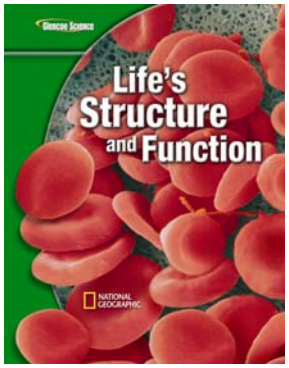
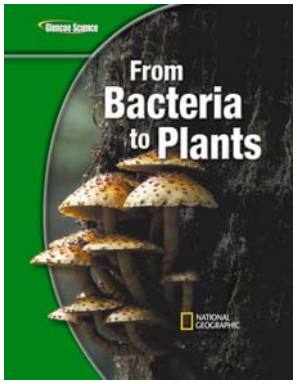
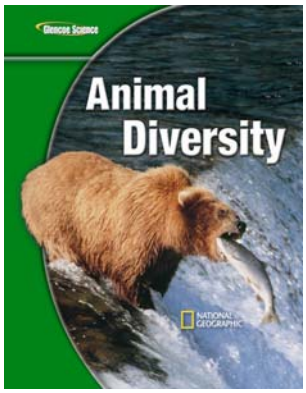
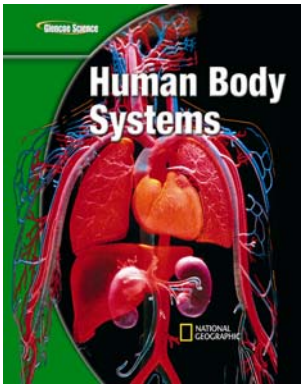
Glencoe

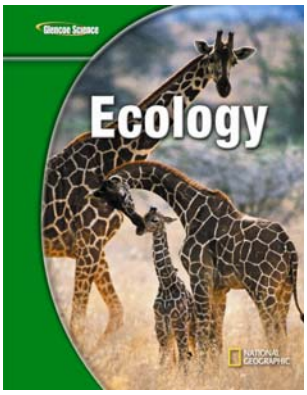
Science Grade Span Expectations
Life Science Grades 5-6, 7-8











Life's Structure and Function A
From Bacteria to Plants B
Animal Diversity C
Human Body Systems D
Ecology E

STANDARDS	PAGE REFERENCES
Life Science Grades 5-6	
LS1– All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).	

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

STANDARDS	PAGE REFERENCES
1. CLASSIFICATION	
S:LS1:6:1.1 Identify ways in which living things can be grouped and organized, such as taxonomic groups of plants, animals and fungi.	**Student Edition:** (A) 24-25 *Lab* 29 *Launch Lab* 7 *Reference Handbook* 223-226 *Science Online* 25 (B) 11, 33, 67 *Lab* 83 *Lab: Model and Invent* 52 *National Geographic* 66 *Section Review* 51 (#2), 67 (#2) (C) 12-13, 39-40, 72-75, 118-121 *Science Online* 12 **Teacher Wraparound Edition:** (A) AS 29; IL 25; RT 28 (B) DI 33, 45; VL 34 (C) AC 12; AS 13; DIF 74
S:LS1:6:1.2 Categorize organisms into kingdoms that are currently recognized, according to shared characteristics.	**Student Edition:** (A) 25 *Reference Handbook* 223-226 (B) 11, 33, 67 *Applying Science* 41 (C) 8 **Teacher Wraparound Edition:** (A) RT 28 (B) DI 45; TTPK 32 (C) DIF 9; TTPK 8
2. LIVING THINGS AND ORGANIZATION	
S:LS1:6:2.1 Recognize that all living things are composed of cells, and explain that while many organisms are single celled, such as yeast, others, including humans, are multicellular.	**Student Edition:** (A) 16, 40-41, 47 (B) 9, 32, 44, 46, 62-63 *Lab* 14 (C) 8 **Teacher Wraparound Edition:** (C) TTPK 8

STANDARDS	PAGE REFERENCES
S:LS1:6:2.2 Explain that the way in which cells function is similar in all organisms.	**Student Edition:** (A) 16, 40-47 **Teacher Wraparound Edition:** (A) DI 41 (B) IM 10
S:LS1:6:2.3 Recognize that cells use energy obtain from food, to conduct the functions necessary to sustain life, such as cell growth.	**Student Edition:** (A) 17, 44, 83-87 *Lab* 89 (B) 10, 11 (D) 47 (E) 20 **Teacher Wraparound Edition:** (A) VL 87 (D) TTPK 47
S:LS1:6:2.4 Recognize and describe the hierarchical organization of living systems, including cells, tissues, organs, organ systems, whole organisms, and ecosystems.	**Student Edition:** (A) 47 *Section Review* 47 (#3) (C) 8 (D) 49-53, 64-69, 94-95, 101-105, 152-153, 176-179 (E) 8-11 *Section Review* 11 (#1) **Teacher Wraparound Edition:** (A) RC 47 (E) CFU 11; DIF 10
S:LS1:6:2.5 Explain that multicellular organisms have specialized cells, tissues, organs and organ systems that perform certain necessary functions, including digestion, respiration, reproduction, circulation, excretion, movement, control and coordination and protection from disease.	**Student Edition:** (A) 47 *Section Review* 47 (#3) (B) 64, 74-77 *Integrate Health* 77 *The Nature of Science* 3-4 (C) 8, 18, 38, 43-45, 81-87, 110, 116-117 (D) 49-53, 64-69, 94-95, 101-105, 119, 121-123, 152-153, 176-179 **Teacher Wraparound Edition:** (A) RC 47 (B) AC 76; IH 77 (C) AC 110; LD 40; MM 18; QD 44, 83

STANDARDS	PAGE REFERENCES
S:LS1:6:2.6 Recognize that the human cells found in tissues and organs are similar to those of other animals, but somewhat different from cells found in plants.	The following page references can be used to meet this standard. **Student Edition:** (A) 41-46 *Lab* 48 *Section Review* 47 (#5) (B) 63 (C) 8 **Teacher Wraparound Edition:** (A) QD 41; VL 43
3. REPRODUCTION	
S:LS1:6:3.1 Explain that cells repeatedly divide to make more cells for growth and repair.	**Student Edition:** (A) 98 *Lab* 105 *Launch Lab* 97 **Teacher Wraparound Edition:** (A) CC 101; LD 102; QD 101
S:LS1:6:3.2 Explain that the same genetic information is copied in each cell of a new organism.	**Student Edition:** (A) 98-102 *MiniLab* 103 *Section Review* 105 (#4) **Teacher Wraparound Edition:** (A) VL 99
S:LS1:6:3.3 Explain that all living things reproduce in order to continue their species.	**Student Edition:** (A) 19, 106 (C) 8, 16, 19, 45, 79, 86, 117 (D) 151 **Teacher Wraparound Edition:** (A) RC 19; TFYI 19

STANDARDS	PAGE REFERENCES
LS2– Energy flows and matter recycles through an ecosystem.	
1. ENVIRONMENT	
S:LS2:6:1.1 Identify and describe the factors that influence the number and kinds of organisms an ecosystem can support, including the resources that are available, the differences in temperature, the composition of the soil, any disease, the threat of predators, and competition from other organisms.	**Student Edition:** (C) *Lab: Model and Invent* 150-151 (E) 14-16, 19, 24, 36-39, 69, 70, 74 *Lab: Design Your Own* 26-27 *Section Review* 19 (#3, #4) **Teacher Wraparound Edition:** (E) RT 19; TFYI 69
S:LS2:6:1.2 Explain that most microorganisms do not cause disease and that many are beneficial to the environment.	**Student Edition:** (A) 86 *Science Online* 86 (B) 15-16 *Integrate Social Studies* 18 *National Geographic* 17 (E) 46 *Lab* 43 **Teacher Wraparound Edition:** (A) DI 86 (B) LD 18; MM 17
2. FLOW OF ENERGY	
S:LS2:6:2.1 Describe how energy is transferred in an ecosystem through food webs; and explain the roles and relationships between producers, consumers and decomposers.	**Student Edition:** (A) 84-87 *Section Review* 87 (#1) (B) 10, 11-12, 51 (C) 9 (E) 20-21, 50-52 *Lab* 43 **Teacher Wraparound Edition:** (A) VL 87 (B) LD 18 (C) AC 9 (E) CFU 53; DI 51; DIF 51; LD 51

STANDARDS	PAGE REFERENCES
S:LS2:6:2.2 Recognize that one of the most general distinctions among organisms is between plants, which use sunlight to make their own food, and animals, which consume energy-rich foods.	**Student Edition:** (A) 17, 84-87 (B) 127-131 (C) 9 (E) 20-21, 50 **Teacher Wraparound Edition:** (A) CFU 87 (C) AC 9; QD 9; TTPK 8 (E) LD 51; RC 21
S:LS2:6:2.3 Describe the process of photosynthesis and explain that plants can use the food they make immediately or store it for later use.	**Student Edition:** (A) 17, 44, 84, 87 *Lab* 88-89 (B) 127-131 *Science Online* 128 (E) 50, 51 **Teacher Wraparound Edition:** (A) UA 84 (B) UA 129
S:LS2:6:2.4 Recognize that energy, in the form of heat, is usually a byproduct when one form of energy is converted to another, such as when living organisms transform stored energy to motion.	The following page references can be used to meet this standard. **Student Edition:** (A) 83, 85 (E) 52-53 **Teacher Wraparound Edition:** (B) LD 18 (E) QD 52; UA 52
3. RECYCLING OF MATERIALS	
S:LS2:6:3.1 Define a population as all individuals of a species that exist together at a given place and time; and explain that all populations living together in a community, along with the physical factors with which they interact, compose an ecosystem.	**Student Edition:** (E) 9-11 **Teacher Wraparound Edition:** (E) AC 10; DIF 10; RT 11
S:LS2:6:3.2 Using food webs, identify and describe the ways in which organisms interact and depend on one another in an ecosystem.	**Student Edition:** (E) 51-52 **Teacher Wraparound Edition:** (E) CFU 53; VL 52

STANDARDS	PAGE REFERENCES
S:LS2:6:3.3 Explain how insects and various other organisms depend on dead plant and animal matter for food; and describe how this process contributes to the system.	**Student Edition:** (B) 16, 51 *Lab: Design Your Own* 22-23 (C) 9, 27, 44, 47, 51, 61 *Lab* 62-63 (E) 21 *Lab* 43 **Teacher Wraparound Edition:** (B) LD 18
LS3– Groups of organisms show evidence of change over time (e.g. evolution, natural selection, structures, behaviors, and biochemistry).	
1. CHANGE	
S:LS3:6:1.1 Provide examples of how all organisms, including humans, impact their environment; and explain how some changes can be detrimental to other organisms.	**Student Edition:** (B) 12, 36, 42 *Lab: Design Your Own* 22-23 *Science Online* 36 *Time: Science and Society* 54 (C) 27, 42, 55, 95 (D) *Integrate Environment* 53 (E) 73, 79, 102-110, 130-131, 134-136 *MiniLab* 96, 133 *National Geographic* 132 *Time: Science and Society* 146 **Teacher Wraparound Edition:** (B) AC 54; LD 18; TFYI 36 (E) TFYI 132, 134
S:LS3:6:1.2 Explain how changes in environmental conditions can affect the survival of individual organisms and the entire species.	**Student Edition:** (C) 95 *Integrate Earth Science* 41 *Integrate History* 95 (D) *Integrate Environment* 53 (E) 130-131, 133-136 *National Geographic* 132 *Time: Science and Society* 146 **Teacher Wraparound Edition:** (C) IES 41; IH 95; TFYI 60 (E) SJ 131; TFYI 132, 134

STANDARDS	PAGE REFERENCES
2. EVIDENCE OF EVOLUTION	
S:LS3:6:2.1 Describe the fundamental concepts related to biological evolution, such as biological adaptations and the diversity of species.	**Student Edition:** (A) 157-163, 169-171 *Lab* 164 *Launch Lab* 155 *MiniLab* 161 *Science Online* 158 *Section Review* 163 (#5) (B) 63-65, 110 *National Geographic* 111 (C) 9-11 *MiniLab* 10, 88, 81 (E) 126-127 *MiniLab* 72 *Section Review* 75 (#6) **Teacher Wraparound Edition:** (A) AC 158; QD 158; IL 162 (B) AC 65; QD 64; VSD 111 (C) DIF 11 (E) LD 72
3. NATURAL SELECTION	
S:LS3:6:3.1 Recognize that there are genetic variations among individuals in groups of organisms and provide examples of how these variations affect the survival of an organism.	**Student Edition:** (A) 158-160 *Applying Science* 159 *Lab: Design Your Own* 176-177 *Section Review* 163 (#2) **Teacher Wraparound Edition:** (A) IL 162; LD 160
S:LS3:6:3.2 Recognize that only organisms that are able to reproduce can pass on their genetic information to the next generation.	The following page references can be used to meet this standard. **Student Edition:** (A) 159, 160 *MiniLab* 161 (E) 130

STANDARDS	PAGE REFERENCES
LS4– Humans are similar to other species in many ways, and yet are unique among Earth's life forms.	
1. BEHAVIOR	
S:LS4:6:1.1 Recognize that learning requires more than just storage and retrieval of information and that prior knowledge needs to be tapped in order to make sense out of new experiences or information.	**Student Edition:** (C) 136-139 **Teacher Wraparound Edition:** (C) AC 137; AS 139; DIF 137; TFYI 139
S:LS4:6:1.2 Explain that people can learn about others from direct experience, from the media, and from listening to others talk about their life and work.	The following page references can be used to meet this standard. **Student Edition:** (A) *The Nature of Science* 2-5 (B) *The Nature of Science* 2-5 (C) 136-139 *The Nature of Science* 2-5 (E) *The Nature of Science* 2-5 (E) *The Nature of Science* 2-5 **Teacher Wraparound Edition:** (C) CDIV 138
S:LS4:6:1.3 Provide examples of how humans make judgments about new situations based on memories of past experiences.	**Student Edition:** (C) 136-139 **Teacher Wraparound Edition:** (C) AC 137; CDIV 138; TFYI 139
2. DISEASE	
S:LS4:6:2.1 Explain that the human body has ways to defend itself against disease-causing organisms and describe how defenders, including tears, saliva, the skin, some blood cells and stomach secretions support the defense process.	**Student Edition:** (A) 57 (E) 21, 176-179 *Lab: Design Your Own* 196-197 *Section Review* 180 (#2)

STANDARDS	PAGE REFERENCES
S:LS4:6:2.2 Recognize that there are some diseases that human beings can only get once; and explain how many diseases can be prevented by vaccination.	**Student Edition:** (A) 56-57 *Section Review* 57 (#4) (B) 21 (D) 179, 180 *Integrate History* 182 **Teacher Wraparound Edition:** (A) USW 56 (B) AS 21 (D) IH 182; QD 178
S:LS4:6:2.3 Explain how vaccines induce the body to build immunity to a disease without actually causing the disease itself.	**Student Edition:** (A) 56 (B) 21 (D) 179, 180 *Integrate History* 182 **Teacher Wraparound Edition:** (B) AS 21 (D) IH 182; QD 178
S:LS4:6:2.4 Recognize a healthy body cannot fight all germs that invade it; and explain how some germs interfere with the body's defenses.	**Student Edition:** (A) 56 (B) 19 *Science Online* 19 (C) *Integrate Social Studies* 51 (D) 176-177, 182, 186-187 **Teacher Wraparound Edition:** (B) DI 19

STANDARDS	PAGE REFERENCES
3. HUMAN IDENTITY	
S:LS4:6:3.1 Recognize that the length and quality of human life are influenced by many factors, including sanitation, diet, medical care, gender, genes, environmental conditions, and personal health behaviors.	**Student Edition:** (A) 56-57 *Time: Science and History* 178 (B) 21, 40, 51 *Integrate Health* 39 (C) 23-24 *Integrate Health* 80 *National Geographic* 26 (D) 36-40, 42-45, 100, 186-188, 190-194 *Applying Science* 40 *Time: Science and Society* 56 (E) *Time: Science and Society* 86 **Teacher Wraparound Edition:** (B) IH 39 (C) AC 26; DIF 24; SJ 24 (E) AC 193; QD 192; TFYI 192
LS5– The growth of scientific knowledge in Life Science has been advanced through the development of technology and is used (alone or in combination with other sciences) to identify, understand and solve local and global issues.	
1. DESIGN TECHNOLOGY	
S:LS5:6:1.1 Recognize that an agricultural system is designed to maximize the use of all the elements in the system, including using plants for food, oxygen, for the filtration of air and water, and for making compost.	The following page references can be used to meet this standard. **Student Edition:** (B) 16, 82 *Lab: Design Your Own* 22-23 *National Geographic* 17 *Time: Science and Society* 54 (C) 27, 47, 55, 56 *Lab* 62-63 (E) 47, 109 *Integrate Career* 41 *MiniLab* 47 **Teacher Wraparound Edition:** (B) AC 17; LD 18 (C) CDIV 55; TFYI 44 (E) VL 47

STANDARDS	PAGE REFERENCES
2. TOOLS	
S:LS5:6:2.1 Demonstrate the appropriate use of tools, such as thermometers, probes, microscopes and computers to gather, analyze and interpret data in the life sciences.	**Student Edition:** (A) *Lab* 48 *Lab: Design Your Own* 58-59 *Lab: Use the Internet* 118-119 *Reference Handbook* 222 *Technology Skill Handbook* 201-204 (B) *Lab* 14, 43, 132 *Lab: Use the Internet* 84-85 (C) *Lab* 76 *Lab: Design Your Own* 96-97 (D) *Lab: Use the Internet* 26-27 (E) *Lab* 54-55, 111 **Teacher Wraparound Edition:** (A) IL 51; TTPK 49
3. SOCIAL ISSUES (LOCAL AND GLOBAL) MEDICAL TECHNOLOGY BIOTECHNOLOGY	
S:LS5:6:3.1 Provide examples of early health care technology that helped to extend the life expectancy of humans, such as the discovery of penicillin and sterilization of surgical instruments.	**Student Edition:** (A) 56-57 (B) 21, 51 (E) 181-182, 184 *Integrate History* 182 *Section Review* 188 (#1) *Time: Science and History* 84 **Teacher Wraparound Edition:** (B) CC 69 (E) CC 179; DIF 183; SJ 184
S:LS5:6:3.2 Differentiate between vaccines, which help prevent diseases from developing and spreading, and medicines, which relieve symptoms or cure diseases.	**Student Edition:** (A) 56-57 *Section Review* 57 (#5) (B) 15, 21, 51 *Lab: Use the Internet* 84-85 (C) *Time: Science and Society* 98 (E) 179, 180, 191 **Teacher Wraparound Edition:** (B) AS 21; TFYI 70 (E) TFYI 191

STANDARDS	PAGE REFERENCES
S:LS5:6:3.3 Recognize that the quality of personal health can be influenced by society and technology.	**Student Edition:** (A) 56-57 *The Nature of Science* 4 (B) 15, 21, 40, 51 (C) *Time: Science and Society* 98 (D) 44-45, 184, 195 *Oops! Accidents in Science* 28 (E) *Time: Science and Society* 86 **Teacher Wraparound Edition:** (A) DIF 56 (B) AS 21 (C) DI 98; DIF 24; SJ 24 (E) CDIV 44
S:LS5:6:3.4 Identify and describe some of the processes and systems used to grow food in New Hampshire, including irrigation, pest control and harvesting.	The following page references can be used to meet this standard. **Student Edition:** (A) 144 *Integrate Environment* 144 *Section Review* 145 (#3, #5) (B) 18, 50 *Integrate Career* 50 *National Geographic* 17 *Time: Science and Society* 54, 116 (C) 47, 55-56 (E) 47, 109 *Integrate Career* 41 *MiniLab* 47 **Teacher Wraparound Edition:** (A) CDIV 144; TTPK 143 (B) AC 17 (C) CDIV 55; DIF 55; MM 55 (E) VL 47

STANDARDS	PAGE REFERENCES
4. CAREER TECHNICAL EDUCATION CONNECTIONS	
S:LS5:6:4.1 Understand that some form of science is used in most jobs/careers and that some jobs/careers specifically require knowledge of life science.	**Student Edition:** (A) 8-9 *Integrate Career* 52, 85, 99 *The Nature of Science* 5 (B) *Integrate Career* 50, 125 (D) *Integrate Career* 158 (E) *Integrate Career* 41 **Teacher Wraparound Edition:** (A) IM 9; TTPK 8 (B) IC 50, 125 (D) IC 158 (E) IC 41

STANDARDS	PAGE REFERENCES
Life Science Grades 7-8	
LS1– All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).	
1. CLASSIFICATION	
S:LS1:8:1.1 Recognize that similarities among organisms are found in anatomical features and patterns of development; and explain how these can be used to infer the degree of relatedness among organisms.	**Student Edition:** (A) 25, 169-171 (B) 11, 13, 33, 44, 63, 66 *National Geographic* 66 (C) 12-13, 39-40, 72-75, 118-121 *Science Online* 12 (D) *Lab: Use the Internet* 26-27 **Teacher Wraparound Edition:** (A) IL 25; RC 25; TFYI 169 (B) DI 33 (C) AC 12; AS 13; DIF 74
S:LS1:8:1.2 Describe or compare how different organisms have mechanisms that work in a coordinated way to obtain energy, grow, move, respond, provide defense, enable reproduction, or maintain internal balance (e.g., cells, tissues, organs and systems). [LS1(5-**8**)SAE+FAF-**2]**	**Student Edition:** (A) 47 (B) 74-77, 99-101, 103-110, 124-125, 133-136 *Integrate Health* 77 *Lab* 140-141 *MiniLab* 75 (C) 8, 18, 38, 43-45, 81-87, 110, 116-117 (D) 49-53, 64-69, 94-95, 101-105, 152-153, 176-179 **Teacher Wraparound Edition:** (B) IH 77; VL 125 (C) AC 110; LD 40; MM 18; QD 44, 83
2. LIVING THINGS AND ORGANIZATION	
S:LS1:8:2.1 Identify the functions of the human body's systems, including digestion, respiration, reproduction, circulation, excretion, movement, control and coordination and protection from disease; and describe how they interact with one another.	**Student Edition:** (D) 8, 14-15, 21-22, 47, 64-69, 80, 92-93, 101-105, 118-119, 121-123, 146-147, 151-153 *National Geographic* 148-149 *Section Review* 13 (#1), 100 (#1) **Teacher Wraparound Edition:** (D) DIF 67; TFYI 102; TTPK 47, 92

STANDARDS	PAGE REFERENCES
S:LS1:8:2.2 Define a population and describe the factors that can affect it.	**Student Edition:** (E) 10, 12-17 *Lab: Design Your Own* 26-27 *MiniLab* 13 *National Geographic* 18 *Section Review* 11 (#6), 19 (#4) **Teacher Wraparound Edition:** (E) AC 15; DIF 10; IM 10
S:LS1:8:2.3 Explain why it is beneficial for an organism to be able to regulate its internal environment while living in a constantly changing external environment.	**Student Edition:** (A) 17, 79-80 *National Geographic* 81 *Science Online* 17 *Section Review* 20 (#5) (B) 125, 133-136 *Lab* 132 *The Nature of Science* 2-3 (C) 75, 78, 81 *Lab: Design Your Own* 96-97 *MiniLab* 81 (D) 118-119, 121-124, 146-147 *National Geographic* 120, 148-149 **Teacher Wraparound Edition:** (A) UA 17 (B) DI 134; QD 125 (E) QD 149

STANDARDS	PAGE REFERENCES
S:LS1:8:2.4 Explain relationships between or among the structure and function of the cells, tissues, organs, and organ systems in an organism. [LS1(5-**8**)FAF-**4]**	**Student Edition:** (A) 40-47, 79-80 *Integrate Health* 79 *National Geographic* 81 *Section Review* 47 (#3) (B) 74-77, 124-125 *Integrate Health* 77 *MiniLab* 75 (C) 8, 15-16, 18-19, 38, 43-45, 48-51, 77-79, 85-86, 90-91 (D) 49-53, 64-69, 94-95, 101-105, 152-153, 176-179 **Teacher Wraparound Edition:** (A) RC 47 (B) IH 77; VL 125 (C) LD 40; QD 44
S:LS1:8:2.5 Using data and observations about the biodiversity of an ecosystem, make predictions or draw conclusions about how the diversity contributes to the stability of the ecosystem. [LS1(5-**8**)INQ+SAE-**1**]	The following page references can be used to meet this standard. **Student Edition:** (A) *Time: Science and Society* 32 (E) 126-129 *Lab* 144-145 *Time: Science and Society* 146 **Teacher Wraparound Edition:** (E) AC 128; DIF 144
3. REPRODUCTION	
S:LS1:8:3.1 Differentiate between asexual and sexual reproduction, and explain that in some kinds of organisms, all the genes come from one parent, while in organisms requiring two sexes to reproduce, typically half the genes come from each parent.	**Student Edition:** (A) 103-104, 106-107 *Section Review* 111 (#4) (B) 10, 32, 45, 94-97 *MiniLab* 95 *Section Review* 97 (#2, #3) (C) 8, 16, 19, 23, 45, 79, 86 (D) 151, 157 **Teacher Wraparound Edition:** (A) LD 102 (B) MM 20 (C) VL 16 (D) TTPK 151

STANDARDS	PAGE REFERENCES
S:LS1:8:3.2 Explain that a species of sexually reproducing organisms is comprised of all the organisms that can mate to produce fertile offspring.	**Student Edition:** (A) 25, 156
S:LS1:8:3.3 Explain that in sexual reproduction, a single specialized cell from a female merges with a specialized cell from a male in a process called fertilization.	**Student Edition:** (A) 106 *Section Review* 111 (#1) (B) 95-96, 103-104, 109 (C) 19, 23, 45, 79, 86 (D) 157 **Teacher Wraparound Edition:** (B) CFU 97
S:LS1:8:3.4 Explain that the fertilized egg cell, carrying genetic information from each parent, multiplies to form the complete organism.	**Student Edition:** (A) 98, 106 *Section Review* 111 (#1) (B) 104, 108-110, 112-113 (C) 19, 23, 45, 79, 86 (D) 157-160 **Teacher Wraparound Edition:** (A) CC 101
S:LS1:8:3.5 Explain how the basic tissues of an embryo form.	**Student Edition:** (A) 98, 106 (B) 110 (C) 72-73, 119 (D) 158-160 **Teacher Wraparound Edition:** (A) CC 101 (D) IL 159; MM158

STANDARDS	PAGE REFERENCES
S:LS1:8:3.6 Compare and contrast sexual reproduction with asexual reproduction. [LS1(5-**8**)POC-**3**]	**Student Edition:** (A) 103-104, 106-107 *Section Review* 111 (#4) (B) 10, 32, 45, 94-97 *MiniLab* 95 *Section Review* 97 (#2) (C) 8, 16, 19 (D) 151, 157 **Teacher Wraparound Edition:** (A) LD 102 (B) AC 96; AS 97; MM 10 (C) AC 19; VL 16 (D) TTPK 151
S:LS1:8:3.7 Using data provided, select evidence that supports the concept that genetic information is passed on from both parents to offspring. [LS4(5-**8**)INQ+POC-**11**]	**Student Edition:** (A) 128-130 *National Geographic* 131 **Teacher Wraparound Edition:** (A) IL 129; TTPK 128
LS2– Energy flows and matter recycles through an ecosystem.	
1. ENVIRONMENT	
S:LS2:8:1.1 Explain how changes in environmental conditions can affect the survival of individual organisms and an entire species.	**Student Edition:** (A) *Time: Science and Society* 32 (B) 19 (C) 95 *Integrate Earth Science* 41 *Integrate History* 95 (E) 130-131, 133-136 *National Geographic* 132 *Time: Science and Society* 146 **Teacher Wraparound Edition:** (A) CB 32 (C) IES 41; IH 95; TFYI 60 (E) SJ 131; TFYI 132, 134

STANDARDS	PAGE REFERENCES
S:LS2:8:1.2 Explain that in all environments, organisms with similar needs may compete with one another for resources, including food, space, water, air, and shelter, and that in any particular environment the growth and survival of organisms depend on the physical conditions.	**Student Edition:** (A) 159 (B) 19 (E) 12-16, 19, 24 *Lab: Design Your Own* 26-27 *MiniLab* 13 **Teacher Wraparound Edition:** (A) VL 159
S:LS2:8:1.3 Using data and observations, predict outcomes when abiotic/biotic factors are changed in an ecosystem. [LS2(5-**8**)INQ+SAE-**5**]	**Student Edition:** (A) *Time: Science and Society* 32 (E) 128-129, 133-136 *Lab: Design Your Own* 26-27 *MiniLab* 133, 135 *Time: Science and Society* 146 **Teacher Wraparound Edition:** (A) CB 32 (E) UA 130
2. FLOW OF ENERGY	
S:LS2:8:2.1 Explain how food provides energy and materials for growth and repair of body parts.	**Student Edition:** (A) 83, 85, 87 (B) 130 (C) 9 (D) 47 (E) 51 **Teacher Wraparound Edition:** (A) TTPK 83 (D) TTPK 47
S:LS2:8:2.2 Given a scenario, trace the flow of energy through an ecosystem, beginning with the sun, through organisms in the food web, and into the environment (includes photosynthesis and respiration). [LS2(5-**8**)SAE-**6**]	**Student Edition:** (A) 87 (E) 21, 51-52 **Teacher Wraparound Edition:** (A) VL 87 (E) AC 51; DIF 51; VL 52

STANDARDS	PAGE REFERENCES
3. RECYCLING OF MATERIALS	
S:LS2:8:3.1 Identify autotrophs as producers who may use photosynthesis, and describe this as the basis of the food web.	**Student Edition:** (A) 84, 87 (B) 129 (E) 20, 50-51 **Teacher Wraparound Edition:** (A) UA 84 (E) DIF 51
S:LS2:8:3.2 Explain the process of respiration and differentiate between it and photosynthesis.	**Student Edition:** (A) 44, 85, 87 (B) 127-131 (E) 49 *Science Online* 49 **Teacher Wraparound Edition:** (A) AS 87; VL 87 (B) AS 131; QD 129
S:LS2:8:3.3 Know that all organisms, including humans, are part of, and depend on, two main interconnected global food webs: one which includes microscopic ocean plants, and the other which includes land plants.	**Student Edition:** (B) 12 (E) 20-21, 51-52 **Teacher Wraparound Edition:** (E) AC 51
S:LS2:8:3.4 Describe how matter is recycled within ecosystems and explain that the total amount of matter remains the same, though its form and location change.	The following page references can be used to meet this standard. **Student Edition:** (B) 16, 42, 51 *Lab: Design Your Own* 22-23 (C) 9, 27, 44, 47, 51, 61 *Lab* 62-63 (E) 21, 44-47, 49 *Lab* 43, 54-55 **Teacher Wraparound Edition:** (B) LD 18
S:LS2:8:3.5 Identify carbon, hydrogen, oxygen, nitrogen and phosphorus as common elements of living matter.	**Student Edition:** (A) 69, 72-73 (B) 16 (E) 46, 49

STANDARDS	PAGE REFERENCES
S:LS2:8:3.6 Given an ecosystem, trace how matter cycles among and between organisms and the physical environment (includes water, oxygen, food web, decomposition and recycling, but not carbon cycle nor nitrogen cycle). [LS2(5-**8**)SAE-**7**]	**Student Edition:** (B) 16, 42, 51 *Lab: Design Your Own* 22-23 (C) 9, 27, 44, 47, 51, 61 *Lab* 62-63 (E) 21, 44-45 *Lab* 43 **Teacher Wraparound Edition:** (E) SJ 45
LS3– Groups of organisms show evidence of change over time (e.g. evolution, natural selection, structures, behaviors, and biochemistry).	
1. CHANGE	
S:LS3:8:1.1 Describe the type of impact certain environmental changes, including deforestation, invasive species, increased erosion, and pollution containing toxic substances, could have on local environments.	**Student Edition:** (A) *Time: Science and Society* 32 (B) 12 *Applying Science* 70 *Time: Science and Society* 116 (C) 89, 95 *Integrate Earth Science* 41 *Integrate History* 95 (E) 73, 79, 102-110, 130-131, 134-136 *MiniLab* 96, 133 *National Geographic* 132 *Time: Science and Society* 146 **Teacher Wraparound Edition:** (A) CB 32 (B) DI 116 (C) CDIV 41; IES 41; IH 95; TFYI 60 (E) TFYI 132, 134

STANDARDS	PAGE REFERENCES
2. EVIDENCE OF EVOLUTION	
S:LS3:8:2.1 Describe how the fossil record provides geologic evidence verifying the existence of now extinct life forms, and explains how this evidence provides documented proof of their appearance, diversification and extinction.	**Student Edition:** (A) 165-167, 169, 173-174 *Integrate Earth Science* 169 *Science Online* 167 (B) 63 (C) 19, 41, 56, 61, 75, 84, 89, 95, 113, 122 **Teacher Wraparound Edition:** (A) DI 174 (B) VL 63
S:LS3:8:2.2 Explain the concept of extinction and describes its importance in biological evolution.	The following page references can be used to meet this standard. **Student Edition:** (A) 156 *MiniLab* 161 (C) 9 (E) 130 **Teacher Wraparound Edition:** (E) TFYI 130
S:LS3:8:2.3 Use a model, classification system, or dichotomous key to illustrate, compare, or interpret possible relationships among groups of organisms (e.g., internal and external structures, anatomical features). [LS3(5-**8**)MAS+FAF-**8**]	**Student Edition:** (A) 25, 27-28 *Lab* 29 *Launch Lab* 7 (B) 67 *Lab* 43, 83, 102 *Lab: Model and Invent* 52-53 *National Geographic* 66 (C) 12-13, 39-40, 72-75, 118-121 *Science Online* 12 *Section Review* 122 (#4) (D) *Lab: Use the Internet* 26-27 **Teacher Wraparound Edition:** (A) AC 28 (B) AS 83 (C) AS 13; CFU 75

STANDARDS	PAGE REFERENCES
3. NATURAL SELECTION	
S:LS3:8:3.1 Recognize that hereditary information is contained in genes, which are located in the chromosomes of each cell; and explain that inherited traits can be determined by either one or many genes, and that a single gene can influence more than one trait, such as eye and hair color.	**Student Edition:** (A) 100, 114-116, 128, 130, 132, 134, 136-141 *MiniLab* 138 *Science Online* 137 **Teacher Wraparound Edition:** (A) DI 137
S:LS3:8:3.2 Recognize that in any given environment the growth and survival of organisms depend on the physical conditions that exist; and explain that in all environments, organisms with similar needs may compete with one another for resources, including food, space, water, air, and shelter.	**Student Edition:** (A) 159 (E) 9-11, 12, 14-16, 19, 23-24, 36-39 *Lab: Design Your Own* 26-27 *MiniLab* 13 **Teacher Wraparound Edition:** (A) VL 159
S:LS3:8:3.3 Explain how individual organisms with certain traits are more likely than others to survive and have offspring.	**Student Edition:** (A) 159, 160 (C) 9 **Teacher Wraparound Edition:** (A) VL 159
S:LS3:8:3.4 Recognize that humans are able to control some characteristics of plants and animals through selective breeding; and explain how this results in small differences between the parents and offspring, which can accumulate in successive generations so that decedents are very different from their ancestors.	**Student Edition:** (A) 142, 145 **Teacher Wraparound Edition:** (A) TTPK 143

STANDARDS	PAGE REFERENCES
S:LS3:8:3.5 Cite examples supporting the concept that certain traits of organisms may provide a survival advantage in a specific environment and therefore, an increased likelihood to produce offspring. [LS3(5-**8**)POC-**9**]	**Student Edition:** (A) 160-161 *Lab* 164 *Launch Lab* 155 *Section Review* 163 (#5) (B) 64-65, 110 *National Geographic* 111 (C) 9-11 *MiniLab* 10 *Section Review* 11 (#6) (E) 126-127 *MiniLab* 72 *Section Review* 75 (#6) **Teacher Wraparound Edition:** (A) QD 158 (B) AC 65; LD 65 (C) VL 11
LS4– Humans are similar to other species in many ways, and yet are unique among Earth's life forms.	
1. BEHAVIOR	
S:LS4:8:1.1 Recognize that unlike human beings, behavior in insects and many other species is determined almost entirely by biological inheritance.	**Student Edition:** (B) 133-134, 138-139 (C) 134-136, 140-144 *Lab* 149 **Teacher Wraparound Edition:** (C) LD 136; MM 141
S:LS4:8:1.2 Explain that organism's behavioral response is a reaction to internal or and environmental stimuli, and that these responses may be determined by heredity or from past experience.	**Student Edition:** (B) 133-134 *Section Review* 139 (#1) (C) 11, 134-139, 140-144 *Lab* 149 *MiniLab* 138 *Oops! Accidents in Science* 152 **Teacher Wraparound Edition:** (B) VL 134 (C) AC 137; LD 136; TFYI 138

STANDARDS	PAGE REFERENCES
S:LS4:8:1.3 Explain how all behavior is affected by both inheritance and experience.	**Student Edition:** (C) 11, 134-139, 140-144 *Lab* 149 *MiniLab* 138 *Oops! Accidents in Science* 152 **Teacher Wraparound Edition:** (C) AC 137; LD 136; TFYI 138
2. DISEASE	
S:LS4:8:2.1 Recognize that disease in organisms can be caused by intrinsic failures of the system or infection from other organisms.	**Student Edition:** (A) 56 (B) 19, 40, 51 *Integrate Health* 39 *The Nature of Science* 2-5 *Time: Science and Society* 54 (C) 23-24, 27, 55 *Integrate Social Studies* 51 *National Geographic* 26 (D) 71, 98-100, 182, 185-187, 190-194 *National Geographic* 70 *Science Online* 71 **Teacher Wraparound Edition:** (B) CB 54; DI 19; IH 39; VL 3 (C) AC 26; DIF 24 (D) AC 193
S:LS4:8:2.2 Describe how viruses, bacteria, fungi, and parasites may affect the human body and provide examples of how they can interfere with normal body function.	**Student Edition:** (A) 56, 57 (B) 19, 39, 40, 51 *Integrate Health* 39 (C) 23-24, 27, 55 *Integrate Social Studies* 51 *National Geographic* 26 (D) 176-179, 181-182, 185-187 **Teacher Wraparound Edition:** (A) CFU 57 (B) DI 19; IH 39 (C) AC 26; DIF 24 (D) DI 177

STANDARDS	PAGE REFERENCES
S:LS4:8:2.3 Describe the function of white blood cells and explain how they support the body's defense system.	**Student Edition:** (B) 21 (D) 75, 177 *Science Online* 75 **Teacher Wraparound Edition:** (B) AS 21
S:LS4:8:2.4 Use data and observations to support the concept that environmental or biological factors affect human body systems (biotic and abiotic). [LS4(5-**8**)INQ-**10**]	**Student Edition:** (A) 56-57 *Time: Science and History* 178 (B) 19, 39, 40, 51 *Integrate Health* 39 (C) 23-24, 27, 55 *Integrate Social Studies* 51 *National Geographic* 26 (D) 98-100, 181-182, 185, 186-187, 192 **Teacher Wraparound Edition:** (B) DI 19; IH 39 (C) AC 26; DIF 24 (D) TFYI 192
3. HUMAN IDENTITY	
S:LS4:8:3.1 Compare patterns of human development with those of other vertebrates.	**Student Edition:** (C) 72-75, 79, 86-87, 118-119 (D) 157-165 **Teacher Wraparound Edition:** (C) AC 87; DIF 119 (D) QD 163
S:LS4:8:3.2 Recognize that an organism can be described in terms of a combination of traits; and differentiate between inherited traits and those that result from interactions with the environment.	**Student Edition:** (A) 128, 132, 134, 136-141 (C) 134-139 **Teacher Wraparound Edition:** (A) TTPK 136 (C) CFU 139

STANDARDS	PAGE REFERENCES
S:LS4:8:3.3 Describe the major changes that occur over time in human development from single cell through embryonic development to new born (i.e., group of cells during the first trimester, organs form during the second, organs mature during the third). [LS4(5-**8**)POC-**12**]	**Student Edition:** (D) 157-160 *MiniLab* 160 *Section Review* 165 (#6) **Teacher Wraparound Edition:** (D) MM 158
S:LS4:8:3.4 Using data provided, select evidence that supports the concept that genetic information is passed on from both parents to offspring. [LS4(5-**8**)INQ+POC-**11**]	**Student Edition:** (A) 128-130 *National Geographic* 131 **Teacher Wraparound Edition:** (A) IL 129; TTPK 128
LS5– The growth of scientific knowledge in Life Science has been advanced through the development of technology and is used (alone or in combination with other sciences) to identify, understand and solve local and global issues.	
1. DESIGN TECHNOLOGY	
S:LS5:8:1.1 Explain how technology has influenced the course of history, and provide examples such as those that relate to agriculture, sanitation and medicine.	**Student Edition:** (A) 21, 56 (B) 15, 20, 21, 51 *Integrate Career* 50 *Time: Science and Society* 116 (D) 181-182, 184 *Section Review* 188 (#1) *Time: Science and History* 84 (E) *Time: Science and Society* 86 **Teacher Wraparound Edition:** (A) DI 21 (B) CDIV 16; IC 50 (D) CC 179; DIF 183; SJ 184
S:LS5:8:1.2 Provide examples of ways technology is used to protect the environment, such as using bacteria to clean water.	**Student Edition:** (B) 16 *Integrate Social Studies* 18 (C) 56 (E) *Time: Science and Society* 86 **Teacher Wraparound Edition:** (B) TFYI 16

STANDARDS	PAGE REFERENCES
2. TOOLS	
S:LS5:8:2.1 Recognize and provide examples of how technology has enhanced the study of life sciences, as in the development of advanced diagnosing equipment improving medicine.	**Student Edition:** (A) 52-53 *National Geographic* 50-51 *Section Review* 53 (#1) *The Nature of Science* 2-5 **Teacher Wraparound Edition:** (A) DI 5
3. SOCIAL ISSUES (LOCAL AND GLOBAL) MEDICAL TECHNOLOGY BIOTECHNOLOGY	
S:LS5:8:3.1 Explain the necessity of and purpose for the proper disposal of medical products.	The following page references can be used to meet this standard. **Student Edition:** (D) 184-185, 187, 188 *Lab* 189 *Launch Lab* 175 **Teacher Wraparound Edition:** (D) VL 184
S:LS5:8:3.2 Give examples of how increased understanding of biology has led to improvements in biotechnology, such as scientific methods for increasing the yield or the pest-resistance of important food crops.	The following page references can be used to meet this standard. **Student Edition:** (A) 144 *Integrate Environment* 144 *Section Review* 145 (#3, #5) (B) *Integrate Career* 50 *Time: Science and Society* 54, 116 (C) 56 (E) *Time: Science and Society* 86 **Teacher Wraparound Edition:** (A) CDIV 144; TTPK 143 (B) IC 50 (C) CDIV 55; DIF 55

STANDARDS	PAGE REFERENCES
S:LS5:8:3.3 Describes ways biotechnology helps humans, including improved health and medicine.	**Student Edition:** (A) 57, 143-144 *The Nature of Science* 2, 4-5 *Time: Science and History* 60 (B) 51 *Integrate Career* 50 *Integrate Social Studies* 18 *Time: Science and Society* 54, 116 (C) 56 (D) 106, 179, 180 *Oops! Accidents in Science* 28 *Time: Science and History* 84 (E) *Time: Science and Society* 86 **Teacher Wraparound Edition:** (A) DFU 145; DIF 56 (B) IC 50 (C) CDIV 55; DIF 55
4. CAREER TECHNICAL EDUCATION CONNECTIONS	
S:LS5:8:4.1 Understand that some scientific jobs/careers involve the application of life science content knowledge and experience in specific ways that meet the goals of the job.	**Student Edition:** (A) 8-9 *Integrate Career* 52, 85, 99 *The Nature of Science* 5 (B) *Integrate Career* 50, 125 (D) *Integrate Career* 158 (E) *Integrate Career* 41 **Teacher Wraparound Edition:** (A) IM 9; TTPK 8 (B) IC 50, 125 (D) IC 158 (E) IC 41