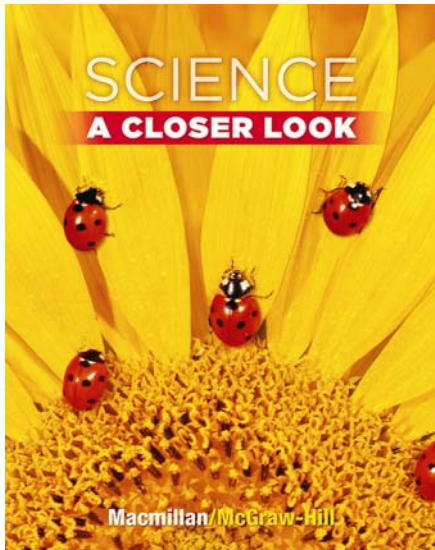




Macmillan/McGraw-Hill

First Grade Science
Grade Level
Content Expectations



SCIENCE

A CLOSER LOOK

Grade 1
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STANDARDS	PAGE REFERENCES
SCIENCE PROCESSES Inquiry Process	
<i>K-7 Standard S.IP: Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems</i>	
S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.	
S.IP.01.11 Make purposeful observation of the natural world using the appropriate senses.	Student Edition: 310-311 <i>Explore</i> 11, 23, 29, 95, 171, 265, 299 <i>Focus on Skills</i> 27A-27B <i>Quick Lab</i> 25, 32, 173, 204 Teacher Wraparound Edition: QL 25, 32, 173, 204; SI 23, 299; WU 170
S.IP.01.12 Generate questions based on observations.	Student Edition: 12-15 <i>Explore</i> 29, 37, 59, 67, 95, 171, 249, 265 <i>Quick Lab</i> 25, 32, 173, 204 Teacher Wraparound Edition: QL 25, 32, 173, 204
S.IP.01.13 Plan and conduct simple investigations.	Student Edition: <i>Be a Scientist</i> 71A-71B, 213A-213B, 239A-239B, 275A-275B <i>Explore</i> 29, 37, 59, 67, 95, 171, 195, 241, 249, 265 <i>Focus on Skills</i> 199A-199B

Codes used for Teacher Wraparound Edition pages are the initial caps of headings on that page.

STANDARDS	PAGE REFERENCES
<p>S.IP.01.14 Manipulate simple tools (for example: hand lens, pencils, rulers, thermometers, rain gauges, balances, non-standard objects for measurement) that aid observation and data collection.</p>	<p>Student Edition: R2-R6 <i>Be a Scientist</i> 239A-239B, 275A-275B <i>Explore</i> 23, 29, 53, 133, 179, 249, 271, 279, 299 <i>Focus on Skills</i> 319A-319B <i>Math in Science</i> 305 <i>Quick Lab</i> 232, 311</p> <p>Teacher Wraparound Edition: DI 317; EMI R2, R6; QL 232, 311</p>
<p>S.IP.01.15 Make accurate measurements with appropriate (non-standard) units for the measurement tool.</p>	<p>Student Edition: R2-R5 <i>Explore</i> 23, 249, 299 <i>Focus on Skills</i> 319A-319B <i>Math in Science</i> 305 <i>Quick Lab</i> 311, 343</p> <p>Teacher Wraparound Edition: DI R3; DMI R2; EMI R2; IM 319A; QL 311, 343; SI 249; TI 319B; UV R2</p>
<p>S.IP.01.16 Construct simple charts from data and observations.</p>	<p>Student Edition: 7 <i>Be a Scientist</i> 345A-345B, 371A-371B <i>Explore</i> 53, 329 <i>Focus on Skills</i> 27A-27B, 57A-57B, 269A-269B, 319A-319B, 365A-365B <i>Math in Science</i> 277, 423 <i>Read a Chart</i> 383</p> <p>Teacher Wraparound Edition: AI 269A; GI 53; RC 383; SI 53; UV 7</p>

STANDARDS	PAGE REFERENCES
Inquiry Analysis and Communication	
<i>K-7 Standard S.IA: Develop an understanding that scientific inquiry and investigations require analysis and communication of findings, using appropriate technology.</i>	
S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.	
<p>S.IA.01.12 Share ideas about science through purposeful conversation.</p>	<p>Student Edition: 6-7 <i>Explore</i> 127, 299 <i>Focus on Skills</i> 131A-131B <i>Think, Talk, and Write</i> 33</p> <p>Teacher Wraparound Edition: AI 131B; FA 41, 205; GI 87; IW 107A, 269A; LI 131A; SI 127</p>
<p>S.IA.01.13 Communicate and present findings of observations.</p>	<p>Student Edition: 6-7 <i>Be a Scientist</i> 71A-71B, 107A-107B <i>Explore</i> 95, 127, 141, 299, 315, 329 <i>Focus on Skills</i> 131A-131B</p> <p>Teacher Wraparound Edition: AI 131B; LI 131A; QL 40; SI 95, 127, 141, 299, 329; UV 7</p>
<p>S.IA.01.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video).</p>	<p>Student Edition: <i>Be a Scientist</i> 107A-107B, 371A-371B <i>Explore</i> 23, 29, 59, 67, 87, 367 <i>Focus on Skills</i> 27A-27B <i>Quick Lab</i> 63</p> <p>Teacher Wraparound Edition: DI 136; ER 27A; GI 59; LW 10; OI 87, 367; QL 62; WU 140</p>

STANDARDS	PAGE REFERENCES
Reflection and Social Implications	
<i>K-7 Standard S.RS: Develop an understanding that claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.</i>	
S.RS.E.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history.	
<p>S.RS.01.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p>	<p>Student Edition: 7 <i>Be a Scientist</i> 213A-213B <i>Explore</i> 28 <i>Focus on Skills</i> 169A-169B <i>Look and Wonder</i> 28 <i>Quick Lab</i> 40 <i>Read a Diagram</i> 31 <i>Think, Talk, and Write</i> 41, 269</p> <p>Teacher Wraparound Edition: DI 39, 197, 231; ELLS 60; FA 33, 199; LW 28; ML 269; QL 40; SI 29, 315; WU 28, 36</p>
<p>S.RS.01.12 Recognize that science investigations are done more than one time.</p>	<p>Student Edition: 14 <i>Be a Scientist</i> 71A-71B <i>Quick Lab</i> 384</p> <p>Teacher Wraparound Edition: DMI 14; QL 384</p>

STANDARDS	PAGE REFERENCES
PHYSICAL SCIENCE	
Properties of Matter	
<p><i>K-7 Standard P.PM: Develop an understanding that all matter has observable attributes with physical and chemical properties that are described, measured, and compared. Understand that states of matter exist as solid, liquid, or gas; and have physical and chemical properties. Understand all matter is composed of combinations of elements, which are organized by common attributes and characteristics on the Periodic Table. Understand that substances can be classified as mixtures or compounds and according to their physical and chemical properties.</i></p>	
<p>P.PM.E.1 Physical Properties- All objects and substances have physical properties that can be measured.</p>	
<p>P.PM.01.11 Demonstrate the ability to sort objects according to observable attributes such as color, shape, size, sinking or floating.</p>	<p>Student Edition: <i>Explore</i> 3, 87, 299, 307 <i>Focus on Skills</i> 27A-27B, 57A-57B <i>Math in Science</i> 35 <i>Quick Lab</i> 25, 301</p> <p>Teacher Wraparound Edition: DI 7, 26, 89, 302; ELLS 6, 38, 88, 300; IM 35; QL 25, 301</p>
<p>P.PM.E.2 States of Matter- Matter exists in several different states: solids, liquids and gases. Each state of matter has unique physical properties. Gases are easily compressed but liquids and solids do not compress easily. Solids have their own particular shapes, but liquids and gases take the shape of the container.</p>	
<p>P.PM.01.21 Demonstrate that water as a solid keeps its own shape (ice).</p>	<p>Student Edition: 301, 308-309, 342-343 <i>Literature</i> 294-295 <i>Read a Photo</i> 343</p>
<p>P.PM.01.22 Demonstrate that water as a liquid takes on the shape of various containers.</p>	<p>Student Edition: 316-317, 342-343 <i>Explore</i> 315</p> <p>Teacher Wraparound Edition: DI 317; UV 317</p>

STANDARDS	PAGE REFERENCES
<p>P.PM.E.3 Magnets- Magnets can repel or attract other magnets. Magnets can also attract certain non-magnetic objects at a distance.</p>	
<p>P.PM.01.31 Identify materials that are attracted by magnets.</p>	<p>Student Edition: 382-385 <i>Explore</i> 381 <i>Look and Wonder</i> 380 <i>Math in Science</i> 387 <i>Quick Lab</i> 384 <i>Read a Chart</i> 383 <i>Think, Talk, and Write</i> 385 <i>Writing in Science</i> 386</p> <p>Teacher Wraparound Edition: DI 383; DMI 382; ELLS 382; FA 385; OI 381; QL 384; RC 383; WU 380</p>
<p>P.PM.01.32 Observe that like poles of a magnet repel and unlike poles of a magnet attract.</p>	<p>Student Edition: 384-385 <i>Chapter 11 Review</i> 392 #4 <i>Think, Talk, and Write</i> 385</p> <p>Teacher Wraparound Edition: UV 384</p>

STANDARDS**PAGE REFERENCES****LIFE SCIENCE****Organization of Living Things**

***K-7 Standard L.OL:** Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life which include the need for air, water and a source of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a global food chain where food/energy is supplied by plants which need light to produce food/energy. Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.*

L.OL.E.1 Life Requirements- Organisms have basic needs. Animals and plants need air, water, and food. Plants also require light. Plants and animals use food as a source of energy and as a source of building material for growth and repair.

L.OL.01.13 Identify the needs of animals.

Student Edition:

96-99, 104

Be a Scientist 107A-107B

Explore 95

Look and Wonder 94

Quick Lab 99

Think, Talk, and Write 99

Writing in Science 100

Teacher Wraparound Edition:

APK 94; DI 97; DMI 96; EMI 97; FA 99; IW 100; OI 95; QL 98

STANDARDS	PAGE REFERENCES
<p>L.OL.E.2 Life Cycles- Plants and animals have life cycles. Both plants and animals begin life and develop into adults, reproduce, and eventually die. The details of this life cycle are different for different organisms.</p>	
<p>L.OL.01.21 Describe the life cycle of animals including the following stages: egg, young, adult; egg, larva, pupa, adult.</p>	<p>Student Edition: 110-115 <i>Explore</i> 109 <i>Look and Wonder</i> 108 <i>Quick Lab</i> 113 <i>Read a Diagram</i> 113 <i>Think, Talk, and Write</i> 115</p> <p>Teacher Wraparound Edition: APK 108; DI 111, 114; DMI 110, 112; FA 115; OI 109; QL 113; UV 111, 114</p>
<p>Heredity</p>	
<p><i>K-7 Standard L.HE: Develop an understanding that all life forms must reproduce to survive. Understand that characteristics of mature plants and animals may be inherited or acquired and that only inherited traits are passed on to their young. Understand that inherited traits can be influenced by changes in the environment and by genetics.</i></p>	
<p>L.HE.E.1 Observable Characteristics- Plants and animals share many, but not all, characteristics of their parents.</p>	
<p>L.HE.01.11 Identify characteristics (for example: body coverings, beak shape, number of legs, body parts) that are passed on from parents to young.</p>	<p>Student Edition: 110-115 <i>Chapter 3 Review</i> 123 #7 <i>Explore</i> 109 <i>Look and Wonder</i> 108 <i>Read a Diagram</i> 113</p> <p>Teacher Wraparound Edition: APK 108; DI 111, 114; UV 111</p>
<p>L.HE.01.12 Classify young animals based on characteristics that are passed on from parents (for example: dogs/puppies, cats/kittens, cows/calves, chicken/chicks).</p>	<p>Student Edition: 110-115 <i>Chapter 3 Review</i> 123 #7 <i>Explore</i> 109 <i>Look and Wonder</i> 108 <i>Read a Diagram</i> 113</p> <p>Teacher Wraparound Edition: DI 111, 114; UV 111</p>

STANDARDS	PAGE REFERENCES
<p>EARTH SCIENCE Earth Systems</p>	
<p><i>K-7 Standard E.ES: Develop an understanding of the warming of the Earth by the sun as the major source of energy for phenomenon on Earth and how the sun’s warming relates to weather, climate, seasons, and the water cycle. Understand how human interaction and use of natural resources affects the environment.</i></p>	
<p>E.ES.E.1 Solar Energy- The sun warms the land, air and water and helps plants grow.</p>	
<p>E.ES.01.11 Identify the sun as the most important source of heat which warms the land, air, and water of the Earth.</p>	<p>Student Edition: 236, 242-245, 250-253, 267-269 Teacher Wraparound Edition: DI 268; SB 250</p>
<p>E.ES.01.12 Demonstrate the importance of sunlight and warmth in plant growth.</p>	<p>Student Edition: 26-27, 32, 56, 70-71, 243 <i>Be a Scientist</i> 71A-71B <i>Explore</i> 59, 241 <i>Quick Lab</i> 70 <i>Think, Talk, and Write</i> 71 Teacher Wraparound Edition: QL 70; SB 250</p>
<p>E.ES.E.2 Weather- Weather changes from day to day and over the seasons.</p>	
<p>E.ES.01.21 Compare daily changes in the weather related to temperature (cold, hot, warm, cool); cloud cover (cloudy, partly cloudy, foggy) precipitation (rain, snow, hail, freezing rain); wind (breezy, windy, calm).</p>	<p>Student Edition: 230-233, 236-239, 268-269 <i>Be a Scientist</i> 239A-239B <i>Explore</i> 235 <i>Focus on Skills</i> 233A-233B <i>Quick Lab</i> 232 <i>Think, Talk, and Write</i> 233 Teacher Wraparound Edition: DI 268; DMI 236, 268; FA 233, 269; QL 232</p>
<p>E.ES.01.22 Describe and compare weather related to the four seasons in terms of temperature, cloud cover, precipitation, and wind.</p>	<p>Student Edition: 242-245, 250-253 <i>Quick Lab</i> 243 <i>Reading in Science</i> 246-247 <i>Think, Talk, and Write</i> 253 <i>Writing in Science</i> 254 Teacher Wraparound Edition: DI 244, 252; DMI 242, 244, 250, 252; EMI 243; FA 245, 253; IW 247, 254; QL 243</p>

STANDARDS	PAGE REFERENCES
E.ES.01.23 Describe severe weather events.	Student Edition: <i>Careers in Science</i> 292 Teacher Wraparound Edition: WAI 292
E.ES.01.24 Describe precautions that should be taken for human safety during severe weather conditions (thunderstorms, lightning, tornadoes, high winds, blizzards, hurricanes).	Student Edition: <i>Careers in Science</i> 292 Teacher Wraparound Edition: LAI 292; WAI 292
E.ES.E.3 Weather Measurement- Scientists use tools for observing, recording, and predicting weather changes.	
E.ES.01.31 Identify the tools that might be used to measure temperature, precipitation, cloud cover and wind.	Student Edition: 232-233 <i>Be a Scientist</i> 239A-239B <i>Explore</i> 229 <i>Quick Lab</i> 232 <i>Read a Photo</i> 232 <i>Think, Talk, and Write</i> 233 Teacher Wraparound Edition: APK 228; DMI 232; OI 229; QL 232
E.ES.01.32 Observe and collect data of weather conditions over a period of time.	Student Edition: <i>Be a Scientist</i> 239A-239B Teacher Wraparound Edition: OI 239B
Solid Earth	
<i>K-7 Standard E.SE: Develop an understanding of the properties of earth materials and how those properties make materials useful. Understand gradual and rapid changes in earth materials and features of the surface of Earth. Understand magnetic properties of Earth.</i>	
E.SE.E.1 Earth Materials- Earth materials that occur in nature include rocks, minerals, soils, water, and the gases of the atmosphere. Some Earth materials have properties which sustain plant and animal life.	
E.SE.01.12 Describe how Earth materials contribute to the growth of plant and animal life.	Student Edition: 174-175, 198 <i>Be a Scientist</i> 213A-213B <i>Quick Lab</i> 198 <i>Read a Photo</i> 198 Teacher Wraparound Edition: APK 170; DI 174; QL 198; UV 174