

## Science Instructional Guide for Grade 4

1 <sup>st</sup> Nine Weeks	2 <sup>nd</sup> Nine Weeks	3 <sup>rd</sup> Nine Weeks	4 <sup>th</sup> Nine Weeks
<p><b>Scott Foresman</b> <b>Introduction to Scientific Thinking</b> <b>#1</b> pp. xx-xxxii</p> <p><b>Scott Foresman</b> <b>Unit B Earth Science</b> <b>#2</b> <u>Chapter 6</u> Directed Inquiry Lesson 1 Lesson 2 <i>Omit Lesson 3</i> <i>Omit Lesson 4</i> <i>Omit Guided Inquiry</i></p> <p><b>#3</b> <u>Chapter 7</u> Directed Inquiry Lesson 1 Lesson 2 Guided Inquiry Math in Science</p> <p><i><u>Omit Chapter 8</u></i></p> <p><b>#4</b> <u>Chapter 9</u> Directed Inquiry Lesson 1 Lesson 2 Lesson 3 Guided Inquiry</p> <p><b>#5</b> <u>Chapter 10</u> <i>Omit Directed Inquiry</i> Lesson 1 <i>Omit Lesson 2</i> <i>Omit Guided Inquiry</i> Math in Science Full Inquiry</p> <p><b>Unit C Physical Science</b> <b>#6</b> <u>Chapter 11</u> Directed Inquiry Lesson 1 Lesson 2 Lesson 3 Lesson 4 Guided Inquiry Math in Science</p>	<p><b>Scott Foresman</b> <b>Unit C Physical Science</b> <b>#7</b> <u>Chapter 12</u> <i>Omit Directed Inquiry</i> Lesson 1 Lesson 2 Guided Inquiry Math in Science</p> <p><b>#8</b> <u>Chapter 13</u> Directed Inquiry Lesson 1 Lesson 2 Lesson 3 Lesson 4 Lesson 5 Guided Inquiry</p> <p><b>#9</b> <u>Chapter 14</u> Directed Inquiry Lesson 1 Lesson 2 <i>Omit Lesson 3</i> Lesson 4 Guided Inquiry</p>	<p><b>Scott Foresman</b> <b>Unit C Physical Science</b> <b>#10</b> <u>Chapter 15</u> <i>Omit Directed Inquiry</i> Lesson 1 Lesson 2 <i>Omit Lesson 3</i> Guided Inquiry</p> <p><i><u>Omit Chapter 16</u></i></p> <p><b>Scott Foresman</b> <b>Unit D</b> <b>Space and Technology</b> <b>#11</b> <u>Chapter 17</u> <i>Omit Directed Inquiry</i> Lesson 1 Lesson 2 Guided Inquiry Math in Science</p> <p><b>#12</b> <u>Chapter 18</u> Directed Inquiry Lesson 1 Lesson 2 Lesson 3 Lesson 4 Math in Science <i>Omit Guided Inquiry</i> Full Inquiry</p> <p><i><u>Omit Chapter 19</u></i></p>	<p><b>Scott Foresman</b> <b>Unit A Life Science</b> <b>#13</b> <u>Chapter 1</u> Directed Inquiry Lesson 1 Lesson 2 <i>Omit Lesson 3</i> Lesson 4 Lesson 5 <i>Omit Guided Inquiry</i></p> <p><b>#14</b> <u>Chapter 2</u> Directed Inquiry Lesson 1 <i>Omit Lesson 2</i> <i>Omit Lesson 3</i> <i>Omit Lesson 4</i> Guided Inquiry Math in Science</p> <p><b>#15</b> <u>Chapter 3</u> Directed Inquiry Lesson 1 Lesson 2 Lesson 3 Guided Inquiry Math in Science</p> <p><b>#16</b> <u>Chapter 4</u> Directed Inquiry Lesson 1 Lesson 2 Lesson 3 Lesson 4 Guided Inquiry</p> <p><b>#17</b> <u>Chapter 5</u> Directed Inquiry Lesson 1 Lesson 2 Lesson 3 <i>Omit Lesson 4</i> <i>Omit Guided Inquiry</i> Full Inquiry</p>

## FOURTH GRADE #1

### Scott Foresman Introduction to Scientific Thinking

BENCHMARKS AND <i>ITEM CLARIFICATION</i>	AA or CS	Test Item Code
<b>The student...</b>		
SC.H.1.2.1 knows that it is important to keep accurate records and descriptions to provide information and clues on causes of discrepancies in repeated experiments. <i>Identifies and explains the reasons for documenting scientific activities.</i>	AA	MC
SC.H.1.2.2 knows that a successful method to explore the natural world is to observe and record, and then analyze and communicate the results. (Also assesses H.1.2.4 and H.3.2.2) <i>Identifies, explains, and describes, or applies the scientific process (i.e., accurately reporting and analyzing data, reaching logical conclusions that reflect the data, repeating investigations for validity, asking new questions, and communicating results).</i>	AA	MC, SR, ER
SC.H.1.2.3 knows that to work collaboratively, all team members should be free to reach, explain, and justify their own individual conclusions. (Not assessed)		Not assessed
SC.H.1.2.4 knows that to compare and contrast observations and results is an essential skill in science. (Assessed as H.1.2.2)	AA	MC, SR, ER
SC.H.1.2.5 knows that a model of something is different from the real thing, but can be used to learn something about the real thing. <i>Identifies and analyzes models that are used to interpret real-world situations.</i>	CS	MC
SC.H.2.2.1 knows that natural events are often predictable and logical. <i>Uses information about nature to forecast events and reach conclusions.</i>	CS	MC
SC.H. 3.2.1 understands that people, alone or in groups, invent new tools to solve problems and do work that affects aspects of life outside of science. (Also assesses H.3.2.3) <i>Identifies ways in which people impact others, including inventions and discoveries.</i>	AA	MC, SR
SC.H.3.2.2 knows that data are collected and interpreted in order to explain an event or concept. (Assessed as H.1.2.2)	AA	MC, SR, ER
S.C.H.3.2.3 knows that before a group of people build something or try something new, they should determine how it may affect other people. (Assessed as H.3.2.1)	AA	MC, SR
SC.H.3.2.4 knows that through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas.	AA	MC, SR

Benchmark Codes: AA = Annually Assessed Benchmarks; CS = Content-Sampled Benchmarks  
Test Item Codes: MC = Multiple Choice; SR = Short Response; ER = Extended Response

### SCOTT FORESMAN SCIENCE

<b>Scott Foresman Textbook</b>	The following pages are a good introduction to Strand H: <ul style="list-style-type: none"> <li>• How to Read Science pp. xx-xxi</li> <li>• Science Process Skills pp. xxii-xxv</li> <li>• Using Scientific Methods for Science Inquiry pp. xxvi-xxvii</li> <li>• Science Tools pp. xxviii-xxx</li> <li>• Safety in Science pp. xxxii</li> </ul>
<b>Vocabulary</b> Bold = FCAT Underscore = Marzano	experiment, <u>hypothesis</u> , investigation, <u>microscope (microscopic)</u> , <u>scientific method</u> , variable

### OTHER RESOURCES

<b>CIA</b> <a href="http://www.cs.ocps.net">www.cs.ocps.net</a>	
<b>AIMS</b> <a href="http://www.aimsedu.org">www.aimsedu.org</a>	<i>Popping With Power: Puff Mobiles; Math + Science=A Solution: The Big Banana Peel; Vol. 10, No. 5: Oranges for the Most Part; Hardhatting in a Geo-World: Are You a Square?</i>
<b>Literature</b>	
<b>Other</b>	Science Court: <i>Statistics</i> , Tom Snyder Productions GEMS, <i>Bubble-ology: Comparing Bubble Solutions</i> , <a href="http://www.lhsgems.org">www.lhsgems.org</a>

### NOTES

**Strand H should be integrated throughout the year as students engage in inquiry.**

<b>FOURTH GRADE #2</b>			
<b>Earth Science</b>			
<b>Scott Foresman Chapter 6: Water Cycle and Weather</b>			
<b>BENCHMARKS AND ITEM CLARIFICATION</b>		<b>AA or CS</b>	<b>Test Item Code</b>
<b>The student...</b>			
SC.D.1.2.2 knows that 75 percent of the surface of the Earth is covered by water. (Assessed as D.1.2.4)		AA	MC, SR, ER
SC.D.1.2.3 knows that the water cycle is influenced by temperature, pressure, and the topography of the land. <i>Identifies the effect of different variables on the water cycle.</i>		CS	MC
<b>Benchmark Codes:</b> AA = <b>Annually Assessed Benchmarks</b> ; CS = Content-Sampled Benchmarks <b>Test Item Codes:</b> MC = Multiple Choice; SR = Short Response; ER = Extended Response			
<b>SCOTT FORESMAN SCIENCE</b>			
<b>Scott Foresman Textbook</b>	<b>Directed Inquiry Lesson 1</b> Lesson 2	<b>How can you make fresh water from salt water? p. 180</b> <b>Where is Earth's water? pp. 182-185</b> How do water and air affect weather? pp. 186-189	SC.D.1.2.2 SC.D.1.2.2 SC.D.1.2.3
<b>Scott Foresman Leveled Readers</b>	<i>Water Cycle and Weather</i> (Below-Level) <i>Water and Weather on Earth</i> (On-Level) <i>Weather and Climates</i> (Advanced)		
<b>Scott Foresman Assessment</b>	Chapter Review; ExamView Test (build your own test for lessons 1 and 2 in chapter 6); FCAT Science Test Prep pp. 37-42; Assessment Book pp. 35-38; Workbook pp. 56, 57  (Note: Omit all questions relating to lessons 3 and 4.)		
<b>Vocabulary</b> Bold = FCAT Underscore = Marzano	<b><u>atmosphere</u>, condensation, evaporation, water cycle</b>		
<b>OTHER RESOURCES</b>			
<b>CIA</b> <a href="http://www.cs.ocps.net">www.cs.ocps.net</a>	<b>Strand D - Oceans:</b> Water, Water, Everywhere; Did You Ever Wonder about Water? <b>Strand D - The Water Cycle:</b> Testing Water and Soil; The Teacher...the Rainmaker; Rainmakers		
<b>AIMS</b> <a href="http://www.aimsedu.org">www.aimsedu.org</a>	<i>Water Precious Water:</i> Are You Aware? The Mini Water Cycle; Moving Raindrops in the Water Cycle		
<b>Literature</b>	Newbridge: <i>World of Water</i> ; <i>Our Water Supply</i>		
<b>Other</b>	Science Court: <i>Water Cycle</i> , Tom Snyder Productions Page Keeley, <i>Uncovering Student Ideas in Science, Vol. 1: Wet Jeans</i> Delta Science Module, <i>Weather Forecasting: Creating a Cloud</i>		
<b>NOTES</b>			

**FOURTH GRADE #3**

**Earth Science**

**Scott Foresman Chapter 7: Hurricanes and Tornadoes**

**BENCHMARKS AND ITEM CLARIFICATION**

AA or CS

Test Item Code

**The student...**

**SC.D.1.2.4** knows that the surface of the Earth is in a continuous state of change as waves, weather, and shifts of the land constantly change and produce many new features. (Also assesses D.1.2.1, D.1.2.2, and D.1.2.5)

AA

MC, SR, ER

*Identifies the factors that alter the surface of Earth over short and long periods of time.*

**Benchmark Codes:** AA = Annually Assessed Benchmarks; CS = Content-Sampled Benchmarks

**Test Item Codes:** MC = Multiple Choice; SR = Short Response; ER = Extended Response

**SCOTT FORESMAN SCIENCE**

**Scott Foresman  
Textbook**

**Directed Inquiry**

**Lesson 1**

**Lesson 2**

**Guided Inquiry**

**Math in Science**

**How can you make a model of a hurricane? p. 212**

**What are hurricanes? pp. 214-221**

**What are tornadoes? pp. 222-225**

**Where is the hurricane going? pp. 226-227**

**Ranking Hurricanes pp. 228-229**

**SC.D.1.2.4**

**SC.D.1.2.4**

**SC.D.1.2.4**

**SC.D.1.2.4**

**SC.D.1.2.4**

**Scott Foresman  
Leveled Readers**

*Hurricanes and Tornadoes* (Below-Level)

*Severe Storms* (On-Level)

*Hurricanes* (Advanced)

**Scott Foresman  
Assessment**

Chapter Review; ExamView Test (build your own test for lessons 1 and 2 in chapter 7); FCAT Science Test Prep pp. 43-48; Assessment Book pp. 39-42; Workbook pp. 66-67

**Vocabulary**

**Bold = FCAT**

**Underscore = Marzano**

**OTHER RESOURCES**

**CIA**

[www.cs.ocps.net](http://www.cs.ocps.net)

**AIMS**

[www.aimsedu.org](http://www.aimsedu.org)

*Weather Sense: Temperature, Air Pressure, and Wind: Just a Gust*

**Literature**

**Other**

Florida Hurricane Website: <http://flhurricane.com/news.php>

Free Hurricane Lesson Plans: <http://www.wesh.com/news/5027103/detail.html>

**NOTES**

**FOURTH GRADE #4**

**Earth Science**

**Scott Foresman Chapter 9: Changes to Earth's Surface**

<b>BENCHMARKS AND ITEM CLARIFICATION</b>		<b>AA OR CS</b>	<b>TEST ITEM CODE</b>
<b>The student...</b>			
<p>SC.D.1.2.4 knows that the surface of the Earth is in a continuous state of change as waves, weather, and shifts of the land constantly change and produce many new features. (Also assesses D.1.2.1, D.1.2.2, and D.1.2.5)</p> <p><i>Identifies the factors that alter the surface of Earth over short and long periods of time.</i></p>		AA	MC, SR, ER
<p>SC.D.1.2.5 knows that some changes in the Earth's surface are due to slow processes and some changes are due to rapid processes. (Assessed as D.1.2.4)</p>		AA	MC, SR, ER
<p>Benchmark Codes: AA = Annually Assessed Benchmarks; CS = Content-Sampled Benchmarks                      Test Item Codes: MC = Multiple Choice; SR = Short Response; ER = Extended Response</p>			
<b>SCOTT FORESMAN SCIENCE</b>			
<b>Scott Foresman Textbook</b>	<p><b>Directed Inquiry</b> Lesson 1</p> <p>Lesson 2</p> <p>Lesson 3</p> <p><b>Guided Inquiry</b></p>	<p>How can you observe a mineral wear away? pp. 260</p> <p>How does the Earth's surface wear away? pp. 262-265</p> <p>How do weathered materials move? pp. 266-269</p> <p>How can Earth's surface change rapidly? pp. 270-273</p> <p>How does distance change earthquake effects? pp. 274-275</p>	<p>SC.D.1.2.4</p> <p>SC.D.1.2.4</p> <p>SC.D.1.2.5</p> <p>SC.D.1.2.4</p> <p>SC.D.1.2.4</p> <p>SC.D.1.2.5</p> <p>SC.D.1.2.5</p>
<b>Scott Foresman Leveled Readers</b>	<p><i>Changes to Earth's Surface</i> (Below-Level)</p> <p><i>The Changing Surface of the Earth</i> (On-Level)</p> <p><i>Ice!</i> (Advanced)</p>		
<b>Scott Foresman Assessment</b>	<p>Chapter Review; ExamView Test (build your own test for lessons 1-3 in chapter 9); FCAT Science Test Prep pp. 55-60; Assessment Book pp. 47-50; Workbook pp. 84-86</p>		
<b>Vocabulary</b> Bold = FCAT Underscore = Marzano	<p><b><u>deposition</u>, <u>earthquake</u>, <u>erosion</u>, <u>volcano</u>, <u>weathering</u></b></p>		
<b>OTHER RESOURCES</b>			
<b>CIA</b> <a href="http://www.cs.ocps.net">www.cs.ocps.net</a>	<p><u>Strand D - Weathering Earth</u>: Wild Water; Edible Earth Layers; Ice Flows; Super Seeds</p>		
<b>AIMS</b> <a href="http://www.aimsedu.org">www.aimsedu.org</a>	<p><i>Primarily Earth</i>: Agent Erosion; Quaking Earth</p>		
<b>Literature</b>	<p><i>Erosion: The Weather Report Series</i>, Castleman; <i>Grand Canyon: A Trail Through Time</i>, Vieira</p>		
<b>Other</b>	<p>Ansberry and Morgan, <i>Picture-Perfect Science Lessons</i>: Grand Canyon</p>		
<b>NOTES</b>			

**FOURTH GRADE: #5****Earth Science****Scott Foresman Chapter 10: Using Natural Resources****BENCHMARKS AND ITEM CLARIFICATION****AA or CS****Test Item Code****The student...**

SC.D.1.2.1 knows that larger rocks can be broken down into smaller rocks, which in turn can be broken down to combine with organic material to form soil. (Assessed as D.1.2.4)

AA

MC, SR, ER

SC.D.1.2.4 knows that the surface of the Earth is in a continuous state of change as waves, weather, and shifts of the land constantly change and produce many new features. (Also assesses D.1.2.1, D.1.2.2, and D.1.2.5)

AA

MC, SR, ER

*Identifies the factors that alter the surface of Earth over short and long periods of time.*

SC.D.2.2.1 knows that using, recycling, and reducing the use of natural resources improve and protect the quality of life.

CS

MC

**Benchmark Codes:** AA = Annually Assessed Benchmarks; CS = Content-Sampled Benchmarks

**Test Item Codes:** MC = Multiple Choice; SR = Short Response; ER = Extended Response

**SCOTT FORESMAN SCIENCE****Scott Foresman  
Textbook****Lesson 1****What are natural resources? pp. 286-291****SC.D.1.2.1**

Math in Science

Water Use pp. 300-301

SC.D.2.2.1

**Full Inquiry****What affects how rain erodes the soil? pp. 308-311****SC.D.1.2.4****Scott Foresman  
Leveled Readers***Using Natural Resources* (Below-Level)*Resources* (On-Level)*Wind Power* (Advanced)**Scott Foresman  
Assessment**

Chapter Review; ExamView Test (build your own test for lesson 1 in chapter 10); FCAT Science Test Prep pp. 61-66; Assessment Book pp. 51-54; Workbook p. 94

(Note: Omit all questions relating to lesson 2.)

**Vocabulary****Bold = FCAT****Underscore = Marzano****resource, Sun****OTHER RESOURCES****CIA**[www.cs.ocps.net](http://www.cs.ocps.net)Strand D: The Water Cycle: Save Me! Save Me!; Wise Use of Water**AIMS**[www.aimsedu.org](http://www.aimsedu.org)*Overhead and Underfoot*: Don't Mix Me Up**Literature****Other**Science Court: *Soil*, Tom Snyder Productions**NOTES**

## FOURTH GRADE #6

### Physical Science

#### Scott Foresman Chapter 11: Properties of Matter

BENCHMARKS AND ITEM CLARIFICATION	AA or CS	Test Item Code
<b>The student...</b>		
<p><b>SC.A.1.2.1 determines that the properties of materials (e.g., density and volume) can be compared and measured (e.g., using rulers, balances, and thermometers).</b>  <i>Identifies properties and uses appropriate tools to determine the properties of materials.</i></p>	AA	MC
<p>SC.A.1.2.2 knows that common materials (e.g., water) can be changed from one state to another by heating and cooling.  <i>Identifies how a change in temperature can alter a material's state of matter.</i></p>	CS	MC
<p>SC.A.1.2.3 knows that the weight of an object always equals the sum of its parts.  <i>Combines the weight or mass of components to get the total weight/mass of the combined object.</i></p>	CS	MC
<p><b>SC.A.1.2.4 knows that different materials are made by physically combining substances and that different objects can be made by combining different materials.</b>  <i>Identifies different materials made by physically combining substances and/or identifies similarities and differences between mixtures and solutions.</i></p>	AA	MC
<p>SC.A.1.2.5 knows that materials made by chemically combining two or more substances may have properties that differ from the original materials.  <i>Identifies a change in properties as a result of a chemical change.</i></p>	CS	MC
<p>SC.A.2.2.1 knows that materials may be made of parts too small to be seen without magnification.  <i>Identifies organisms or objects that are too small to be seen without a microscope.</i></p>	CS	MC

**Benchmark Codes:** AA = Annually Assessed Benchmarks; CS = Content-Sampled Benchmarks  
**Test Item Codes:** MC = Multiple Choice; SR = Short Response; ER = Extended Response

#### SCOTT FORESMAN SCIENCE

<b>Scott Foresman Textbook</b>	<b>Directed Inquiry</b>	<b>What properties cause liquids to form layers? p. 316</b>	<b>SC.A.1.2.1</b>
	Lesson 1	What is matter? pp. 319-321	SC.A.2.2.1
	<b>Lesson 2</b>	<b>How is matter measured? pp. 322-327</b>	<b>SC.A.1.2.1</b>
			SC.A.1.2.3
	<b>Lesson 3</b>	<b>How do substances mix? pp. 328-331</b>	<b>SC.A.1.2.4</b>
	<b>Lesson 4</b>	<b>How does matter change? pp. 332-337</b>	SC.A.1.2.2
			<b>SC.A.1.2.4</b>
	Guided Inquiry	How can you change the properties of glue? pp. 338-339	SC.A.1.2.5
	<b>Math in Science</b>	<b>Comparing Densities pp. 340-341</b>	<b>SC.A.1.2.1</b>

<b>Scott Foresman Leveled Readers</b>	<i>Properties of Matter</i> (Below-Level) <i>Matter's Properties</i> (On-Level) <i>Lighter Than Air</i> (Advanced)
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<b>Scott Foresman Assessment</b>	Chapter Review; ExamView Test (build your own test for lessons 1-4 in chapter 11); FCAT Science Test Prep pp. 73-78; Assessment Book pp. 69-72; Workbook pp. 102-105
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<b>Vocabulary</b> Bold = FCAT Underscore = Marzano	<b><u>chemical change</u>, <u>density</u>, gas, liquid, mass, matter, mixture, <u>physical change</u>, solid, volume</b>
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#### OTHER RESOURCES

<b>CIA</b> <a href="http://www.cs.ocps.net">www.cs.ocps.net</a>	<u>Strand A - Properties of Matter</u> : Does It Add Up? <u>Strand A - Physical and Chemical Changes</u> : It's in the Bag; Powder Puzzle; Name that Change!
<b>AIMS</b> <a href="http://www.aimsedu.org">www.aimsedu.org</a>	<i>Off the Wall Science</i> : Food Coloring in Oil and Water; The Egg in Water; <i>Vol. 4, No. 8</i> : Bears Afloat; <i>Chemistry Matters</i> : Flipping Over Ice Cream
<b>Literature</b>	<i>Pancakes, Pancakes</i> , Carle
<b>Other</b>	Carolina Biological Program, <i>Science, Technology and Children</i> : Chemical Tests Kit GEMS: <i>Chemical Reactions</i> , <a href="http://www.lhsgems.org">www.lhsgems.org</a> Ansberry and Morgan, <i>Picture-Perfect Science Lessons</i> : Chemical Change Cafe

#### NOTES