Three** - States of Matter

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.7) Science concepts. The student knows that matter has physical properties. The student is expected to:</p> <p>(B) conduct tests, compare data, and draw conclusions about physical properties of matter including states of matter, conduction, density, and buoyancy.</p> <div data-bbox="409 706 688 933" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Guiding Questions: What is matter? What are the physical states of matter? How are the molecules arranged in matter and how?</p> </div> <div data-bbox="420 1031 928 1339" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>All matter has mass and takes up space. Matter in the solid state has tightly packed particles and does not change shape when moved from one container to the next. Matter in liquid state has loosely packed particles, flows when poured and takes the shape of its container. Matter in the gaseous state has widely spaced energetic particles that bounce against container walls and each other until they are completely spread out to fill the entire container.</p> </div>	<p>► Matter has physical properties</p> <p>► Physical properties can be used to classify matter, including state, mass, volume, density, buoyancy, and conduction</p> <p>► Matter can exist as a solid, liquid or gas</p>	<p>Matter</p> <p>State of matter</p> <p>Substance</p> <p>Physical property</p> <p>Classify</p> <p>Space</p> <p>Solid</p> <p>Liquid</p> <p>Gas</p> <div data-bbox="987 876 1360 1055" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Students make a list of matter/non-matter and discuss in cooperative groups. They must prove their thinking by stating that it has mass and takes up space. Dispel any misconceptions about air by blowing up a balloon.</p> </div>	<p>Grade 3 (3.7) Science concepts. The student knows that matter has physical properties. The student is expected to: (B) Identify matter as liquids, solids, and gases</p> <p>Grade 5  (5.7) Science concepts. The student knows that matter has physical properties. The student is expected to: (A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound</p> <div data-bbox="1155 1136 1354 1323" style="text-align: center;">  </div>	<p>Internet Activities: <i>Interactive States of Matter:</i> http://www.bbc.co.uk/schools/scienceclips/ages/8_9/solid_liquids.shtml</p> <p><i>Different games for "States of Matter"</i> http://www.quia.com/jg/377547.html</p> <p><i>Interactive game with simple pictures "Solids, Liquids and Gases"</i> http://www.bbc.co.uk/schools/revision/se/science/materials/08_act.shtml</p> <p><i>See this website for easy info. access. on five states of matter</i> http://www.chem4kids.com/files/matter_states.html</p> <p>Lesson Idea: For tactile learners: Students gather matter to classify into the three states. They make a visual classification of the three states of matter. (Include plasmas if possible.) Use hula-hoops to make a Venn diagram. Fill in the center with written ways the matter is the same even though it is in different states.</p> <p>Interactive Notebook Idea:  Students draw molecules of the 3 states of matter using dots.</p> <p>Students make a list of the properties of matter that can be observed</p>



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First Six Weeks- Physical Science- **Week Four and Five** - Changes in state of matter

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.7) Science concepts. The student knows that matter has physical properties. A. The student is expected to: Observe and record changes in the states of matter caused by the addition or reduction of heat</p> <div data-bbox="422 724 659 1154" style="border: 1px solid orange; padding: 5px; margin-top: 20px;"> <p>Guiding Questions: How do we compare and measure temperature or heat energy? How do we measure changes in temperature or heat energy and represent them graphically?</p> </div>	<p>► Knows that matter has physical properties ► Particles in matter move farther apart when matter is heated ► Adding heat may cause solids to turn to liquids, or liquids to change into gases</p>	<p>Heat Melt Reduction Addition Thermometer</p>	<p>Grade 3 (3.7) Science concepts. The student knows that matter has physical properties. The student is expected to: (A) Gather information including temperature, magnetism, hardness, and mass using appropriate tools to identify physical properties of matter</p> <p>Grade 5  (5.7) Science concepts. The student knows that matter has physical properties. The student is expected to: (A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound (D) observe and measure characteristic properties of substances that remain constant such as boiling points and melting points</p>	<p>Internet Activities: <i>What happened when heat was added and conduction occurred?</i> http://www.mansfieldct.org/schools/mms/staff/hand/atomsheat.htm</p> <p><i>Interactive Activities Temperature Metric Measurement</i> http://www.bbc.co.uk/schools/scienceclips/ages/8_9/keeping_warm.shtml</p> <div data-bbox="1486 724 1562 797" style="text-align: center;">  </div> <div data-bbox="1409 821 1682 1114" style="border: 1px solid blue; padding: 5px; margin-top: 20px;"> <p>Dana Center Snapshot: Place an ice cube in an aluminum pan and set it on a hot plate. Time how long it takes for the ice to change from a solid to a liquid to a gas.</p> </div>

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First Six Weeks- Physical Science- **Week Six** - Density and Buoyancy

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.7) Science concepts. The student knows that matter has physical properties. The student is expected to:</p> <p>(B) conduct tests, compare data, and draw conclusions about physical properties of matter including states of matter, conduction, density, and buoyancy.</p> <div data-bbox="432 643 682 938" style="border: 1px solid black; background-color: #ffffcc; padding: 5px; margin-top: 10px;"> <p>Guided Inquiry: Buoyancy</p> <p>Use the inquiry model and the overhead/ blackboard to plan an inquiry lesson on floating/sinking objects. Walk students through the entire inquiry process testing items from throughout your room and beyond.</p> </div> <div data-bbox="432 951 1297 1263" style="border: 2px solid orange; border-radius: 15px; padding: 10px; margin-top: 10px;"> <p>Guiding Questions:</p> <p>What causes matter to float or sink? What physical properties of matter can be changed?</p> <p>How does mass affect density? What is matter and how do we measure it? Why do we need a standard, and what is it? How do we measure length in science?</p> <p>Can I use what I know to be a landmark length to improve my estimation?</p> <p>How can I use measurement to observe and record data and changes in that data over time?</p> <p>How are liquids measured in science? What is the difference between capacity and volume?</p> <p>How is mass measured in science? What is the difference between mass and weight?</p> <p>How can we compare and record changes in mass and write an explanation to explain these changes?</p> <p>What part has measurement played over time, and how has it helped scientists and society?</p> <p>How does mass affect density?</p> </div>	<p>► Knows that matter has physical properties</p> <p>► Buoyancy is determined by the combined mass and volume of an object</p> <p>► Matter has physical properties.</p> <p>► The physical properties of matter, length, width, mass, density, volume and temperature can be measured.</p> <p>► Mass is the amount of matter in an object</p> <p>► Volume is the amount of space an object takes up</p> <p>► Density is amount of mass packed into a certain amount of space</p>	<p>Matter Substance Physical property Buoyancy density Measurement Substance Classify Mass Volume Dense Capacity</p>	<p>This concept of density and buoyancy is only taught in 4th Grade..</p> <div data-bbox="1209 440 1276 496" style="text-align: center;">  </div> <div data-bbox="1094 532 1358 816" style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p>Dana Center Snapshot: conduct a test to show how the position of a raw egg in its shell changes in container of fresh water when salt is added to the water to the point of saturation.</p> </div>	<p>Internet Activities:</p> <p>► <i>United Streaming Buoyancy:</i> http://www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=F3B3BE76-E02F-48A3-9731-132FC8444542</p> <p>Internet Activities:</p> <p>► Mass/Volume Cloze Activity http://www.quia.com/servlets/quia.activities.common.ActivityPlayer?AP_range=1626647551&AP_activityType=16&AP_urlId=7957&AP_continuePlay=true&id=7957</p> <p>► Balance Scale Online Tutorial www.ohaus.com/products/education/tutorials.asp?source+2</p> <p>► Metric Measures http://www.pueblo.gsa.gov/cic_text/misc/usmetric/metric-allyouneed.htm</p> <p>Think Metric! http://www.thinkmetric.org.uk/index.html</p> <p>► More Lessons http://www.geocities.com/smilecdg/measuremtles.html</p> <p>Lesson Idea:</p> <p>► Students observe a variety of containers of colored water to hypothesize which holds more.</p> <p>► Add syrup, water and oil to a clear graduated cylinder to show density to student.</p> <div data-bbox="1556 1198 1633 1271" style="text-align: right; margin-top: 20px;">  </div>

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.2) The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:</p> <p>(A) plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;</p> <p>(B) collect information by observing and measuring;</p> <p>(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;</p> <p>(D) communicate valid conclusions; and</p> <p>(E) construct simple graphs, tables, maps, and charts to organize, examine, and evaluate information</p> <p>(4.3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:</p> <p>(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information</p> <p>(4.4) Know how to use tools and methods to conduct science inquiry.</p>	<p>► repeated investigations may increase the reliability of results.</p> <div data-bbox="772 391 1079 634" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Scientific processes should be taught and reinforced throughout the curriculum instead of as an isolated unit.</p> </div> <div data-bbox="638 654 1188 1219" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Guiding Questions:</p> <p>How do we do the work of scientists?</p> <p>How have scientists throughout history impacted our lives and society?</p> <p>How do scientist come up with their ideas and answer their questions?</p> <p>How do scientists use measurement and observation tools to help answer their questions?</p> <p>How do we do the work of scientists in the classroom and in the field?</p> <p>How do scientists research and share data to answer questions?</p> <p>What do scientists learn from models?</p> <p>How do scientists take their questions and turn them into inquiry?</p> <p>What safe practices must we use in the classroom, lab, and field?</p> </div> <div data-bbox="747 1317 1031 1438" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Emphasis on Scientific Process and Safety</p> </div>	<p>experiment conclusion variables investigation interpret testable hypotheses equipment data</p>	<p>These TEKS are similar in Grade 3 and Grade 5 with the exception below:</p> <p>Grade 5  (5.2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:</p> <p>(E) construct simple graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate information</p>	



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Second Six Weeks- Physical Science- **Week Two** - Non-Living Systems

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.5) Science concepts. The student knows that complex systems may not work if some parts are removed. The student is expected to:</p> <p>A. Identify and describe the roles of some organisms in living systems such as plants in a schoolyard, and parts in nonliving systems such as a light bulb in a circuit</p> <div data-bbox="289 771 583 1107" style="border: 1px solid black; border-radius: 50%; padding: 10px; width: fit-content; margin: 20px auto;"> <p>Focus on Non- Living systems</p> </div>	<p>▶ Complex systems may not work if some parts are removed.</p> <p>▶ Systems have parts that interact and work together.</p> <p>▶ Circuits are systems with parts that work together to provide a path for electrical energy</p> <p>▶ Electrical energy can flow in a circuit of conductive materials such a battery, wire, switch, and bulb.</p> <p>▶ The parts of a system influence each other, so it may not work if parts are missing or broken</p> <p>▶ Electrical energy can't flow in a circuit if the battery, wire, switch, or bulb is missing, broken, or connected incorrectly</p>	<p>Electricity Circuit Current Light bulb Battery Terminal Positive charge Negative charge Switch Conductor path Incomplete system Complete system Open circuit Closed circuit Influence</p>	<p>Grade 3 (3.5) The students knows that systems exist in the world. The student is expected to: (A). Observe and identify simple systems such as a sprouted seed and a wooden toy car. (B) Observe a simple system and describe the role of various parts such as a yo-yo and string</p> <p>Grade 5  (5) Science concepts. The student knows that a system is a collection of cycles, structures, and processes that interact. The student is expected to: (A) describe some cycles, structures, and processes that are found in a simple system; and (B) describe some interactions that occur in a simple system</p> <div data-bbox="1339 1221 1659 1357" style="border: 1px solid black; background-color: #ffffcc; padding: 5px; margin-top: 20px;"> <p>Interactive Notebook Idea: udents draw an electrical circuit in their interactive notebook.</p>  </div>	<p>Internet Activities:</p> <p>▶ <i>Detectiting Systems</i> http://www.utdanacenter.org/sciencetoolkit/instruction/snapshot/s/4.php</p> <p>▶ Interactive circuit and conduction experiments; http://www.bbc.co.uk/schools/scienceclips/ages/8_9/circuits_conductors.shtml</p> <p>Lesson Idea: Have students stand in a circle. Cut piece a paper into fourths. One student is the "switch", the teacher is the "battery". When the "switch is on the student receives pieces of paper from the "battery" and passes the electric flow. As long as a new piece of paper comes along closed circuit electricity can flow. When the "switch" is off, the student steps back from the circle (Open Circuit) and does not pass more paper. Electricity stops flowing.</p>



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Second Six Weeks- Physical Science- **Week Three**- Removing parts of a system

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.5) Science concepts. The student knows that complex systems may not work if some parts are removed. The student is expected to:</p> <p>(B) predict and draw conclusions about what happens when part of a system is removed</p>	<p>► Complex systems may not work if some parts are removed.</p> <p>► Systems have parts that interact and work together</p>	<p>System Parts remove conclusion</p>	<p>Second and First grade TEKS focus on separation of parts causing the whole not to work properly.</p> <p>Grade 3 (3.5) The students knows that systems exist in the world. The student is expected to: (A).Observe and identify simple systems such as a sprouted seed and a wooden toy car. (B) Observe a simple system and describe the role of various parts such as a yo-yo and string</p> <p></p> <p>Grade 5 (5) Science concepts. The student knows that a system is a collection of cycles, structures, and processes that interact. The student is expected to: (A) describe some cycles, structures, and processes that are found in a simple system; and (B) describe some interactions that occur in a simple system</p>	<div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Dana Center Snapshot: Predict, test, and draw conclusions about the removal of a part from a circuit made with wires, battery, light bulb, and socket.</p> </div>



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Second Six Weeks- Physical Science- **Week Four** - Transformations and Symmetry

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.6) Science concepts. The student knows that change can create recognizable patterns. The student is expected to:</p> <p>(B) illustrate that certain characteristics of an object can remain constant even when the object is rotated like a spinning top, translated like a skater moving in a straight line, or reflected on a smooth surface; and</p> <p>(C) use reflections to verify that a natural object has symmetry.</p> <p style="background-color: yellow; display: inline-block; padding: 2px;">Incorporate math with this concept.</p>	<p>► The student knows that change can create recognizable patterns.</p> <p>► Translation, rotation, and reflection are three types of transformations that do not change the properties of an object, but do change the object's location and orientation</p> <p>► Light rays can reflect or bounce off objects</p> <p>► Light rays reflect off flat mirrored surfaces, causing reflected image</p> <p>► Symmetrical letters do not appear backward when viewed in a mirror, because they are equal, or symmetrical, on both sides</p> <p>► If an object is symmetrical, a line will divide it into two equal parts</p>	<p>Transformation Characteristic Constant Reflection Flip Translation Slide Rotation Turn Location Orientation Reflection Reflect Flipped Light ray Bounce Symmetry</p>	<p>This concept of Transformations and symmetry is only taught in 4th Grade with this much detail.</p> <div style="text-align: center;">  </div> <div style="background-color: #92d050; padding: 5px; text-align: center; margin-top: 20px;"> <p>Physical Science Review and Assessment Week of Nov. 2 - 6</p> </div>	<p>Internet Activities: United Streaming Video: Exploring Light and Color http://www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=7405C85E-837F-4CEC-B0E4-5F351127698A</p> <div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Dana Center Snapshot: Observe a coin to see if it stays the same or remains constant in the following situations: spinning the coin on its edge (rotation); pushing the coin in a straight line (translation); and observing the reflected image of a coin on a shiny surface (reflection). Use mirrors to check for symmetry of natural objects.</p> </div>




Standards 	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.11) Science concepts. The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:</p> <p>(A) test properties of soils including texture, capacity to retain water, and ability to support life;</p> <div data-bbox="71 643 415 886" style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p>Guiding Questions: How is soil formed?</p> </div>	<ul style="list-style-type: none"> ▶ The student knows that the natural world includes earth materials and objects in the sky. ▶ As rock is weathered by wind, water, and temperature changes, soil sediments are formed ▶ Soil texture is determined by the size of particles in the soil ▶ Sand feels coarse, has large particles, and retains little water ▶ Clay soil has tiny particles and feels smooth ▶ Soils with humus and medium particles retain water well ▶ Clay sticks and packs together when wet because of its texture ▶ Soils with more humus are rich in nutrients, and support plant life 	<p>Soil Silt Clay Gravel Humus Particle Sediments Coarse Retain Smooth</p>	<p>Grade 3 (3.11) The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:</p> <p>B. Identify and record properties of soils such as color and texture, capacity to retain water, and ability to support the growth of plant</p> <p>Grade 5 This TEK is not continued in Grade 5 but it is tested.</p> <div data-bbox="1297 821 1367 886" style="text-align: center; margin-top: 20px;">  </div>	<p>Internet Activities: <i>Properties of Soil</i> http://www.utdanacenter.org/sciencetoolkit/instruction/snapshots/4.php</p> <div data-bbox="1545 493 1923 756" style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p>Dana Center Snapshot: Measure the volume of water that flows through soil samples in a filter system.</p> </div> <div data-bbox="1661 805 1755 894" style="text-align: center; margin-top: 20px;">  </div>

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.10) Science concepts. The student knows that certain past events affect present and future events. The student is expected to:</p> <p>(A) identify and observe effects of events that require time for changes to be noticeable including growth, erosion, dissolving, weathering, and flow; and</p> <div data-bbox="65 737 457 1295" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Guiding Questions: How do Weathering and Erosions affect the Earth's Features? What causes earthquakes? How do they change the Earth's surface? How do earthquakes and volcanoes form soil? What changes occur to the physical properties of matter as it dissolves in water? How are mixtures and solutions the same and different?</p> </div>	<p>► The student knows that certain past events affect present and future events</p> <ul style="list-style-type: none"> ► Erosion moves soil to new places ► New landforms are created when wind or water deposit soil; or lava flow hardens on land or previously hardened lava ► Deltas form at the mouth of rivers from deposition of eroded soil ► Weathering is the breakdown of land and rock by water or wind ► A solution is a special type of mixture formed when a solid is dissolved by a liquid ► Not all solids can be dissolved <p>Solutions can be separated by evaporation</p> <div data-bbox="510 1052 877 1295" style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p>Dana Center Snapshot: Identify visible weathering on outside objects like old stone buildings or statues.</p> </div>	<p>Erode Erosion Weathering Deposit Deposition Flow Delta Volcano Landforms Dissolve Solution Mixture Separate Evaporation</p>	<p>Concept introduced in Grade 4.</p> <p>Grade 5 (5.11) Science concepts. The student knows that certain past events affect present and future events. The student is expected to: (A) identify and observe actions that require time for changes to be measurable, including growth, erosion, dissolving, weathering, and flow;</p> <div data-bbox="1182 1019 1507 1203" style="border: 1px solid yellow; padding: 5px; margin-top: 10px;"> <p>Provide students with pictures or models of landforms. Have students describe the pictures or models.</p> </div>	<p>Lesson Idea:</p> <ul style="list-style-type: none"> ► Dissolve chalk in vinegar to demonstrate erosion. <p>Walk around the school campus to find examples of erosion. If after rain, find examples of soil erosion (slope).</p> <ul style="list-style-type: none"> ► Tectonic plate shifting model with chocolate chip cookies (sheet cookies). Press both sides together to show shifting and forming of volcanoes (also for earthquakes and fault lines). <p>Internet Activities:</p> <ul style="list-style-type: none"> ► <i>Questions Answered about Earthquakes, Avalanches, Floods, and Other Disasters</i> http://www.athena.ivv.nasa.gov/curric/land/index.html http://www.volcano.und.nodak.edu/vw.html ► www.sfscience.com ► www.fossweb.com ► Dissolving http://www.eduref.org/Virtual/Lessons/Science/Chemistry/CHM0013.html ► United Streaming Changes in the Properties of Matter Segments. http://www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=6994C0DC-BE6E-46BB-80A8-615B5B25D45C&tabStart=videoSegments

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.10) Science concepts. The student knows that certain past events affect present and future events. The student is expected to:</p> <p>(B) draw conclusions about "what happened before" using fossils or charts and tables.</p>	<p>► The student knows that certain past events affect present and future events.</p> <p>► Fossils are preserved remains of dead organisms, or preserved changes that organisms made in environment</p> <p>► Many fossils are remains of organisms that died and were buried by sediments that became pressed and cemented together</p> <p>► Trace fossils are records preserved in rock that show how an organism changed its environment, such as tunnels, burrows, tracks, or droppings</p> <p>► Fossils provide clues about ancient organisms</p>	<p>Fossils Preserved Remains Buried Cemented Sediments Trace fossil Ancient</p>	<p>Introduction in Grade 4</p> <p>Grade 5 </p> <p>(5.11) Science concepts. The student knows that certain past events affect present and future events. The student is expected to:</p> <p>(B) draw conclusions about "what happened before" using data such as from tree-growth rings and sedimentary rock sequences</p>	<p>Internet Activities: Fossils: http://school.discovery.com/schooladventures/woollymannoth/</p> <div style="text-align: center;">  </div>



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Fourth Six Weeks- Earth Science - **Week One and Two**- Effects of Ocean on Land

Standards 	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.11) Science concepts. The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:</p> <p>(B) summarize the effects of the oceans on land; and</p> <div data-bbox="65 821 506 1109" style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p>Guiding Questions: What forces cause water move? What happens or what changes occur during high and low tide? What are the effects of waves on the shoreline?</p> </div>	<p>► The student knows that the natural world includes earth materials and objects in the sky.</p> <ul style="list-style-type: none"> ► Waves in the ocean are caused by winds blowing over the water ► Waves can change the shoreline by erosion when it carries sand away, or by deposition when it deposits sand in new areas 	<p>Wind Shoreline Tides Waves Current Erode Erosion Deposit Deposition Sand Silt</p>	<p>This concept of the effects of oceans on land is only taught in Grade 4.</p> <div data-bbox="1289 548 1373 623" style="text-align: center; margin: 20px 0;">  </div>	<p>Internet Activities: <i>United Streaming</i> <i>Oceans/Tides/Currents</i> http://www.nws.noaa.gov/ http://www.nos.noaa.gov/welcome.html http://www.nodc.noaa.gov/ http://www.elnino.noaa.gov/</p> <div data-bbox="1612 732 2007 938" style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p>Dana Center Snapshot: Research the effects of erosion on the Texas coastline.</p> </div> <div data-bbox="1761 997 1860 1094" style="text-align: center; margin-top: 20px;">  </div>




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Fourth Six Weeks- Earth Science - **Week Three**- Sun in relation to winds and water cycle

Standards 	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.11)Science concepts. The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:</p> <p>C. Identify the Sun as the major source of energy for the Earth and understand its role in the growth of plants, in the creation of winds, and in the water cycle</p>	<p>► The natural world includes earth materials and objects in the sky.</p> <p>► Without the sun's energy, there would be no life on Earth</p>	<p>energy growth</p>	<p>Grade 3 (3.11) The student knows that the natural world includes earth materials and objects in the sky. The student is expected to: D. Describe the characteristics of the Sun</p> <p>Grade 5 This TEK is not continued in Grade 5 but it is tested</p>	

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Fourth Six Weeks- Earth Science - **Week Four and Five** - Patterns: Weather and objects in the sky

Standards 	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.6) Science concepts. The student knows that change can create recognizable patterns. The student is expected to:</p> <p>(A) identify patterns of change such as in weather, metamorphosis, and objects in the sky;</p> <div data-bbox="65 592 541 1144" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Guiding Questions: How does the movement of the sun effect seasonal changes on Earth? How does Earth compare with other planets? How and Why are some parts of the Earth affected differently as the Earth moves around the sun? What is the effect of the Earth's tilt on the Earth? What are the effects of Earth's Movement? How does the Sun interact with the planets? How does temperature effect air movement? How do meteorologists predict weather?</p> </div> <div data-bbox="331 1206 804 1344" style="background-color: #92d050; border: 1px solid black; padding: 5px; margin-top: 10px; text-align: center;"> <p>Earth Science Review and Assessment Week of Feb 8-12</p> </div>	<p>► The student knows that change can create recognizable patterns</p> <p>► Our solar system consists of nine planets and their moons, asteroids, and comets that revolve in orbits around the Sun</p> <p>► The huge mass of the Sun provides enough gravity to keep planets in orbit around it</p> <p>► Planets rotate on their axis as they revolve around the Sun</p>	<p>Solar System Planet Axis Revolve Revolution Rotation Orbit Satellite Asteroid Meteor Comet Constellation Gravity</p>	<p>Grade 2 (2.7) Science concepts. The student knows that many types of change occur. The student is expected to: (D) observe, measure, and record changes in weather, the night sky, and seasons</p> <p>Skips Grade 3</p> <p>Grade 5 (5.6) Science  concepts. The student knows that some change occurs in cycles. The student is expected to: (A) identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles;</p> <div data-bbox="1182 1255 1577 1393" style="background-color: #ffffcc; border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Invite a local meteorologist to speak to your school's fourth grade level as a group. Area scientists serve as role models.</p> </div>	<p>Lesson Idea: Have students model the movement of rotation and revolution as they say the words. Have them draw and label pictures to compare and contrast the differences between rotation and revolution.</p> <p>Internet Activities: ► Solar System Coloring Book http://www.windows.ucar.edu/tour/link=/coloring_book/java_cb/cb_mercury.html&edu=high ► U.S. Forecast: http://www.cnn.com/WEATHER/ ► Extreme Weather Events: http://www.extremescience.com/weatherport.htm ► Meteorology Guide: http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/home.rxml http://www.elnino.noaa.gov/</p> <div data-bbox="1738 1023 1843 1117" style="text-align: center;">  </div> <div data-bbox="1608 1133 2018 1417" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Dana Center Snapshot: Identify patterns of change in weather by collecting data about seasonal changes in temperature for the different regions of Texas</p> </div>

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.5) Science concepts. The student knows that complex systems may not work if some parts are removed. The student is expected to:</p> <p>A. Identify and describe the roles of some organisms in living systems such as plants in a schoolyard, and parts in nonliving systems such as a light bulb in a circuit</p> <div data-bbox="75 878 489 1349" style="border: 1px solid blue; padding: 5px; margin-top: 20px;"> <p>Dana Center Snapshot: Have students observe a picture of an ecosystem such as a rainforest, desert, or any Texas ecosystem and identify the components of the ecosystem. Have students brainstorm about what would happen to the ecosystem if parts of it were removed.</p> </div>	<ul style="list-style-type: none"> ▶ Complex systems may not work if some parts are removed. ▶ Systems have parts that interact and work together <div data-bbox="548 625 1050 824" style="border: 1px solid orange; border-radius: 50%; padding: 10px; width: fit-content; margin: 20px auto;"> <p>Focus on Living systems</p> </div>	<p>systems parts organisms</p>	<p>Grade 3 (3.5) The students knows that systems exist in the world. The student is expected to:</p> <p>(A) Observe and identify simple systems such as a sprouted seed and a wooden toy car. (B) Observe a simple system and describe the role of various parts such as a yo-yo and string</p> <p>Grade 5  (5) Science concepts. The student knows that a system is a collection of cycles, structures, and processes that interact. The student is expected to:</p> <p>(A) describe some cycles, structures, and processes that are found in a simple system; and (B) describe some interactions that occur in a simple system</p>	<div data-bbox="1793 375 1892 472" style="text-align: center;">  </div>




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Fifth Six Weeks- Life Science - **Week One** -Models

Standards 	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.1) Conduct field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices.</p> <p>(4.2) Use scientific inquiry methods during field and laboratory investigations.</p> <p>(4.3) The student uses critical thinking and scientific problem solving to make informed decisions</p> <p>(C) represent the natural world using models and identify their limitations;</p> <p>(4.4) Know how to use tools and methods to conduct science inquiry.</p>	<p>► Repeated investigations may increase the reliability of results.</p> <div data-bbox="684 662 1045 1166" style="border: 1px solid orange; padding: 5px; margin: 10px 0;"> <p>Guiding Questions: How do we do the work of scientists? How have scientists throughout history impacted our lives and society? How do scientist come up with their ideas and answer their questions? How do scientists use measurement and observation tools to help answer their questions? How do we do the work of scientists in the classroom and in the field? How do scientists research and share data to answer questions? What do scientists learn from models? How do scientists take their questions and turn them into inquiry? What safe practices must we use in the classroom, lab, and field?</p> </div>		<p>These TEKS are similar in Grade 3 and Grade 5 with the exception below:</p> <p>Grade 5 </p> <p>(5.2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:</p> <p>(E) construct simple graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate information</p> <div data-bbox="1104 894 1346 1094" style="border: 1px solid yellow; padding: 5px; margin: 10px 0;"> <p>During this week students will start working on their science project and will create a model to represent the natural world.</p> </div>	<p>Internet Activities: www.ohaus.com/products/education/tutorials.asp?source=2 www.sfscience.com www.fossweb.com <i>Science Fair</i> http://www.freesciencefairproject.com/index.html http://www.all-science-fair-projects.com/category0.html http://sciencefairproject.virtualave.net/</p> <div data-bbox="1398 743 1696 1003" style="border: 1px solid blue; padding: 5px; margin: 10px 0;"> <p>SCIENCE FAIR REMINDERS:</p> <ul style="list-style-type: none"> • No names on front of board • Identify who took the pictures-names not important – just say, “taken by student” “taken by teacher” “taken by parent” • No soil, water, glass, or sharp objects • No live animals or plants – take pictures instead! </div>



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Fifth Six Weeks- Life Science - **Week Two** - Sun: Growth on plants

Standards 	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.11) Science concepts. The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:</p> <p>C. Identify the Sun as the major source of energy for the Earth and understand its role in the growth of plants, in the creation of winds, and in the water cycle.</p>	<p>► The natural world includes earth materials and objects in the sky.</p> <p>► Without the sun's energy, there would be no life on Earth</p> <div data-bbox="661 727 892 873" style="border: 1px solid black; border-radius: 50%; padding: 10px; width: fit-content; margin: 10px auto;"> <p>Focus on Growth of Plants</p> </div>	<p>energy growth</p>	<p>Grade 3 (3.11) The student knows that the natural world includes earth materials and objects in the sky. The student is expected to: D. Describe the characteristics of the Sun</p> <p>Grade 5 This TEK is not continued in Grade 5 but it is tested</p> <p>Grade 5  (5.6) Science concepts. The student knows that some change occurs in cycles. The student is expected to: (C) describe and compare life cycles of plants and animals</p>	<div data-bbox="1388 423 1698 967" style="border: 1px solid blue; padding: 10px;"> <p>Dana Center Snapshot: Experiment to determine the role of the sun in the growth of plants by observing small potted plants. Cover some of the small potted plants with large paper bags and leave the other plants uncover. Place the specimens in the small sunny area and water all with the same amount of water by adding water to a bottom standing tray. Check growth and record results everyday for two weeks.</p> </div> <div data-bbox="1514 1008 1598 1084" style="text-align: center; margin-top: 20px;">  </div>




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Fifth Six Weeks- Life Science - **Week Three and Four** - Preparation for Science Fair

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.2) The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:</p> <p>(A) plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;</p> <p>(B) collect information by observing and measuring;</p> <p>(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;</p> <p>(D) communicate valid conclusions; and</p> <p>(E) construct simple graphs, tables, maps, and charts to organize, examine, and evaluate information</p> <p>(4.3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:</p> <p>(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information</p> <p>(4.4) Know how to use tools and methods to conduct science inquiry.</p>	<p>► repeated investigations may increase the reliability of results.</p> <div data-bbox="667 516 894 591" style="border: 1px solid blue; padding: 2px;"> <p>District Science Fair @ RSE on May 22</p> </div> <div data-bbox="667 646 1062 1136" style="border: 2px solid orange; padding: 5px;"> <p>Guiding Questions: How do we do the work of scientists? How have scientists throughout history impacted our lives and society? How do scientist come up with their ideas and answer their questions? How do scientists use measurement and observation tools to help answer their questions? How do we do the work of scientists in the classroom and in the field? How do scientists research and share data to answer questions? What do scientists learn from models? How do scientists take their questions and turn them into inquiry? What safe practices must we use in the classroom, lab, and field?</p> </div>	<p>experiment conclusion variables investigation interpret testable hypotheses equipment data</p>	<p>These TEKS are similar in Grade 3 and Grade 5 with the exception below:</p> <p>Grade 5  (5.2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:</p> <p>(E) construct simple graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate information</p> <div data-bbox="1073 857 1375 922" style="border: 1px solid gray; padding: 2px;"> <p>Emphasis on Scientific Process and Safety</p> </div> <div data-bbox="1209 967 1457 1211" style="border: 2px solid yellow; padding: 5px; text-align: center;"> <p>Scientific processes should be taught and reinforced throughout the curriculum instead of as an isolated unit.</p> </div>	<p>Internet Activities:</p> <ul style="list-style-type: none"> ► www.ohaus.com/products/education/tutorials.asp?source=2 ► www.sfscience.com ► www.fossweb.com ► <i>Science Fair</i> http://www.freesciencefairproject.com/index.html http://www.all-science-fair-projects.com/category0.html <div data-bbox="1591 678 1675 734" style="text-align: center;">  </div> <div data-bbox="1520 743 1726 1218" style="border: 1px solid blue; padding: 5px;"> <p>SCIENCE FAIR REMINDERS:</p> <ul style="list-style-type: none"> • No names on front of board • Identify who took the pictures-names not important – just say, “taken by student” “taken by teacher” “taken by parent” • No soil, water, glass, or sharp objects • No live animals or plants – take pictures instead! </div>



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Fifth Six Weeks- Life Science - Week Five and Six - Metamorphosis

Standards 	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.6) Science concepts. The student knows that change can create recognizable patterns. The student is expected to:</p> <p>(A) identify patterns of change such as in weather, metamorphosis, and objects in the sky;</p>	<p>► The natural world includes earth materials and objects in the sky.</p> <p>► Without the sun's energy, there would be no life on Earth</p> <div data-bbox="611 748 852 907" style="border: 1px solid black; border-radius: 50%; padding: 5px; width: fit-content; margin-left: auto; margin-right: auto;"> Focus on Metamorphosis </div>	<p>energy growth metamorphosis</p>	<p>Grade 5 </p> <p>(5.6) Science concepts. The student knows that some change occurs in cycles. The student is expected to:</p> <p>(C) describe and compare life cycles of plants and animals</p>	<div data-bbox="1388 513 1728 1040" style="border: 1px solid blue; padding: 10px;"> <p>Dana Center Snapshot: Experiment to determine the role of the sun in the growth of plants by observing small potted plants. Cover some of the small potted plants with large paper bags and leave the other plants uncover. Place the specimens in the small sunny area and water all with the same amount of water by adding water to a bottom standing tray. Check growth and record results everyday for two weeks.</p> </div> <div data-bbox="1503 1078 1583 1146" style="text-align: center; margin-top: 20px;">  </div>



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Fifth Six Weeks- Life Science - **Week Seven** - Survival and Reproduction

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.8)Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to</p> <p>A. Identify characteristics that allow members within a species to survive and reproduce</p>	<p>► Adaptations may increase the survival of members of a species.</p> <p>► Adaptations are special characteristics such as body structures, coverings, or coloration that help an organism survive in its environment.</p>	<p>Adaptation Body structure Characteristic Camouflage Coloration Covering Environment Reproduction</p>	<p>Introduced in 4th grade</p> <p>Grade 5 </p> <p>(5.9) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to:</p> <p>(B) analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem; and</p> <p>(C) predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem.</p>	<p>Internet Activities: <i>The Same But Different</i> <i>Come to Mommy</i> <i>Hunting for Bats</i> http://www.utdanacenter.org/sciencetoolkit/instruction/snapshots/4.php</p> 






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Fifth Six Weeks- Life Science - Week Six

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.8) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to B. Compare adaptive characteristics of various species</p> <div data-bbox="359 776 640 1019" style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p>Dana Center Snapshot: Compare adaptations in various species of reptiles by researching characteristics of body parts, coloration, and behaviors.</p> </div>	<ul style="list-style-type: none"> ▶ Adaptations may increase the survival of members of a species. ▶ Adaptations can be compared to discover similarities and differences between species ▶ Some animals' adaptations are better suited to specific environments 	<p>Adaptation Species Migration Hibernation Symbiosis Parasite Host Habitat Environment</p>	<p>Introduced in 4th grade</p> <p>Grade 5 </p> <p>(5.9) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to:</p> <p>(A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem</p>	<p>Internet Activities: <i>Patterns and Adaptations in Plants and Animals</i> <i>The Things We Do</i> http://www.utdanacenter.org/sciencetoolkit/instruction/snapshots/4.php</p> <p>Lesson Idea: THUMBS OUT! Tape the thumb of each student to the index finger so they can not move it or use it by itself. Ask students to predict how "adaptation" will be important for them to survive for the next 30 minutes. Ask them to: draw and color a picture, build a cube or geometric shape with blocks, cut a circle from a piece of paper, and sharpen a pencil to draw a 4 inch line using a ruler.</p> <div data-bbox="1564 1117 1642 1198" style="text-align: right; margin-top: 20px;">  </div>



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Sixth Six Weeks- Life Science - **Week One** -Adaptations and Earth Day Celebrations

 Standards 	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.8) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to</p> <p>B. Compare adaptive characteristics of various species</p> <div data-bbox="315 625 609 941" style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p>Dana Center Snapshot: Compare adaptations in various species of reptiles by researching characteristics of body parts, coloration, and behaviors.</p> </div> <div data-bbox="325 1006 619 1282" style="border: 1px solid blue; padding: 5px; margin-top: 10px; text-align: center;">  <p>40th Anniversary of Earth Day</p> </div>	<ul style="list-style-type: none"> ▶ Adaptations may increase the survival of members of a species. ▶ Adaptations can be compared to discover similarities and differences between species ▶ Some animals' adaptations are better suited to specific environments 	<p>Adaptation Species Migration Hibernation Symbiosis Parasite Host Habitat Environment</p>	<p>Introduced in 4th grade</p> <p>Grade 5 </p> <p>(5.9) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to:</p> <p>(A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem</p>	<p>Internet Activities: <i>Patterns and Adaptations in Plants and Animals</i> <i>The Things We Do</i> http://www.utdanacenter.org/sciencetoolkit/instruction/snapshots/4.php</p> <p>Lesson Idea: THUMBS OUT! Tape the thumb of each student to the index finger so they can not move it or use it by itself. Ask students to predict how "adaptation" will be important for them to survive for the next 30 minutes. Ask them to: draw and color a picture, build a cube or geometric shape with blocks, cut a circle from a piece of paper, and sharpen a pencil to draw a 4 inch line using a ruler.</p> <div data-bbox="1617 1071 1701 1153" style="text-align: right;">  </div>


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Sixth Six Weeks- Life Science - Week Two -Adaptations

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.8) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to</p> <p>B. Compare adaptive characteristics of various species</p> <div data-bbox="317 678 611 997" style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p>Dana Center Snapshot: Compare adaptations in various species of reptiles by researching characteristics of body parts, coloration, and behaviors.</p> </div>	<ul style="list-style-type: none"> ▶ Adaptations may increase the survival of members of a species. ▶ Adaptations can be compared to discover similarities and differences between species ▶ Some animals' adaptations are better suited to specific environments 	<p>Adaptation Species Migration Hibernation Symbiosis Parasite Host Habitat Environment</p>	<p>Introduced in 4th grade</p> <p>Grade 5  (5.9) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to:</p> <p>(A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem</p>	<p>Internet Activities: <i>Patterns and Adaptations in Plants and Animals</i> <i>The Things We Do</i> http://www.utdanacenter.org/sciencetoolkit/instruction/snapshots/4.php</p> <p>Lesson Idea: THUMBS OUT! Tape the thumb of each student to the index finger so they can not move it or use it by itself. Ask students to predict how "adaptation" will be important for them to survive for the next 30 minutes. Ask them to: draw and color a picture, build a cube or geometric shape with blocks, cut a circle from a piece of paper, and sharpen a pencil to draw a 4 inch line using a ruler.</p> <div data-bbox="1577 1105 1656 1183" style="text-align: center; margin-top: 20px;">  </div>



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Sixth Six Weeks- Life Science - **Week Three** - Inherited Traits and Learned Characteristics

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.9) Science concepts. The student knows that many likenesses between offspring and parents are inherited or learned. The student is expected to:</p> <p>(A) distinguish between inherited traits and learned characteristics; and</p> <p>(B) identify and provide examples of inherited traits and learned characteristics</p> <div data-bbox="325 776 619 1177" style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Guiding Questions: What is heredity? What are inherited traits? What kinds of traits do we inherit? How do genes determine traits? What kinds of characteristics are learned? What is the difference between learned characteristics and inherited traits? How do inherited/learned characteristics help us and other animals survive?</p> </div>	<p>► Many likenesses between offspring and parents are inherited or learned.</p> <p>► Traits are characteristic of an organism, such as hair color</p> <p>► Plants and animals resemble others of their species because of inherited traits</p> <p>► For every trait seen in a plant or animal, there are two traits responsible; one from each parent</p> <p>► Learned behaviors must be taught, practiced, or modeled</p> <p>► Learned responses to the environment can also result from experience, with avoidance of unpleasant experiences</p>	<p>Inherited trait Characteristic Resemble Species Offspring Parent Learned behavior Instinct Reflex Stimulus Response</p>	<p>Grade 3 (3.10) Science concepts. The student knows that many likenesses between offspring and parents are inherited from the parents. The student is expected to: (A) identify some inherited traits of plants; and (B) identify some inherited traits of animals.</p> <p>Grade 5 (5.10) Science concepts. The student knows that likenesses between offspring and parents can be inherited or learned. The student is expected to: (A) identify traits that are inherited from parent to offspring in plants and animals; and (B) give examples of learned characteristics that result from the influence of the environment.</p>	<p>Students watch United Streaming video on learned characteristics and behavior – “Concepts in Nature: Instincts in Animals”. www.unitedstreaming.com/search/assetDetail.cfm?guidAssetID=24A908BF-B21C-432C-8647-C3040AFA498F</p> <p>Genetics http://www.pbskids.org/zoom/sci/tongue_rollers.html http://www.innerbody.com http://www.surry.com/frame.html http://www.innerbody.com/htm/body.html</p> <p>Interactive Notebook Idea: Students draw the stages of their development from their birthday until now (timeline or chart would work well also).</p> <div data-bbox="1606 917 1669 974" style="text-align: center;">  </div> <div data-bbox="1459 1023 1764 1274" style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p>Dana Center Snapshot: Research domestic and wild cats. Have students create a T-Chart to distinguish inherited traits from learned characteristics. " Good place to use a thinking map"</p> </div>

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Sixth Six Weeks- Life Science - **Week Four** - Species Past and Present

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.8) Science concepts. The student knows that adaptations may increase the survival of members of a species. The student is expected to:</p> <p>(C) identify the kinds of species that lived in the past and compare them to existing species</p>	<p>► Adaptations may increase the survival of members of a species</p> <p>► Fossils of extinct organisms are used to compare for similarities and differences in existing species</p>	<p>Survival Extinction Endangered Exist Ice age Fossils Species Compare Population</p>	<p>This concept of identifying species from the past and comparing them to the existing ones is only taught in 4th Grade with this much detail.</p> <p style="text-align: center;"></p>	<p>Search the net for prehistoric pictures</p> <div style="border: 1px solid blue; padding: 5px; margin-top: 20px;"> <p>Dana Center Snapshot: Research prehistoric animals and relate them to modern day animals that can be considered their counterparts, such as mammoth/elephant, saber-toothed tiger/tiger, and others.</p> </div> <p style="text-align: center; margin-top: 20px;"></p>

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Sixth Six Weeks- Life Science - **Week Five** - Species Past and Present

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>(4.1) Conduct field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices.</p> <p>(4.2) Use scientific inquiry methods during field and laboratory investigations.</p> <p>(4.3) The student uses critical thinking and scientific problem solving to make informed decisions</p> <p>(4.4) Know how to use tools and methods to conduct science inquiry.</p>	<p>► Repeated investigations may increase the reliability of results.</p> <p>District Science Fair @ RSE on May 22</p> <p>Guiding Questions: How do we do the work of scientists? How have scientists throughout history impacted our lives and society? How do scientist come up with their ideas and answer their questions? How do scientists use measurement and observation tools to help answer their questions? How do we do the work of scientists in the classroom and in the field? How do scientists research and share data to answer questions? What do scientists learn from models? How do scientists take their questions and turn them into inquiry? What safe practices must we use in the classroom, lab, and field?</p>		<p>These TEKS are similar in Grade 3 and Grade 5 with the exception below:</p> <p>Grade 5</p> <p>(5.2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:</p> <p>(E) construct simple graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate information</p>	<p>SCIENCE FAIR REMINDERS:</p> <ul style="list-style-type: none"> • No names on front of board • Identify who took the pictures- names not important – just say, “taken by student” “taken by teacher” “taken by parent” • No soil, water, glass, or sharp objects • No live animals or plants – take pictures instead! <p>Life Science Review and Assessment Week of May 24-28th</p>

Scientific processes should be taught and reinforced throughout the curriculum instead of as an isolated unit.

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Sixth Six Weeks- Life Science - **Week Seven** - Review Themes

Standards	Concepts	Vocabulary	Prerequisites	Resources/ Materials
<p>Introduction Part 2</p> <p>Recurring Themes are pervasive in science, mathematics and technology. These ideas transcend disciplinary boundaries and include patterns, cycles, systems, models, change and constancy.</p> <div data-bbox="344 930 594 1076" style="border: 3px double green; padding: 5px; text-align: center; margin: 10px 0;"> <p>Recurring Themes</p> </div>	<ul style="list-style-type: none"> ▶ A system is a collection of cycles, structures, and processes that interact. ▶ All systems have basic properties that can be described in terms of space, time, energy, and matter. ▶ Change and constancy occur in systems and can be observe and measured as patterns. ▶ Patterns help predict what will happen next and can change over time. 	<p>systems change Constancy pattern cycles models</p>	<p>These concepts are part of Kinder through 5th grade.</p>	<p>Create a Tree Map to sort out the different Themes and the science concepts that represent each theme.</p>