



# Science

**LEVEL RED**

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## STANDARDS

## PAGE REFERENCES

### Scientific Inquiry (Nature of Science Unifying Concept A)

Scientific inquiry is the process by which humans systematically examine the natural world. Scientific inquiry is a human endeavor and involves observation, reasoning, insight, energy, skill, and creativity. Scientific inquiry is used to formulate and test explanations of nature through observation, experiments, and theoretical or mathematical models. Scientific explanations and evidence are constantly reviewed and examined by others. Questioning, response to criticism and open communication are integral to the process of science.

By the end of grade band, students know and are able to do everything required in earlier grades and:

**N.8.A Students understand that scientific knowledge requires critical consideration of verifiable evidence obtained from inquiry and appropriate investigations.**

N.8.A.1 Students know how to identify and critically evaluate information in data, tables, and graphs. E/S

#### Student Edition:

56-59, 107, 110

*Applying Math* 17

*Lab* 32-33, 112, 118-119

*Science Skill Handbook* 685-686

*Math Skill Handbook* 718-719

#### Teacher Wraparound Edition:

FYI 108

STANDARDS	PAGE REFERENCES
<p>N.8.A.2 Students know how to critically evaluate information to distinguish between fact and opinion. E/S</p>	<p><b>Student Edition:</b>  13-17, 27-30, 104-105  <i>Lab 31</i>, 118-119  <i>Science Skill Handbook</i> 678</p> <p><b>Teacher Wraparound Edition:</b>  CD 18; CU 30; IM 139; QD 29</p>
<p>N.8.A.3 Students know that different explanations can be given for the same evidence. E/S</p>	<p><b>Student Edition:</b>  13-17, 29-30  <i>Lab 31</i>, 32-33  <i>Accidents in Science</i> 552</p> <p><b>Teacher Wraparound Edition:</b>  A 20; VL 25</p>
<p>N.8.A.4 Students know how to design and conduct a controlled experiment. E/L</p>	<p><b>Student Edition:</b>  18  <i>Lab 32-33</i>  <i>Design Your Own Lab</i> 332-333, 520-521, 636-637  <i>Science Skill Handbook</i> 681-682</p> <p><b>Teacher Wraparound Edition:</b>  CU 20; D 29; IL 17; IM 18</p>
<p>N.8.A.5 Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data. E/L</p>	<p><b>Student Edition:</b>  19-20, 28-29, 42-49, 52-54  <i>Launch Lab</i> 41  <i>Lab 363</i>  <i>Technology Skill Handbook</i> 701-703  <i>Math Skill Handbook</i> 711, 715-719  <i>Use the Internet Lab</i> 430-431</p>
<p>N.8.A.6 Students know that scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists. E/S</p>	<p><b>Student Edition:</b>  16-18, 26, 28-30, 100-105  <i>Lab 32-33</i>, 573  <i>Design Your Own Lab</i> 332-333, 488-489</p> <p><b>Teacher Wraparound Edition:</b>  MM 25; TPK 21</p>

**STANDARDS****PAGE REFERENCES****Science, Technology, and Society (Nature of Science Unifying Concept B)**

Technology defines a society or era. It can shape the environment in which people live, and it has increasingly become a larger part of people's lives. While many of technology's effects on society are regarded as desirable, other effects are seen as less desirable. Instruction in this area should not be solely in science or technology courses, but should be shared by science, math, technology, social studies and language arts. The development and use of technology affects society and the environment in which we live, and at the same time society influences the development of technology and its impact on culture.

By the end of grade band, students know and are able to do everything required in earlier grades and:

**N.8.B Students understand the interactions of science and society in an ever-changing world.**

N.8.B.1 Students know technologies impact society, both positively and negatively. E/S

**Student Edition:**

213-214, 408-413, 417, 426-429, 646-653, 656-662  
*Applying Science* 115  
*Science and History* 218  
*Lab* 363  
*Science and Society* 490

N.8.B.2 Students know that scientific knowledge is revised through a process of incorporating new evidence gained through ongoing investigation and collaborative discussion. E/S

**Student Edition:**

6-8, 27-30, 99-105  
*Science and History* 90, 218, 582  
*Integrate History* 174  
*Science and Society* 432  
*Accidents in Science* 552

**Teacher Wraparound Edition:**

CD 292

## STANDARDS

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**Matter (Physical Science Unifying Concept A)**

Matter has various states with unique properties that can be used as a basis for organization. The relationship between the properties of matter and its structure is an essential component of study in the physical sciences. The understanding of matter and its properties leads to practical applications, such as the capability to liberate elements from ore, create new drugs, manipulate the structure of genes and synthesize polymers.

By the end of grade band, students know and are able to do everything required in earlier grades and:

**P.8.A Students understand the properties and changes of properties in matter.**

P.8.A.1 Students know that particles are arranged differently in solids, liquids, and gases of the same substance. E/S	<b>Student Edition:</b> 73-75, 229, 256-257, 347 <i>National Geographic</i> 346 <i>MiniLAB</i> 386 <b>Teacher Wraparound Edition:</b> FYI 352; IM 258, 343; TPK 256
P.8.A.2 Students know that elements can be arranged in the periodic table which shows repeating patterns that group elements with similar properties. E/S	<b>Student Edition:</b> 84, 106-107, 109-111 <i>National Geographic</i> 108 <i>Lab</i> 112 <i>Reference Handbooks</i> 720-721 <b>Teacher Wraparound Edition:</b> A 110; DI 78; FYI 108
P.8.A.3 Students know techniques of applying properties to separate mixtures. E/S	<b>Student Edition:</b> 77, 116 <i>Applying Science</i> 115 <i>Lab</i> 118-119, 379 <i>MiniLAB</i> 320 <b>Teacher Wraparound Edition:</b> A 117; CB 280; DI 115; FF 331; QD 116
P.8.A.4 Students know that atoms often combine to form molecules, and that compounds form when two or more different kinds of atoms chemically bond. E/S	<b>Student Edition:</b> 81-83, 86, 100, 113-114 <b>Teacher Wraparound Edition:</b> D 115; FYI 114; LD 101; SJ 83; TPK 113; UA 82

STANDARDS		PAGE REFERENCES
P.8.A.5	Students know that the atomic theory explains why mass is conserved in physical and chemical changes. E/S	<b>Student Edition:</b> 84-86, 100-101 <i>Science and History</i> 90 <b>Teacher Wraparound Edition:</b> A 86; FYI 100; IL 85; LD 101
P.8.A.6	Students know that matter is made up of tiny particles called atoms. E/S	<b>Student Edition:</b> 98-101, 106-107, 194 <i>Integrate History</i> 99 <i>Lab</i> 112 <b>Teacher Wraparound Edition:</b> FF 101, 109; TPK 256
P.8.A.7	Students know the characteristics of electrons, protons, and neutrons. E/S	<b>Student Edition:</b> 102-104, 109-110, 194, 197 <b>Teacher Wraparound Edition:</b> D 103; FF 199; FYI 194; IP 186; MM 104; R 105
P.8.A.8	Students know that substances containing only one kind of atom are elements which cannot be broken into smaller pieces by normal laboratory reactions. E/S	<b>Student Edition:</b> 106-107, 109-111 <i>National Geographic</i> 108 <i>Lab</i> 112 <i>Science and History</i> 120 <b>Teacher Wraparound Edition:</b> FYI 107, 108; TPK 106; USW 112
<b>Forces and Motion (Physical Science Unifying Concept B)</b> The laws of motion are used to describe the effects of forces on the movement of objects. Force may be treated as the originator of motion. ----- By the end of grade band, students know and are able to do everything required in earlier grades and: ----- <b>P.8.B Students understand that position and motion of an object result from the net effect of the different forces acting on it.</b>		
P.8.B.1	Students know that electric currents can produce magnetic forces and magnets can cause electric currents. E/S	<b>Student Edition:</b> 212-214 <i>Lab</i> 216-217 <i>Extra Try at Home Labs</i> 693 #7 <b>Teacher Wraparound Edition:</b> A 214; SJ 212; TC 192; VL 213

STANDARDS		PAGE REFERENCES
P.8.B.2	Students know that every object exerts gravitational force on every other object, and the magnitude of this force depends on the mass of the objects and their distance from one another. I/S	<b>Student Edition:</b> 195, 323, 387, 440-446 <b>Teacher Wraparound Edition:</b> A 388, 445; D 134; FYI 195; QD 387
P.8.B.3	Students know the effects of balanced and unbalanced forces on an object's motion. E/S	<b>Student Edition:</b> 137, 140 <b>Teacher Wraparound Edition:</b> A 140; LD 141; QD 137; TPK 136
P.8.B.4	Students know that an object's motion can be described graphically. E/S	<b>Student Edition:</b> 135 <i>Lab</i> 151 <b>Teacher Wraparound Edition:</b> FYI 134; R 135
<p><b>Energy (Physical Science Unifying Concept C)</b></p> <p>The total energy of the universe is constant. All events involve the transfer of energy in one form or another. In all energy transfers, the overall effect is that the energy is spread out uniformly.</p> <hr/> <p>By the end of grade band, students know and are able to do everything required in earlier grades and:</p> <hr/> <p><b>P.8.C Students understand transfer of energy.</b></p>		
E.8.A.1:	Students know that seasons are caused by variations in the amounts of the sun's energy reaching Earth's surface due to the planet's axial tilt. E/S	<b>Student Edition:</b> 441 <b>Teacher Wraparound Edition:</b> CU 446; FYI 441
P.8.C.1	Students know that visible light is a narrow band within the electromagnetic spectrum. I/S	<b>Student Edition:</b> 230, 232, 408-409
P.8.C.2	Students know that vibrations (e.g., sounds, earthquakes) move at different speeds in different materials, have different wavelengths, and set up wave-like disturbances that spread away from the source uniformly. E/S	<b>Student Edition:</b> 227-229, 231-235 <b>Teacher Wraparound Edition:</b> A 233; CC 246; FYI 228, 232
P.8.C.3	Students know that physical, chemical, and nuclear reactions involve a transfer of energy. E/S	<b>Student Edition:</b> 166-167, 173-177, 184-185, 196-200, 204-207, 226-229 <b>Teacher Wraparound Edition:</b> D 227; FYI 163; LD 174; R 177

STANDARDS	PAGE REFERENCES
P.8.C.4 Students know that energy cannot be created or destroyed, in a chemical or physical reaction, but only changed from one form to another. E/S	<b>Student Edition:</b> 162-163, 167-169, 180-181, 202-204 <i>Lab</i> 183, 216-217 <i>National Geographic</i> 206 <b>Teacher Wraparound Edition:</b> CC 173; CU 169; FYI 167; QD 168; SJ 163
P.8.C.5 Students know that forms of energy can be considered to be either kinetic energy or potential energy. E/S	<b>Student Edition:</b> 164-168, 170-174, 178-179, 204-205 <i>Lab</i> 183 <b>Teacher Wraparound Edition:</b> D 167; DI 164; FYI 166
P.8.C.6 Students know that heat energy flows from warmer materials or regions to cooler ones through conduction, convection, and radiation. E/S	<b>Student Edition:</b> 174-177, 230, 296, 344-345, 348-349, 353-355, 380-384 <b>Teacher Wraparound Edition:</b> CD 176; D 381; FYI 296; R 177
P.8.C.7 Students know that electricity can flow in series and parallel circuits. I/S	<b>Student Edition:</b> 208 <i>Lab</i> 215 <b>Teacher Wraparound Edition:</b> IM 202; LD 207
<p><b>Atmospheric Processes and the Water Cycle (Earth and Space Science Unifying Concept A)</b></p> <p>Earth systems have internal and external sources of energy, both of which create heat. Driven by sunlight and Earth's internal heat, a variety of cycles connect and continually circulate energy and material through the components of the earth systems.</p> <hr/> <p>By the end of grade band, students know and are able to do everything required in earlier grades and:</p> <hr/> <p><b>E.8.A Students understand the relationship between the Earth's atmosphere, topography, weather and climate.</b></p>	
E.8.A.1 Students know that seasons are caused by variations in the amounts of the sun's energy reaching Earth's surface due to the planet's axial tilt. E/S	<b>Student Edition:</b> 441 <b>Teacher Wraparound Edition:</b> CU 446; FYI 441

STANDARDS	PAGE REFERENCES
<p>E.8.A.2 Students know how the processes involved in the water cycle affect climatic patterns. E/S</p>	<p><b>Student Edition:</b> 56, 347, 380-382 <i>National Geographic</i> 346</p> <p><b>Teacher Wraparound Edition:</b> D 381, 658</p>
<p>E.8.A.3 Students know the properties that make water an essential component of the earth system. E/S</p>	<p><b>Student Edition:</b> 374-378, 624, 650-651, 658-659 <i>Applying Science</i> 115 <i>Lab</i> 379, 654</p> <p><b>Teacher Wraparound Edition:</b> D 658; DI 361; QD 375; VL 659</p>
<p>E.8.A.4 Students understand the composition of Earth's atmosphere, emphasizing the role of the atmosphere in Earth's weather and climate. I/S</p>	<p><b>Student Edition:</b> 342-345, 348-355, 356-362 <i>Integrate Social Studies</i> 353</p> <p><b>Teacher Wraparound Edition:</b> A 350; D 351, 358; FYI 343; TPK 342; VL 344</p>
<p>E.8.A.5 Students know the difference between local weather and regional climate. I/S</p>	<p><b>Student Edition:</b> 348-355, 356-362, 382-383</p> <p><b>Teacher Wraparound Edition:</b> A 355; CC 352, 358; CD 353; D 351, 381; FYI 354; R 362</p>
<p>E.8.A.6 Students know that topography and patterns of global and local atmospheric movement influence local weather which occurs primarily in the lower atmosphere. E/S</p>	<p><b>Student Edition:</b> 342-345, 348-355, 356-362</p> <p><b>Teacher Wraparound Edition:</b> A 355; CC 352, 358; CD 353; D 351; FYI 354, R 362</p>

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**Solar System and Universe (Earth and Space Science Unifying Concept B)**

The universe is a dynamic system of matter and energy. The universe is extremely large and massive with its components separated by vast distances. Tools of technology will continue to aid in the investigation of the components, origins, processes and age of the universe. Earth is one part in our solar system, which is within the Milky Way galaxy. The Sun is the energy-producing star for our solar system. Most objects in our solar system are in predictable motion, resulting in phenomena such as day/night, year, phases of the moon, tides, and eclipses.

By the end of grade band, students know and are able to do everything required in earlier grades and:

**E.8.B Students understand characteristics of our solar system that is part of the Milky Way galaxy.**

E.8.B.1	Students know that the universe contains many billions of galaxies, and each galaxy contains many billions of stars. W/L	<b>Student Edition:</b> 459-461 <i>National Geographic</i> 460
E.8.B.2	Students know that the solar system includes a great variety of planetary moons, asteroids, and comets. I/S	<b>Student Edition:</b> 450-455, 469 #23 <b>Teacher Wraparound Edition:</b> ACT 452; DI 452; MM 452; SJ 452
E.8.B.3	Students know characteristics of the planets in our solar system. I/S	<b>Student Edition:</b> 448-455 <i>MiniLAB</i> 450 <i>Applying Science</i> 453 <b>Teacher Wraparound Edition:</b> ACT 450; CFU 455; LD 450; R 455; VL 449
E.8.B.4	Students understand that Earth is part of a solar system located within the Milky Way galaxy. E/S	<b>Student Edition:</b> 448-449, 461
E.8.B.5	Students know that the Sun is many thousands of times closer to Earth than any other star, and billions of times closer than the far end of the Milky Way galaxy. W/L	<b>Student Edition:</b> 456-457, 461 <b>Teacher Wraparound Edition:</b> IM 438F; TFYI 460
E.8.B.6	Students know the Sun is a medium-sized star located in the Milky Way galaxy, part of which can be seen as a glowing band of light spanning the clear night sky. W/L	<b>Student Edition:</b> 457, 461 <b>Teacher Wraparound Edition:</b> UAA 461

STANDARDS	PAGE REFERENCES
E.8.B.7 Students know that regular and predictable motions of Earth around the Sun and the Moon around the Earth explain such phenomena as the day, the year, phases of the Moon, and eclipses. E/S	<b>Student Edition:</b> 440-446 <i>Science Online</i> 444 <i>Lab</i> 446 <b>Teacher Wraparound Edition:</b> ACT 443; CFU 446; R 446; SCB 438E; TFYI 445
<p><b>Earth's Composition and Structure (Earth and Space Science Unifying Concept C)</b></p> <p>Earth is composed of materials that move through the biogeochemical cycles. Earth's features are shaped by ongoing and dynamic processes. These processes can be constructive or destructive and occur over geologic time scales.</p> <hr/> <p>By the end of grade band, students know and are able to do everything required in earlier grades and:</p> <hr/> <p><b>E.8.C Students understand that landforms result from a combination of constructive and destructive processes.</b></p>	
E.8.C.1 Students know that sedimentary rocks and fossils provide evidence for changing environments and the constancy of geologic processes. E/S	<b>Student Edition:</b> 271 <i>MiniLAB</i> 271 <b>Teacher Wraparound Edition:</b> A 271
E.8.C.2 Students know that rocks at Earth's surface weather, forming sediments that are buried, then compacted, heated and often recrystallized into new rock. E/S	<b>Student Edition:</b> 265-271, 272-276 <i>Lab</i> 276 <b>Teacher Wraparound Edition:</b> A 271; CC 269; D 266; MM 269; QD 274; R 276; SCB 245F; SJ 267
E.8.C.3 Students know that Earth is composed of a crust (both continental and oceanic); hot convecting mantle; and a dense, metallic core. E/S	<b>Student Edition:</b> 288-291 <i>Launch Lab</i> 287 <i>Integrate Chemistry</i> 290 <b>Teacher Wraparound Edition:</b> CC 289; DI 291; TPK 288; USW 296

STANDARDS	PAGE REFERENCES
<p>E.8.C.4 Students know that the very slow movement of large crustal plates result in geological events. E/S</p>	<p><b>Student Edition:</b>            292-297, 299-305  <i>Science Online</i> 293  <i>MiniLAB</i> 293, 301  <i>National Geographic</i> 294  <i>Lab</i> 298</p> <p><b>Teacher Wraparound Edition:</b>            ACT 293, 294; D 296; QD 292; SCB 286E-F;            V 294; VL 293</p>
<p>E.8.C.5 Students know that minerals have different abundances and have different properties. E/S</p>	<p><b>Student Edition:</b>            256-264  <i>MiniLAB</i> 261  <i>Lab</i> 278-279</p> <p><b>Teacher Wraparound Edition:</b>            ACT 259; CC 260; CFU 264; QD 260; R 264;            SCB 454E; SJ 262; TFYI 258; UAA 259</p>
<p>E.8.C.6 Students know that soils have properties of color, texture, and capacity to retain water and provide nutrients for life. E/S</p>	<p><b>Student Edition:</b>            320-321  <i>MiniLAB</i> 320  <i>Lab</i> 322</p> <p><b>Teacher Wraparound Edition:</b>            A 320, 322; CFU 321; MM 320; QD 321; R 321;            VL 320</p>
<p>E.8.C.7 Students know the identifying characteristics of renewable and nonrenewable resources including their abundance and/or accessible locations. E/S</p>	<p><b>Student Edition:</b>            646-653, 673 #20</p> <p><b>Teacher Wraparound Edition:</b>            A 653; D 651; R 653; SCB 644E</p>
<p>E.8.C.8 Students know how changes in a physical environment can be beneficial or harmful. I/S</p>	<p><b>Student Edition:</b>            655-662</p> <p><b>Teacher Wraparound Edition:</b>            CB 154; D 392; DI 393; SJ 656</p>

STANDARDS		PAGE REFERENCES
E.8.C.9	Students will understand that unintended consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical. E/S	<b>Student Edition:</b> 655-662, 665 <i>Integrate Social Studies</i> 391 <i>Applying Science</i> 392 <i>Science and Society</i> 670 <b>Teacher Wraparound Edition:</b> A 662; CC 652, 661; CD 620; QD 661; R 667
P.8.C.4:	Students know that energy cannot be created or destroyed, but only changed from one form to another. E/S	<b>Student Edition:</b> 162-169 <i>Lab</i> 183 <b>Teacher Wraparound Edition:</b> A 169, 183; CFU 169; QD 168; R 169; TFYI 167; TPK 162
<b>Heredity (Life Science Unifying Concept A)</b> Heredity is the genetic passing of a set of instructions from generation to generation. These instructions are encoded as DNA and may manifest themselves as characteristics. Some characteristics are inherited, and some result from interactions with the environment. ----- By the end of grade band, students know and are able to do everything required in earlier grades and: ----- <b>L.8.A Students understand that heredity is the passage of genetic information from one generation to another.</b>		
L.8.A.1	Students know that heredity is the passage of genetic instructions from one generation to the next generation. E/S	<b>Student Edition:</b> 599-605 <i>Applying Math</i> 603 <i>Use the Internet Lab</i> 606-607 <b>Teacher Wraparound Edition:</b> AIL 606; CFU 605; IM 588F, 602; SCB 588E; TFYI 603
L.8.A.2	Students know that changes in genes of eggs and sperm can cause changes in inherited characteristics. E/S	<b>Student Edition:</b> 604
L.8.D.1:	Students know the characteristics of a species. E/S	<b>Teacher Wraparound Edition:</b> ACT 522

STANDARDS		PAGE REFERENCES
L.8.A.3	Students know that organisms can be bred for specific characteristics. I/L	<b>Student Edition:</b> 605 <i>Science Online</i> 605 <b>Teacher Wraparound Edition:</b> D 603; DI 593
L.8.A.4	Students know that some characteristics of an organism are the result of a combination of interaction with the environment and genetic information. E/S	<b>Student Edition:</b> <i>Science and Society</i> 608 <b>Teacher Wraparound Edition:</b> ACT 608; D 608; VL 484
<b>Structure of Life (Life Science Unifying Concept B)</b> All living things are composed of cells. Cells range from very simple to very complex and have structures which perform functions for the organism. Cells and structures can be damaged or fail because of intrinsic failures or disease. ----- By the end of grade band, students know and are able to do everything required in earlier grades and: ----- <b>L.8.B Students understand that living things are composed of cells, which are specialized in multicellular organisms to perform a variety of life functions.</b>		
L.8.B.1	Students know that disease can result from defects in body systems or from damage caused by infection. E/S	<b>Student Edition:</b> 570 <i>Integrate Health</i> 344 <i>Integrate Career</i> 604 <b>Teacher Wraparound Edition:</b> A 559, 605; ACT 565; CD 601; IM 595; TFYI 561
L.8.B.2	Students know that some organisms are made of just one cell and that multicellular organisms can consist of thousands to millions of cells working together. E/S	<b>Student Edition:</b> 389, 477, 485-487, 498 <i>Science Online</i> 487 <b>Teacher Wraparound Edition:</b> TPK 498
L.8.B.3	Students know that the cell is the basic structural unit for all living things. E/S	<b>Student Edition:</b> 476, 493 #22 <i>Section Review</i> 481 <b>Teacher Wraparound Edition:</b> DI 486; R 487

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L.8.B.4	Students know cells grow, divide, and take in nutrients which they use to provide energy for cell functions. E/S	<b>Student Edition:</b> 476-481, 483-487, 592 <i>Lab 482</i> <i>MiniLAB 484</i> <b>Teacher Wraparound Edition:</b> DI 485; LD 480; TPK 633
L.8.B.5	Students know that cells combine to form tissues that combine to form organs and organ systems that are specialized to perform life functions. E/S	<b>Student Edition:</b> 487 <i>National Geographic 486</i> <i>Applying Science 487</i> <b>Teacher Wraparound Edition:</b> A 487; DI 486; IL 486; IM 486; SCB 474F
<p><b>Organisms and Their Environment (Life Science Unifying Concept C)</b></p> <p>A variety of ecosystems and communities exist on Earth. Ecosystems are dynamic interactions of organisms and their environment. Ecosystems have distinct characteristics and components that allow certain organisms to thrive. Change in one or more components can affect the entire ecosystem.</p> <hr/> <p>By the end of grade band, students know and are able to do everything required in earlier grades and:</p> <hr/> <p><b>L.8.C Students understand how living and nonliving components of ecosystems interact.</b></p>		
L.8.C.1	Students know how matter and energy are transferred through food webs in an ecosystem. E/S	<b>Student Edition:</b> 392, 633-635 <i>Science Online 392</i> <i>National Geographic 393</i> <b>Teacher Wraparound Edition:</b> ACT 393, 634; CFU 634; MM 391, 634; R 634; TFYI 633
L.8.C.2	Students know how to characterize organisms in any ecosystem by their functions. E/S	<b>Student Edition:</b> 391, 633-635, 641 #23 <b>Teacher Wraparound Edition:</b> ACT 391; R 635; VL 634
E.8.C.8:	Students will evaluate how changes in environments can be beneficial or harmful. E/S	<b>Student Edition:</b> 655-662 <b>Teacher Wraparound Edition:</b> CB 154; D 392; DI 393; SJ 656

STANDARDS	PAGE REFERENCES
<p>E.8.C.9: Students will understand that unintended consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical. I/S</p>	<p><b>Student Edition:</b>  655-662, 665  <i>Integrate Social Studies</i> 391  <i>Applying Science</i> 392  <i>Science and Society</i> 670</p> <p><b>Teacher Wraparound Edition:</b>  A 662; CC 652, 661; CD 620; QD 661; R 667</p>
<p>L.8.C.3 Students know inter-related factors affect the number and type of organisms an ecosystem can support. E/S</p>	<p><b>Student Edition:</b>  629, 641 #21  <i>MiniLAB</i> 628  <i>Applying Science</i> 631  <i>Section Review</i> 632  <i>Design Your Own Lab</i> 636-637  <i>Science and Society</i> 638</p> <p><b>Teacher Wraparound Edition:</b>  A 637; AIL 636; D 630; DI 631; SJ 629</p>
<p><b>Diversity of Life (Life Science Unifying Concept D)</b></p> <p>Evidence suggests that living things change over periods of time. These changes can be attributed to genetic and/or environmental influences. This process of change over time is called biological evolution. The diversity of life on Earth is classified using objective characteristics. Scientific classification uses a hierarchy of groups and subgroups based on similarities that reflect evolutionary relationships.</p> <hr/> <p>By the end of grade band, students know and are able to do everything required in earlier grades and:</p> <hr/> <p><b>L.8.D Students understand that life forms change over time, contributing to the variety of organisms found on the Earth.</b></p>	
<p>L.8.D.1 Students know the characteristics of species. (8.8.6) E/S</p>	<p><b>Teacher Wraparound Edition:</b>  ACT 522</p>
<p>L.8.A.1: Students know that heredity is the passage of genetic instructions from one generation to the next generation. E/S</p>	<p><b>Student Edition:</b>  599-605  <i>Applying Math</i> 603  <i>Use the Internet Lab</i> 606-607</p> <p><b>Teacher Wraparound Edition:</b>  AIL 606; CFU 605; IM 588F, 602; SCB 588E; TFYI 603</p>

STANDARDS	PAGE REFERENCES
L.8.A.2: Students know that changes in genes of eggs and sperm can cause changes in inherited characteristics. E/S	<b>Student Edition:</b> 604
L.8.D.2 Students know that fossils provide evidence of how life and environmental conditions have changed throughout geologic time. E/S	<b>Student Edition:</b> 271 <i>MiniLAB 270</i> <b>Teacher Wraparound Edition:</b> A 270; DI 547
L.8.D.3 Students know that an organism's behavior is based on both experience and on the species' evolutionary history. E/S	<b>Student Edition:</b> 535-539, 545-547 <b>Teacher Wraparound Edition:</b> ACT 547; CFU 539; TPK 535