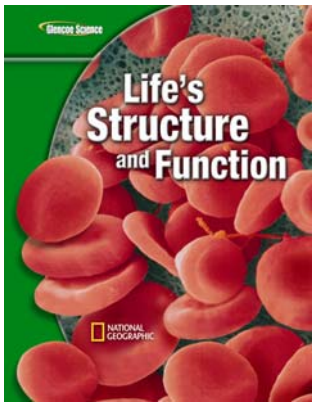
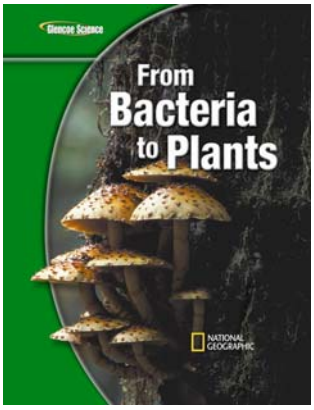
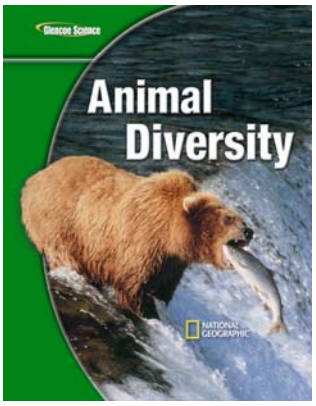
Glencoe

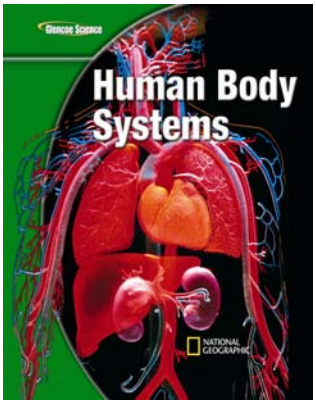
Science Grade Span Expectations
Life Science Grades 5-6, 7-8

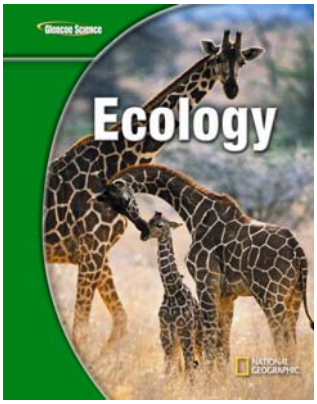
Rhode Island











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).	
LS1 (5-8) – INQ+ SAE- 1 *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.*	

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

STANDARDS	PAGE REFERENCES
LS1 (5-6) – 1 **Students demonstrate understanding of biodiversity by…**	
1a recognizing that organisms have different features and behaviors for meeting their needs to survive (e.g., fish have gills for respiration, mammals have lungs, bears hibernate).	**Student Edition:** (A) 18-20, 55 (B) 6E, 30E-30F, 33-36, 37-39, 46-48, 62, 63-65, 68-69, 70-73, 110 *National Geographic* 111 *Integrate Environment* 106 *Science Stats* 24 (C) 6E-6F, 9-11, 22-23, 36E-36F, 39, 40, 52-53, 59-61, 70E-70F, 73-74, 77, 90-91, 104E-104F, 106-107, 114-116, 132E-132F, 140-144, 146-148 *Lab* 28, 150 *LaunchLab* 37 *MiniLab* 10 *National Geographic* 54, 112 (D) 21-23, 47-49, 64-67, 74-76, 92-93, 96, 101-103, 128, 135, 146, 151, 162-165, 176-180 *Applying Science* 104 *Lab* 107 *Lab: Design Your Own* 136-137 **Teacher Wraparound Edition:** (A) SJ 18; TFYI 19; VL 19 (C) A 54; AIL 28; D 20; DI 11; IL 86; TBI 6; VL 11 (D) D 75, 76; DI 23; FF 103; IL 23; TFYI 21, 48, 49, 102, 162; TPK 92, 146, 151

STANDARDS	PAGE REFERENCES
LS1 (5-8) SAE+FAF –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 (5-6) – 2 **Students demonstrate understanding of structure and function-survival requirements by…**	
2a describing structures or behaviors that help organisms survive in their environment (e.g., defense, obtaining nutrients, reproduction, and eliminating waste).	**Student Edition:** (A) 18-20, 54-55, 158-159, 160-161 *Lab* 164 (B) 6E, 11-13, 30E-30F, 33-35, 37-39, 46-48, 60E-60F, 64-65, 68-70, 92E-92F, 124 *Integrate Environment* 106 *MiniLab* 110 *Science Stats* 24 *Visualize Seed Dispersal* 111 (C) 10-11, 15, 18, 22-24, 36E-36F, 39, 40, 52-53, 55, 59-61, 70E-70F, 77-79, 80-83, 88, 90-91, 107-108, 114-116, 118-119, 120-121, 132E-132F, 135-139, 140-145, 146-148 *Applying Science* 147 *Lab: Design Your Own* 28-29 *Lab: Model and Invent* 150-151 *LaunchLab* 37 *MiniLab* 10 *More Alike Than Not?* 104 *National Geographic* 54, 112 (D) 9-10, 14-15, 20-21, 49-53, 65-67, 74, 80, 92-93, 101 *MiniLab* 103 *Science Online* 75 (E) 65 **Teacher Wraparound Edition:** (A) A 158; FF 160; TFYI 19 (B) A 24; CB 24; D 24; FF 34, 46; IES 12; TBI 60; TFYI 19, 34, 106, 110 (C) A 10, 39, 98, 112; CC 174; CD 145; D 84, 118, 120, 142; DI 53, 60, 112, 144; FF 121, 147; IL 86, 141; IM 11, 121, 144; R 98; SJ 49, 109; TBI 104; TFYI 79, 90, 120; UA 142; VL 59 (D) TFYI 102; TPK 80, 92, 101 (E) TFYI 65

STANDARDS	PAGE REFERENCES
LS1 (5-8) POC -3 *Compare and contrast sexual reproduction with asexual reproduction.*	
LS1 (5-6) –3 **Students demonstrate an understanding of reproduction by …**	
3a defining reproduction as a process through which organisms produce offspring.	**Student Edition:** (A) 96E-96F, 106-108 (B) 10, 92E-92F (C) 16, 19, 23, 45, 79, 86, 91, 93, 106, 114, 117 (D) 151-155 **Teacher Wraparound Edition:** (C) DI 26
3b describing reproduction in terms of being essential for the continuation of a species.	**Student Edition:** (A) 19, 54-55, 96E-96F (B) 92E-92F (D) 151-155 **Teacher Wraparound Edition:** (D) R 122
3c investigating and comparing a variety of plant and animal life cycles.	**Student Edition:** (A) *LaunchLab* 97 (B) 39, 81, 96-97, 99, 101, 105 *Lab* 14, 102 (C) 16, 19, 23, 45, 50, 86-87, 92-93, 117 *Applying Science* 117 *MiniLab* 50 *Science Stats* 126 (E) *Lab* 26-27 **Teacher Wraparound Edition:** (B) D 100; IL 81, 108 (C) A 87, 127; D 119, 126; DI 26, 119; ML 50; VL 50

STANDARDS	PAGE REFERENCES
LS1 (5-8) FAF –4 *Explain relationships between or among the structure and function of the cells, tissues, organs, and organ systems in an organism.*	
LS1 (5-6) –4 **Students demonstrate understanding of differentiation by…**	
4a identifying cells as the building blocks of organisms.	**Student Edition:** (A) 16, 40-41, 47, 66E, 98 **Teacher Wraparound Edition:** (A) TBI 38; TPK 40
4b recognizing and illustrating (e.g. flow chart) the structural organization of an organism from a cell to tissue to organs to organ systems to organisms.	**Student Edition:** (A) 47 **Teacher Wraparound Edition:** (A) TPI 38 (C) TPK 14
LS2 - Matter cycles and energy flows through an ecosystem.	
LS2 (5-8) INQ+SAE -5 *Using data and observations, predict outcomes when abiotic/biotic factors are changed in an ecosystem.*	
LS2 (5-6) –5 **Students demonstrate an understanding of equilibrium in an ecosystem by …**	
5a identifying and defining an ecosystem and the variety of relationships within it (e.g., predator/prey, consumer/producer/decomposer, host/parasite, catastrophic events).	**Student Edition:** (B) 16, 48, 51 *Fungi: Terrestrial Icebergs* 30 *National Geographic* 17 (E) 6E, 9-11, 22-24 *Are These Birds In Danger?* 6 *Identify Misconceptions* 6F **Teacher Wraparound Edition:** (C) A 144 (E) A 22; ATP 6; CD 9; D 11; FF 9; TBI 6; TFYI 9

STANDARDS	PAGE REFERENCES
LS2 (5-8) SAE– 6 *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 (5-6) –6 **Students demonstrate an understanding of energy flow in an ecosystem by …**	
6a identifying the sun as the major source of energy for life on earth and sequencing the energy flow in an ecosystem.	**Student Edition:** (A) 66E-66F, 85, 87 (B) 122E, 124, 126-129 *Identify Misconceptions* 122F *MiniLab* 127 *Science Online* 11 (E) 50-52 **Teacher Wraparound Edition:** (A) IM 84, 85 (E) D 51; DI 51; TFYI 52; VL 52
6b describing the basic processes and recognizing the substances involved in photosynthesis and respiration.	**Student Edition:** (A) 66E-66F, 85, 87 *LaunchLab* 67 (B) 122E, 125, 127-129 *Identify Misconceptions* 122F **Teacher Wraparound Edition:** (B) ATP 122; TBI 122
LS2 (5-8) SAE-7 *Given an ecosystem, trace how matter cycles among and between organisms and the physical environment (includes water, oxygen, food web, decomposition, recycling but not carbon cycle or nitrogen cycle).*	
LS2 (5-6)-7 **Students demonstrate an understanding of recycling in an ecosystem by …**	
7a explaining the processes of precipitation, evaporation, condensation as parts of the water cycle.	**Student Edition:** (E) 44-45 **Teacher Wraparound Edition:** (E) IM 45; TFYI 45; TPK 44
7b completing a basic food web for a given ecosystem.	**Student Edition:** (B) *Integrate Earth Science* 12 *Science Online* 11 **Teacher Wraparound Edition:** (B) IES 12

STANDARDS	PAGE REFERENCES
LS3 - Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).	
LS3 (5-8) MAS+FAF – 8 *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 (5-6) – 8 **Students demonstrate an understanding of classification of organisms by …**	
8a stating the value of, or reasons for, classification systems.	**Student Edition:** (A) 25 *Plant or Animal?* 6 (B) 11, 33, 67 **Teacher Wraparound Edition:** (A) A 12; FF 12; IM 12; TFYI 9
8b following a taxonomic key to identify a given organism (e.g. flowering and non-flowering plants).	**Student Edition:** (A) 26-28 *Lab* 29 (B) *National Geographic* 66 **Teacher Wraparound Edition:** (A) A 28, MM 27 (B) A 66

STANDARDS	PAGE REFERENCES
LS3 (5-8) POC-9 *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 (5-6) -9 **Students demonstrate an understanding of Natural Selection/evolution by …**	
9a explaining how a population's or species' traits affect their ability to survive over time.	**Student Edition:** (A) 154E, 154F *Adaptation? No Problem* 154 *LaunchLab* 155 (B) 6E, 60E- 60F *A Forest From Ashes* 92 *Science Journal* 92 *Science Stats* 24 (C) 9, 10-11, 51, 86, 91, 106-107 *Applying Science* 117, 147 *Lab: Design Your Own* 28 *MiniLab* 10 *National Geographic* 26, 54, 112, 145 (E) 12-15, 16-19 *Applying Science* 15 *Science Online* 16 **Teacher Wraparound Edition:** (A) TBI 154 (B) ATP 92; CB 24; D 24; FOAI 24; VL 24 (E) A 15, 18; D 14; FF 16; IL 14; TFYI 16
9b researching or reporting on possible causes for the extinction of an animal or plant.	**Student Edition:** (C) *Science Online* 91 **Teacher Wraparound Edition:** (A) CB 32; II 32; RR 32 (C) CC 118; D 84; DI 91; TFYI 60, 112
9c explaining how fossil evidence can be used to understand the history of life on Earth.	**Student Edition:** (A) 154E, 165, 167, 169 *National Geographic* 168 *Science Online* 167 (B) 30E, 33, 63 **Teacher Wraparound Edition:** (A) A 168; TFYI 166; TPK 165

STANDARDS	PAGE REFERENCES
LS 4 - Humans are similar to other species in many ways, and yet are unique among Earth's life forms.	
LS4 (5-8) INQ-10 *Use data and observations to support the concept that environmental or biological factors affect human body systems (biotic & abiotic).*	
LS4 (5-6)-10 **Students demonstrate an understanding of human body systems by …**	
10a identifying the biotic factors (e.g., microbes, parasites, food availability, aging process) that have an effect on human body systems.	**Student Edition:** (A) 54-55, 56 *Science Online* 55 (B) 15, 19, 39-40, 124 *Applying Science* 20 *Integrate Health* 39 *Lab: Use the Internet* 84 *Microcosmos of Yogurt* 6 *Science Journal* 6 *Science Online* 70 (D) 98-100, 105-106, 181-182, 185-186 *Lab* 189 **Teacher Wraparound Edition:** (A) DI 56; VL 55 (B) IH 39; IL 20; SJ 20; TBI 6; TFYI 70 (D) A 193; IM 99, 126; LC 186; LD 98
10b identifying the abiotic factors (e.g., drugs, altitude, weather, pollution) that have an effect on human body systems.	**Student Edition:** (D) 98-100, 126, 190-195 *National Geographic* 70 (E) 36-40, 102-105, 106-108, 110 **Teacher Wraparound Edition:** (D) A 193; CC 194; IL 98; IM 193, 194; LD 98; TFYI 19, 70, 99, 194

STANDARDS	PAGE REFERENCES
Students demonstrate an understanding patterns of human health/disease by …	
10c identifying the biotic (e.g., microbes, parasites, food availability, aging process) and abiotic (e.g., radiation, toxic materials, carcinogens) factors that cause disease and affect human health.	**Student Edition:** (A) 54-55, 56 *Science Online* 55 (B) 19, 39-40 (D) 70, 98-100, 105-106, 181-182, 185-187 *Lab* 189 *LaunchLab* 175 *Science Stats* 198 **Teacher Wraparound Edition:** (A) DI 56; V 55 (B) D 19; DI 19; TFYI 19 (D) AS 175; IM 186; SS 198; TFYI 9, 70, 185, 187
LS4 (5-8) INQ+POC-11 *Using data provided, select evidence that supports the concept that genetic information is passed on from both parents to offspring.*	
LS4 (5-6)-11 **Students demonstrate an understanding of human heredity by …**	
11a differentiating between inherited and acquired traits.	**Student Edition:** (A) 96E-96F, 128-129, 132-134, 136-138 *Lab* 135 *National Geographic* 131 **Teacher Wraparound Edition:** (A) DI 133; IM 130; TPK 136
11b observing, recording and comparing differences in inherited traits (e.g. connected earlobe, tongue rolling).	**Student Edition:** (A) 128, 132-134, 136-138 *Applying Math* 133 *Lab* 135 *Lab: Design Your Own* 146 *LaunchLab* 127 *MiniLab* 130, 138 **Teacher Wraparound Edition:** (A) AIL 146; DI 132; IM 130

STANDARDS	PAGE REFERENCES
LS4 (5-8) POC-12 *Describe the major changes that occur over time in human development from single cell through embryonic development to new born (i.e., trimesters: 1st – group of cells, 2nd - organs form, 3rd - organs mature.*	
Life Science Grades 7-8	
LS1 - All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).	
LS1 (5-8) – INQ+ SAE- 1 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 (7-8) – 1 **Students demonstrate understanding of biodiversity by…**	
1a giving examples of adaptations or behaviors that are specific to a niche (role) within an ecosystem.	**Student Edition:** (A) 32 (B) 9-10, 11-13, 68-69, 70-73, 78-79 *A Forest From Ashes* 92 *Are All Plants Alike?* 60 *National Geographic* 17 (E) 23-24 *Lab* 25 **Teacher Wraparound Edition:** (B) IES 12 (C) D 74; DI 74; SJ 49, 117; TFYI 115, 117; UA 117 (E) A 22; D 23; MM 22; QD 24; SJ 23; VL 23
2b explaining how organisms with different structures and behaviors have roles that contribute to each other's survival and the stability of the ecosystem.	**Student Edition:** (B) 16, 48 *National Geographic* 17 (C) 18, 51 *Science Online* 87 **Teacher Wraparound Edition:** (B) SJ 18 (C) DI 19; IL 49; IM 18; MM 55 (E) ATP 6; TBI 6

STANDARDS	PAGE REFERENCES
LS1 (5-8) SAE+FAF –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 (7-8) – 2 **Students demonstrate understanding of structure and function-survival requirements by…**	
2a explaining how the cell, as the basic unit of life, has the same survival needs as an organism (i.e., obtain energy, grow, eliminate waste, reproduce, provide for defense).	**Student Edition:** (A) 40, 41, 46, 76, 98 (C) 8, 15, 18 **Teacher Wraparound Edition:** (A) CD 44; D 41; TBI 38; TPK 40
2b observing and describing (e.g., drawing, labeling) individual cells as seen through a microscope targeting cell membrane, cell wall, nucleus, and chloroplasts.	**Student Edition:** (A) 40-42, 43, 44-45, 49 *Lab* 48 *LaunchLab* 39 (B) 128 *Lab* 14, 43 **Teacher Wraparound Edition:** (A) A 45; DI 43, 44; IM 144; MM 45; TFYI 44, 50, 77; TPK 76, 98; VL 43
2c observing, describing and charting the growth, motion, responses of living organisms	**Student Edition:** (A) *LaunchLab* 97 (B) *Lab* 14, 43, 102, 140-141 *MiniLab* 40, 75 (C) *Lab: Design Your Own* 28-29, 96-97 *Lab: Use the Internet* 124-125 *LaunchLab* 37 *MiniLab* 24, 50, 88 *Observing Cnidarians* 21 *Observing Crayfish* 57 *Observing Earthworms* 149 *What Do Earthworms Eat?* 62-63 (E) *Lab* 25 *Lab: Design Your Own* 26-27 **Teacher Wraparound Edition:** (B) A 112; D 112; IL 20, 41; MM 46 (C) A 21, 24, 50, 55, 57, 149; AIL 62, 96, 124

STANDARDS	PAGE REFERENCES
LS1 (5-8) POC -3 *Compare and contrast sexual reproduction with asexual reproduction.*	
LS1 (7-8) –3 **Students demonstrate an understanding of reproduction by …**	
3a explaining reproduction as a fundamental process by which the new individual receives genetic information from parent(s).	**Student Edition:** (A) 54-55, 96E-96F, 106-109 (B) 45-46, 92E-92F, 94-96, 98-100, 103-104, 106-109 (D) 151 **Teacher Wraparound Edition:** (A) D 108; FF 107 (D) 151
3b describing forms of asexual reproduction that involve the genetic contribution of only one parent (e.g., binary fission, budding, vegetative propagation, regeneration).	**Student Edition:** (A) 54-55, 96E-96F, 103-104 (B) 10, 32, 45-46, 47, 94-96 *MiniLab* 95 (C) 16, 19, 23, 59 (D) 151, 157 **Teacher Wraparound Edition:** (A) SJ 103; TFYI 55; VL 55 (B) A 96; D 96, 97; IM 104, 105; TFYI 95, 109; VL 99
3c describing sexual reproduction as a process that combines genetic material of two parents to produce a new organism (e.g., sperm/egg, pollen/ova)	**Student Edition:** (A) 54-55, 96E-96F, 106-109 (B) 10, 32, 45-46, 94-96, 103-104, 106-108 (C) 16, 19, 23, 45, 50, 59, 79, 86, 91, 93, 114, 117 (D) 151, 157 **Teacher Wraparound Edition:** (A) D 108; FF 101, 107 (B) IM 104; MM 10 (C) ML 50 (D) TPK 151

STANDARDS	PAGE REFERENCES
LS1 (5-8) FAF –4 *Explain relationships between or among the structure and function of the cells, tissues, organs, and organ systems in an organism.*	
LS1 (7-8) –4 **Students demonstrate understanding of differentiation by…**	
4a explaining that specialized cells perform specialized functions. (e.g., muscle cells contract, nerve cells transmit impulses, skin cells provide protection).	**Student Edition:** (A) 40-41, 47 (C) 15, 18, 43-44 (D) 8-11, 17, 20-22, 50-53, 80-81, 94-95, 103, 119-121, 128-129, 146, 151-153, 154-155, 176-178 **Teacher Wraparound Edition** (C) IM 18 (D) A 120; DI 120; FF 119; IL 121; IM 10; T 21
4b comparing individual cells of tissues and recognizing the similarities of cells and how they work together to perform specific functions.	**Student Edition:** (A) 40-41, 47, 53 (B) 74-77 (D) 17, 20-22, 50-53, 119-121, 176-178 **Teacher Wraparound Edition:** (D) A 120; DI 120; FF 119
4c explaining how each type of cell, tissue, and organ has a distinct structure and set of functions that serve the organism as a whole.	**Student Edition:** (A) 40-41, 47, 53 (B) 74-77 (D) 8-11, 17, 20-22, 50-53, 119-121, 176-178

STANDARDS	PAGE REFERENCES
LS2 - Matter cycles and energy flows through an ecosystem.	
LS2 (5-8) INQ+SAE -5 *Using data and observations, predict outcomes when abiotic/biotic factors are changed in an ecosystem.*	
LS2 (7-8) –5 **Students demonstrate an understanding of equilibrium in an ecosystem by …**	
5a identifying which biotic (e.g., bacteria, fungi, plants, animals) and abiotic (e.g., weather, climate, light, water, temperature, soil composition, catastrophic events) factors affect a given ecosystem.	**Student Edition:** (A) 84 (B) 12, 16, 36, 42, 48 *Fungi: Terrestrial Icebergs* 30 *National Geographic* 17 *Science Online* 36 (E) 14-16, 34E, 36-39, 40-42 **Teacher Wraparound Edition:** (A) IM 84
5b analyzing how biotic and abiotic factors affect a given ecosystem.	**Student Edition:** (A) 84 (B) 12, 16, 36, 42, 48 *Fungi: Terrestrial Icebergs* 30 *Lab: Design Your Own* 22 *National Geographic* 17 *Science Online* 36 (C) 55 (E) 34E-34F, 36-39, 40-42 **Teacher Wraparound Edition:** (A) IM 84 (B) AIL 22; TFYI 36 (E) DI 37
5c predicting the outcome of a given change in biotic and abiotic factors in an ecosystem.	**Student Edition:** (B) *Science Online* 36 (C) 55, 88-89 *Science Online* 87 (E) 64-67 *National Geographic* 66 **Teacher Wraparound Edition:** (B) IL 20 (C) DI 91; MM 55 (E) A 37; D 65; DI 66; TFYI 65; TPK 64; VL 66

STANDARDS	PAGE REFERENCES
5d using a visual model (e.g., graph) to track population changes in an ecosystem.	**Student Edition:** (E) 16-19 *National Geographic* 18 **Teacher Wraparound Edition:** (A) II 32 (E) A 18
LS2 (5-8) SAE– 6 *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 (7-8) –6 **Students demonstrate an understanding of energy flow in an ecosystem by …**	
6a explaining the transfer of the sun's energy through living systems and its effect upon them.	**Student Edition:** (A) 66E, 84-87 *Identifying Misconceptions* 66F *Lab* 88-89 (B) 122E, 127-128, 129 *Identifying Misconceptions* 122F *MiniLab* 127 (E) 50-53 **Teacher Wraparound Edition:** (A) AIL 88; DI 84; IM 84, 85; SJ 84; TPK 83 (B) TBI 122 (E) D 51; DI 51; TFYI 52
6b describing the basic processes and recognizing the names and chemical formulas of the substances involved in photosynthesis and respiration.	**Student Edition:** (A) 66E *Identifying Misconceptions* 66F (B) 122E, 127-128, 129 *Identifying Misconceptions* 122F (C) 44, 78, 81, 85 *Lab: Design Your Own* 96-97 (E) *Integrate Chemistry* 21 **Teacher Wraparound Edition:** (A) IM 85 (B) ATP 122; TBI 122 (E) IC 21

STANDARDS	PAGE REFERENCES
6c explaining the relationship between photosynthesis and respiration.	**Student Edition:** (A) 66E *Identifying Misconceptions* 66F *Lab* 88-89 (B) 129-131 *How Did It Get So Big?* 122 *Identifying Misconceptions* 122F **Teacher Wraparound Edition:** (A) AIL 88; IM 85 (B) ATP 122; TBI 122
LS2 (7-8) –6 **Students demonstrate an understanding of food webs in an ecosystem by …**	
6d creating or interpreting a model that traces the flow of energy in a food web.	**Student Edition:** (B) *Integrate Earth Science* 12 *Science Online* 11 (E) 20-21, 50-52 **Teacher Wraparound Edition:** (B) IES 12 (E) A 51; D 51; MM 22; SJ 23; TBI 34; VL 23, 52
LS2 (5-8) SAE-7 *Given an ecosystem, trace how matter cycles among and between organisms and the physical environment (includes water, oxygen, food web, decomposition, recycling but not carbon cycle or nitrogen cycle).*	
LS2 (7-8)-7 **Students demonstrate an understanding of recycling in an ecosystem by …**	
7a diagramming or sequencing a series of steps showing how matter cycles among and between organisms and the physical environment.	**Student Edition:** (B) 16, 51 (E) 44-47, 49 *National Geographic* 48 **Teacher Wraparound Edition:** (E) A 48; DI 46; IM 45; SJ 45; TFYI 45; TPK 44
7b developing a model for a food web of local aquatic and local terrestrial environments.	**Student Edition:** (E) 51-53 **Teacher Wraparound Edition:** (B) A 71 (E) SJ 45; VL 52

STANDARDS	PAGE REFERENCES
7c explaining the inverse nature or complementary aspects of photosynthesis/respiration in relation to carbon dioxide, water and oxygen exchange.	**Student Edition:** (B) *How Did It Get So Big?* 122 *Identifying Misconceptions* 122F (E) 44-45 *Science Online* 49 **Teacher Wraparound Edition:** (B) ATP 122; TBI 122 (E) IM 45
7d conducting a controlled investigation that shows that the total amount of matter remains constant, even though its form and location change as matter is transferred among and between organisms and the physical environment (e.g., bottle biology, mass of a closed system over time).	**Student Edition:** (E) *Identifying Misconceptions* 62F **Teacher Wraparound Edition:** (E) TBI 62; TFYI 45
LS3 - Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).	
LS3 (5-8) MAS+FAF – 8 *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 (7-8) – 8 **Students demonstrate an understanding of classification of organisms by …**	
8a sorting organisms with similar characteristics into groups based on internal and external structures.	**Student Edition:** (B) 11, 33, 60E-60F, 62, 68-69, 71-73, 78-79 *Applying Science* 41 *National Geographic* 66 (C) 15, 17, 38-39, 43, 48, 52-53, 58-59, 70E-70F, 74, 80-83, 90-91 *National Geographic* 54 **Teacher Wraparound Edition:** (B) A 66; DI 66; VL 11 (C) D 44; IL 49
8b explaining how species with similar evolutionary histories/characteristics are classified more closely together with some organisms than others (e.g., a fish and human have more common with each other than a fish and jelly fish)	**Student Edition:** (A) 169-171 (D) *Lab: Use the Internet* 26-27 **Teacher Wraparound Edition:** (A) D 170; TFYI 169, 170; VL 170 (D) AIL 26

STANDARDS	PAGE REFERENCES
8c recognizing the classification system used in modern biology.	**Student Edition:** (A) 26-28 *Lab* 29 (B) 11 *Applying Science* 41 *National Geographic* 66 **Teacher Wraparound Edition:** (A) A 28; CB 80; TFYI 9, 26
LS3 (5-8) POC-9 *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 (7-8) -9 **Students demonstrate an understanding of Natural Selection/evolution by …**	
9a explaining that genetic variations/traits of organisms are passed on through reproduction and random genetic changes.	**Student Edition:** (A) 96E-96F, 116-117, 126E, 134, 158-159, 160-161 *Applying Science* 159 *Identifying Misconceptions* 126 F *Lab* 135 *Lab: Use the Internet* 118-119 *LaunchLab* 127 *Why Do People Look Different?* 126 **Teacher Wraparound Edition:** (A) A 140, 158; AIL 118; D 158; DI 40, 141, 158; FF 160; IM 116; SJ 116; TBI 96, 126; TFYI 116, 139; TPK 128
9b gathering evidence that demonstrates evolutionary relationships among organisms (e.g., similarities in body structure, early development, traits).	**Student Edition:** (A) 169-171 (D) *Lab: Use the Internet* 26 **Teacher Wraparound Edition:** (A) CD 170; D 170; TFYI 169, 170 (D) AIL 26
9c differentiating between acquired and inherited characteristics and giving examples of each.	**Student Edition:** (A) 114, 128, 134, 136-138, 139, 140-142 **Teacher Wraparound Edition:** (A) DI 141; TPK 128

STANDARDS	PAGE REFERENCES
9d explaining how natural selection leads to evolution (e.g., survival of the fittest).	**Student Edition:** (A) 154E, 158-159, 160-161 *Applying Science* 159 *Identifying Misconceptions* 154 F **Teacher Wraparound Edition:** (A) TBI 154; VL 159
9e describing how scientists' understanding of the way species originate or become extinct has changed over time.	**Student Edition:** (A) 154E, 156-157, 158-159, 162-163 **Teacher Wraparound Edition:** (A) IL 162; IM 163
LS 4 - Humans are similar to other species in many ways, and yet are unique among Earth's life forms.	
LS4 (5-8) INQ-10 *Use data and observations to support the concept that environmental or biological factors affect human body systems (biotic & abiotic).*	
LS4 (7-8)-10 **Students demonstrate an understanding of human body systems by …**	
10a predicting and explaining the effects of biotic factors (e.g., microbes, parasites, food availability, aging process) on human body systems.	(B) 15, 19, 39-40, 51 *Integrate Health* 36 *Lab: Use the Internet* 84-85 *Science Journal* 6 *Yogurt Microcosmos* 6 (C) *National Geographic* 26 *Integrate Social Studies* 51 (D) 181-182, 186-188 *Applying Science* 185 *Lab* 189 *Lab: Design Your Own* 196 **Teacher Wraparound Edition:** (C) D 25; VL 26 (D) IM 186; SJ 184; TFYI 185, 186
10b predicting and explaining the effect of abiotic factors (e.g., drugs, environmental conditions) on human body systems.	(D) 190-191, 192-195 *Applying Science* 185 *Lab: Design Your Own* 196 **Teacher Wraparound Edition:** (D) DI 191; FF 191; IM 193; TFYI 9, 185, 191, 192, 194

STANDARDS	PAGE REFERENCES
Students demonstrate an understanding patterns of human health/disease by …	
10c researching and reporting on how biotic (e.g., microbes, parasites, food availability, aging process) and abiotic (e.g., radiation, toxic materials, carcinogens) factors cause disease and affect human health.	(B) 19 *Integrate Health* 39 *Lab: Use the Internet* 84-85 *Science Online* 19 (C) 24 *National Geographic* 26 (D) *Integrate Environment* 193 *Lab* 189 *Science Online* 187 **Teacher Wraparound Edition:** (B) A 50; DI 19; IH 39; T 19 (C) A 26; DI 24; SJ 24; VL 26 (D) A 193; CC 185, 194; DI 177, 183, 191, 193; IM 195; TFYI 187
LS4 (5-8) INQ+POC-11 *Using data provided, select evidence that supports the concept that genetic information is passed on from both parents to offspring.*	
LS4 (7-8)-11 **Students demonstrate an understanding of human heredity by …**	
11a recognizing that characteristics of an organism result from inherited traits of one or more genes from the parents and others result from interactions with the environment.	**Student Edition:** (A) 114-115, 136-139, 140-141 *MiniLab* 138 **Teacher Wraparound Edition:** (A) A 140; D 140; DI 141; QD 141
11b tracing a genetic characteristic through a given pedigree (e.g., genealogical chart, Queen Victoria – hemophilia or hypothetical example) to demonstrate the passage of traits.	**Student Edition:** (A) 141-142 *Science Online* 137 **Teacher Wraparound Edition:** (A) A 140; D 140; DI 141; QD 141
11c identifying that genetic material (i.e. chromosomes and genes) is located in the cell's nucleus.	**Student Edition:** (A) 112, 114-115 (B) 9, 32

STANDARDS	PAGE REFERENCES
LS4 (5-8) POC-12 *Describe the major changes that occur over time in human development from single cell through embryonic development to new born (i.e., trimesters: 1st – group of cells, 2nd - organs form, 3rd - organs mature.*	
LS4 (7-8)-11 **Students demonstrate an understanding of patterns of human development by …**	
12a identifying and sequencing the stages of human embryonic development.	**Student Edition:** (D) 157-160 *MiniLab* 160 **Teacher Wraparound Edition:** (D) A 160; IL 159; IM 159; ML 160; MM 158
12b describing the changes from one stage of embryonic development to the next.	**Student Edition:** (D) 157-160 **Teacher Wraparound Edition:** (D) IL 159; IM 159, 169; MM 158
12c comparing and contrasting embryonic development in various life forms (e.g., humans, frogs, chickens, sea urchins).	**Student Edition:** (A) 169 (C) 72-73
12d comparing the patterns of human development after birth to life stages of other species.	(D) 162-165 *Science Stats* 168 **Teacher Wraparound Edition:** (D) A 168; CB 168; CD 164; D 168; FOAI 168; MM 163; QD 163; TFYI 162; VL 168