



**Science Fourth Grade GT - Curriculum Guide**  
**By strand**

**Irving Independent School District**



**Essential Questions:**

- What properties and patterns are in my environment?
- How are models similar to or different from the natural world?
- What would happen if parts of a system were added or removed?
- What could make the changes to occur faster or slower?

- \* How are properties and patterns used in constructing models?
- \* How are the parts of a system connected?
- \* What causes changes?
- \* What causes scientific explanations to change?

TEKS Knowledge & Skills		Student Expectation	TAKS Objective	1	2	3	4	5	Observable Behavior	Resources
Life Science	4.5 The student knows that complex systems may not work if some parts are removed.	a. Identify and describe the roles of some organisms in living systems such as plants in a schoolyard		√	√	√	√	√	<ul style="list-style-type: none"> <li>• observing and describing structural characteristics and behaviors</li> <li>• recording observations in an animal log</li> <li>• describe the habitats of various nocturnal animals</li> </ul>	<ul style="list-style-type: none"> <li>• Structures of Life Kit</li> <li>• Textteams Vista: Constancy and Change, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf</a></li> <li>• Textteams Vista; Systems, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/4systems.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/4systems.pdf</a></li> <li>• McGraw Hill Textbook; pg. 274-278</li> </ul>
	Focus Question:  What are some of the living and nonliving elements that surround an animal?	b. Predict and draw conclusions about what happens when part of a system is removed		√	√	√	√	√	<ul style="list-style-type: none"> <li>• habitat information table</li> <li>• predict, observe and record the results of an animals response to a change in a system.</li> <li>• Predict outcome if part of plant is removed</li> </ul>	<ul style="list-style-type: none"> <li>• Structures of Life Kit</li> <li>• Textteams Vista: Constancy and Change, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf</a></li> <li>• Textteams Vista; Systems, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/4systems.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/4systems.pdf</a></li> </ul>

**Life Science**

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4.8 The student knows that adaptations may increase the survival of members of a species.	a. identify characteristics that allow members within a species to survive and reproduce		√	√	√	√	√		<ul style="list-style-type: none"> <li>record a daily behavior</li> <li>research and determine the cause/effect of problems of animals in various environments: rabbits in Australia, decrease of bison, eagles in US</li> </ul>	<ul style="list-style-type: none"> <li>Structures of Life Kit</li> <li>Snapshot 4.8A</li> <li>Textteams Vista: Constancy and Change, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf</a></li> <li>McGraw Hill Textbook; pg. 274-278</li> </ul>
<p>Focus Question:</p> <p>Based on what you know, how would you explain an adaptation?</p>	b. compare adaptive characteristics of various species		√	√	√	√	√		<ul style="list-style-type: none"> <li>record animal life cycle</li> <li>label body parts and evaluate function</li> </ul>	<ul style="list-style-type: none"> <li>Structures of Life Kit</li> <li>Snapshot 4.8B</li> <li>Textteams Vista: Constancy and Change, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf</a></li> <li>McGraw Hill Textbook; pg. 274-278</li> <li>Project Wild activities</li> </ul>
	c. identify the kinds of species that lived in the past and compare them to existing species		√	√	√	√	√		<ul style="list-style-type: none"> <li>compare and contrast animals within the same habitat. Ie; desert plants, rainforest plants,</li> </ul>	<ul style="list-style-type: none"> <li>Snapshot 4.8C</li> <li>Textteams Vista: ---- Constancy and Change, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf</a></li> <li>-McGraw Hill Textbook; pg. 274-278</li> <li>-Ranger Rick</li> </ul>

										Naturescope "Digging into Dinosaurs"
4.9 The student knows that many likenesses between offspring and parents are inherited or learned.	a. distinguish between inherited traits and learned characteristics		√	√	√	√	√		<ul style="list-style-type: none"> <li>Predict, and record an animals response to a sudden change in a habitat</li> <li>create a table listing learned/inherited traits</li> <li>analyze why those behaviors are important to the animal</li> <li>design a genealogy chart for eye color in student's family</li> </ul>	<ul style="list-style-type: none"> <li>Snapshot 4.9A</li> <li>-Structures of Life Kit</li> <li>-McGraw Hill Textbook; pg. 280-81, 283, 262, 269-73</li> </ul>
Focus Question: What data could you use to make a conclusion of inherited or learned traits?	b. identify and provide examples of inherited traits and learned characteristics		√	√	√	√	√		<ul style="list-style-type: none"> <li>record animals structures and behaviors</li> <li>create a chart of inherited and learned traits for a human body</li> </ul>	<ul style="list-style-type: none"> <li>Structures of Life Kit</li> <li>Snapshot 4.9B</li> <li>McGraw Hill Textbook; pg. 280-81, 283, 262, 269-73</li> </ul>
4.5 The student knows that complex systems may not work if some parts are removed.	a. Identify and describe the roles of some organisms in living systems such as plants in a schoolyard and parts in a nonliving system such as a light bulb in a circuit		√	√	√	√	√		<ul style="list-style-type: none"> <li>observe the interaction of wheels, tires weights in system</li> <li>Observe the interaction of batteries, wires, and bulbs</li> <li>Design a flow chart of a system</li> </ul>	<ul style="list-style-type: none"> <li>Electrical Circuits Kit</li> <li>Motion and Design Kit</li> <li>McGraw Hill Textbook; Unit 5</li> <li>Snapshot, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/4th_gradetext.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/4th_gradetext.pdf</a></li> </ul>
Focus Question: Why do you think electricity flows in a system?	b. Predict and draw conclusions about what happens when part of a system is removed		√	√	√	√	√		<ul style="list-style-type: none"> <li>explain how a switch can interrupt the flow of electricity in a system.</li> <li>Determine the</li> </ul>	<ul style="list-style-type: none"> <li>Electrical Circuits Kit</li> <li>Motion and Design Kit</li> <li>McGraw Hill Textbook; Unit 5</li> </ul>

								minimum parts required for a system to operate	<ul style="list-style-type: none"> <li>• Snapshot, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/4th_gradetext.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/4th_gradetext.pdf</a></li> </ul>
4.6 The student knows that change can create recognizable patterns.	a. identify patterns of change such as in weather, metamorphosis, and objects in the sky	4	√	√	√	√	√	<ul style="list-style-type: none"> <li>• identify patterns of change</li> <li>• describe the structure of Earth and the Moon with their relationship</li> <li>• identify patterns in plate tectonics</li> </ul>	<ul style="list-style-type: none"> <li>• McGraw Hill Textbook; pg; 338-339</li> <li>• AIMS <u>Overhead</u>, <u>Underfoot</u></li> <li>• “When It’s Hot, It’s Hot”</li> <li>• webquest: <a href="http://www.cesa8.k12.wi.us/it/webquests/Lifecycles/frogpage.htm">www.cesa8.k12.wi.us/it/webquests/Lifecycles/frogpage.htm</a></li> <li>•</li> </ul>
Focus Question:  What evidence of a pattern can you find found in a system?	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		√	√	√	√	√	<ul style="list-style-type: none"> <li>• identify that mirror images are the result of light reflected from a surface</li> <li>• identify that light travels in straight lines</li> <li>• illustrate that an image produces by something that reflects is always reversed right to left</li> <li>• interpret a technical drawing</li> </ul>	<ul style="list-style-type: none"> <li>• Motion and Design Kit</li> <li>• <u>Everyday Mathematics</u> lessons</li> <li>• McGraw Hill Textbook; pg; 338-339</li> <li>• <a href="http://www.camosun.bc.ca/~jbritton/jbsymteslk.htm">www.camosun.bc.ca/~jbritton/jbsymteslk.htm</a></li> <li>• Nature’s Reflection activities</li> </ul>
	c. use reflections to verify that a natural object has symmetry		√	√	√	√	√	<ul style="list-style-type: none"> <li>• * discover lines of symmetry in familiar and unfamiliar shapes.</li> </ul>	<ul style="list-style-type: none"> <li>• Snapshot 4.6C</li> <li>• <u>Everyday Mathematics</u> lessons</li> <li>• McGraw Hill Textbook; pg; 214-17, 226, 248,251</li> <li>• <a href="http://www.camosun.bc.ca/~jbritton/jbsymteslk.htm">www.camosun.bc.ca/~jbritton/jbsymteslk.htm</a></li> <li>• Nature’s Reflection activities</li> </ul>
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Earth Science

4.7 The student knows that matter has physical properties.	a. observe and record changes in the states of matter caused by the addition or reduction of heat		√	√	√	√	√	<ul style="list-style-type: none"> <li>Describe how heat/cold changes food</li> <li>compare and contrast properties of water when it is heated and cooled.</li> <li>Observe the evaporation for water from stream tables</li> </ul>	<ul style="list-style-type: none"> <li>Landforms Kit</li> <li>McGraw Hill Textbook; pg: 108- 124</li> </ul>
Focus Question: What examples can you find to define the states of matter?	a. conduct tests, compare data, and draw conclusions about physical properties of matter including states of matter, conduction, density, and buoyancy.		√	√	√	√	√	<ul style="list-style-type: none"> <li>describe and classify matter by its characteristics</li> <li>measure matter in different ways</li> <li>identify matter as made up of tiny particles that can be mixed and combined</li> <li>identify conductors and insulators</li> <li>observe inertia, mass and force</li> </ul>	<ul style="list-style-type: none"> <li>Electrical Circuits Kit</li> <li>Motion and Design</li> <li>McGraw Hill Quick Labs; pg. 119, 117, 115</li> </ul>
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4.5 The student knows that complex systems may not work if some parts are removed.	a. Identify and describe the roles of some organisms in living systems such as plants in a schoolyard and parts in a nonliving system such as a light bulb in a circuit		√	√	√	√	√	<ul style="list-style-type: none"> <li>explain how fossils can provide other types of information about organisms of the past</li> <li>describe how climate is affected by landforms</li> </ul>	<ul style="list-style-type: none"> <li>Landforms Kit</li> <li>Snapshot 4.5A</li> <li>McGraw Hill Textbook pg. 160</li> <li>Textteams Vista; Systems</li> <li><a href="http://www.texasciencecenter.org/pdfs/Grade4Lesson.pdf">http://www.texasciencecenter.org/pdfs/Grade4Lesson.pdf</a></li> </ul>
Focus Question: What is the system of a rock?	b. Predict and draw conclusions about what happens when part of a system is removed		√	√	√	√	√	<ul style="list-style-type: none"> <li>* determine how fossils give information about the past</li> </ul>	<ul style="list-style-type: none"> <li>Textteams vista; Properties, Patterns, and Models</li> <li>-Ranger Rick Naturescope "Digging into Dinosaurs"</li> </ul>
4.6 The student knows	a. identify patterns of change such as in							<ul style="list-style-type: none"> <li>observe stream</li> </ul>	<ul style="list-style-type: none"> <li>Landforms Kit</li> </ul>

that change can create recognizable patterns. The student is expected to:	weather, metamorphosis, and objects in the sky							<ul style="list-style-type: none"> <li>tables</li> <li>chart courses of comets</li> </ul>	
4.10 The student knows that certain past events affect present and future events.	a. identify and observe effects of events that require time for changes to be noticeable including growth, erosion, dissolving, weathering, and flow				√	√	√	<ul style="list-style-type: none"> <li>identify agents that wear away Earth's surface</li> </ul>	<ul style="list-style-type: none"> <li>Landforms Kit</li> <li>McGraw Hill Textbook pg. 174</li> </ul>
Focus Question: What would result if no weathering ever occurred?	b. draw conclusions about "what happened before" using fossils or charts and tables					√	√	<ul style="list-style-type: none"> <li>predict how fossils could give information about the past</li> <li>describe how landforms affect climate</li> </ul>	<ul style="list-style-type: none"> <li>McGraw Hill Textbook pg. 160</li> <li>Textteams Vista; Constancy and Change, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/grade_4_c&amp;c.pdf</a></li> <li>-Ranger Rick Naturescope "Digging into Dinosaurs"</li> </ul>
4.11 The student knows that the natural world includes earth materials and objects in the sky.	a. test properties of soils including texture, capacity to retain water, and ability to support life	4			√	√	√	<ul style="list-style-type: none"> <li>explore and describe three different soil samples</li> <li>relate pore spaces to soil permeability</li> <li>explain the importance of soil and ways that we can help preserve it</li> <li>explain the formation of caves</li> </ul>	<ul style="list-style-type: none"> <li>Landforms Kit</li> <li>McGraw Hill Textbook pg. 184-193</li> <li>Textteams Vista; Properties, Patterns, and Models, <a href="http://www.tenet.edu/teks/science/stacks/instruct/vistas/ppm4.pdf">http://www.tenet.edu/teks/science/stacks/instruct/vistas/ppm4.pdf</a></li> <li>*Textteams Vista; Constancy and Change, <a href="http://www.texas-sciencecenter.org/pdfs/Grade4Lesson.pdf">http://www.texas-sciencecenter.org/pdfs/Grade4Lesson.pdf</a></li> </ul>
Focus Question: How would you evaluate the causes of erosion?	b. summarize the effects of the oceans on land	4			√	√	√	<ul style="list-style-type: none"> <li>identify forces that change Earth's surface</li> <li>describe how an ocean affects the land and how wind causes erosion.</li> </ul>	<ul style="list-style-type: none"> <li>Landforms Kit</li> <li>McGraw Hill Textbook pg. 394-403</li> <li>Textteams Vista; Properties, Patterns, and Models</li> </ul>

	c. identify the Sun as the major source of energy for the Earth and understand its role in the growth of plants, in creation of winds, and in the water cycle.	4			√	√	√	<b>T</b>	<ul style="list-style-type: none"> <li>describe the steps of the water cycle in terms of heat energy</li> <li>describe how heat causes wind, ocean currents</li> </ul>	<ul style="list-style-type: none"> <li>McGraw Hill Textbook pg. 396-397</li> <li>Textteams Vista; Properties, Patterns, and Models</li> </ul>
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4.1 The student conducts field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices	a. demonstrate safe practices during field and laboratory investigations.		√	√	√	√	√	<b>T</b>	<ul style="list-style-type: none"> <li>identify safe and appropriate practices to be used when conducting field and laboratory investigations in an environmentally friendly and ethical manner.</li> <li>Identify possible dangers of experiment</li> </ul>	<ul style="list-style-type: none"> <li>All Science Kits</li> <li>Textteams Vistas</li> <li>Science Snapshots</li> <li>* McGraw Hill Textbook</li> </ul>
Focus Question: What is a laboratory investigation?	b. make wise choices in the use and conservation of resources and the disposal or recycling of materials		√	√	√	√	√		<ul style="list-style-type: none"> <li>List reasons why experiments are done</li> <li>List several ways to conduct experiment</li> </ul>	<ul style="list-style-type: none"> <li>All Science Kits</li> <li>Textteams Vistas</li> <li>Science Snapshots</li> <li>* McGraw Hill Textbook</li> </ul>
4.2 The student uses scientific inquiry methods during field and laboratory investigations.	a. plan and implement descriptive investigations including asking well-defined question, formulating testable hypothesis, and selecting and using equipment and technology		√	√	√	√	√		<ul style="list-style-type: none"> <li>distinguish between a testable question and non-testable question</li> <li>select and use appropriate equipment for an investigation</li> <li>use technology equipment to test hypotheses</li> <li>write experiments for younger students</li> </ul>	<ul style="list-style-type: none"> <li>All Science Kits</li> <li>Textteams Vistas</li> <li>Science Snapshots</li> <li>McGraw Hill Textbook</li> </ul>
Focus Question: What does it mean to use the scientific method?	b. collect information by observing and measuring		√	√	√	√	√		<ul style="list-style-type: none"> <li>use available manipulative to collect information and draw conclusions.</li> </ul>	<ul style="list-style-type: none"> <li>All Science Kits</li> <li>Textteams Vistas</li> <li>Science Snapshots</li> <li>McGraw Hill Textbook</li> <li>Student science</li> </ul>



conduct science inquiry.	sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses							solve questions	<ul style="list-style-type: none"> <li>McGraw Hill Textbook</li> </ul>
Focus Question: Why do scientists use tools?	b. demonstrate that repeated investigations may increase the reliability of results		√	√	√	√	√	<ul style="list-style-type: none"> <li>explain and describe how results differ based on the material and sequence process</li> <li>* explain differences in repeated results when variable are changed</li> </ul>	<ul style="list-style-type: none"> <li>All Science Kits</li> <li>Textteams Vistas</li> <li>Science Snapshots</li> <li>McGraw Hill Textbook</li> </ul>

5.4 The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:	a. collect and analyze information using tools including calculators, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, compasses, balances, hot plates, meter sticks, timing devices, magnets, collecting nets, and safety goggles							<ul style="list-style-type: none"> <li>take photographs of their stream tables in action to compare with the aerial photographs</li> </ul>	<ul style="list-style-type: none"> <li>Landforms Kit</li> </ul>
5.11 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							<ul style="list-style-type: none"> <li>Set up stream tables with earth materials and observe the processes of erosion and deposition</li> </ul>	<ul style="list-style-type: none"> <li>Landforms Kit</li> </ul>
5.12 The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:	A. interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering							<ul style="list-style-type: none"> <li>set up stream tables/observe process of erosion</li> <li>identify landforms created by processes</li> </ul>	Landforms Kit Investigations 2,3
	b. describe processes responsible for the formation of coal, oil, gas, and minerals							Observe the processes responsible for the formation of minerals	Landforms Kit