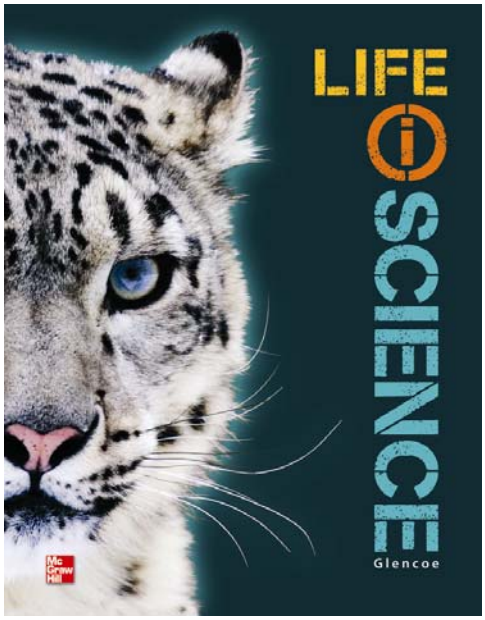
Glencoe

Science Standards
Life Science
Grades 6-8

Nebraska



CONTENT STATEMENTS	PAGE REFERENCES
SC K-12.1 Comprehensive Science Standard – Inquiry, the Nature of Science, and Technology Students will combine scientific processes and knowledge with scientific reasoning and critical thinking to ask questions about phenomena and propose explanations based on gathered evidence.	
1. Inquiry, the Nature of Science, and Technology	
1. Abilities to do Scientific Inquiry	
SC8.1.1 Students will design and conduct investigations that will lead to descriptions of relationships between evidence and explanations.	
Scientific Questioning SC8.1.1.a Formulate testable questions that lead to predictions and scientific investigations	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 254-255, 472-473, 626-627, 730-731 *Nature of Science* NOS 6 *Science Skill Handbook* SR5 **Teacher Edition:** DIF NOS 7, NOS 25

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

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Scientific Investigations SC8.1.1.b Design and conduct logical and sequential investigations including repeated trials	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 254-255, 472-473, 626-627, 730-731 *Nature of Science* NOS 6-NOS 7, NOS 20 *Science Skill Handbook* SR5-SR10 **Teacher Edition:** DIF NOS 7, NOS 25
Scientific Controls and Variables SC8.1.1.c Determine controls and use dependent (responding) and independent (manipulated) variables	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 254-255, 472-473, 626-627, 730-731 *Nature of Science* NOS 20 *Science Skill Handbook* SR6 *Skill Practice* 349, 455, 721 **Teacher Edition:** DIF NOS 23, NOS 25
Scientific Tools SC8.1.1.d Select and use equipment appropriate to the investigation, demonstrate correct techniques, and apply appropriate mathematical concepts	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 254-255, 472-473, 626-627, 730-731 *Nature of Science* NOS 11, NOS 16-NOS 18 *Science Skill Handbook* SR6-SR9, SR11-SR13 *Skill Practice* NOS 19, 245 **Teacher Edition:** DIF NOS 17; TD NOS 17
Scientific Observations SC8.1.1.e Make qualitative and quantitative observations	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 254-255, 472-473, 626-627, 730-731 *Launch Lab* 9, 129, 307 *MiniLab* 54, 458, 653, 778 *Nature of Science* NOS 6-NOS 7, NOS 12-NOS 15 *Science Skill Handbook* SR6-SR9 *Skill Practice* 59, 67, 311, 645 **Teacher Edition:** TD NOS 7

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Scientific Data Collection SC8.1.1.f Record and represent data appropriately and review for quality, accuracy, and relevancy	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 254-255, 472-473, 626-627, 730-731 *Nature of Science* NOS 7, NOS 12-NOS 15 *Science Skill Handbook* SR6-SR9, SR10 *Skill Practice* 245, 349, 455, 721 **Teacher Edition:** DIF NOS 15
Scientific Interpretations, Reflections, and Applications SC8.1.1.g Evaluate predictions, draw logical inferences based on observed patterns/relationships, and account for non-relevant information	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 254-255, 472-473, 626-627, 730-731 *Nature of Science* NOS 7, NOS 10-NOS 11 *Science Skill Handbook* SR10 *Skill Practice* 245, 349, 455, 721 **Teacher Edition:** TD NOS 7, NOS 11
Scientific Communication SC8.1.1.h Share information, procedures, results, and conclusions with appropriate audiences	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 254-255, 472-473, 626-627, 730-731 *Nature of Science* NOS 7, NOS 16 *Science Skill Handbook* SR10 **Teacher Edition:** SYF 75, 255, 473, 627, 731
SC8.1.1.i Analyze and provide appropriate critique of scientific investigations	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 254-255, 472-473, 626-627, 730-731 *Nature of Science* NOS 10-NOS 11 *Science Skill Handbook* SR10 *Skill Practice* 245 **Teacher Edition:** TD NOS 11

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Mathematics SC8.1.1.j Use appropriate mathematics in all aspects of scientific inquiry	**Student Edition:** *Inquiry Lab* NOS 28-NOS 29, 74-75, 178-179, 472-473, 730-731 *Math Skill Handbook* SR14-SR28 *Math Skills* 28, 31, 425, 426, 787, 807 *Nature of Science* NOS 15 *Skill Practice* 67, 168, 757 **Teacher Edition:** DIF NOS 15; MA NOS 15
2. Nature of Science	
SC8.1.2 Students will apply the nature of science to their own investigations.	
Scientific Knowledge SC8.1.2.a Recognize science is an ongoing process and the scientific community accepts and uses explanations until they encounter new experimental evidence not matching existing explanations	**Student Edition:** 43-44, 149-155, 201-202, 214 *Nature of Science* NOS 6-NOS 7, NOS 9, NOS 20-NOS 27 *Science & Society* 157 *Time Line* 2 **Teacher Edition:** EX 149, 157, 214; SCB 40E; TL 2
Science and Society SC8.1.2.b Describe how scientific discoveries influence and change society	**Student Edition:** 226-227 *How Nature Works* 495 *Nature of Science* NOS 8 *Science & Society* 95, 619, 681 **Teacher Edition:** DIF 227; EX 95, 495, 619, 681
Science as a Human Endeavor SC8.1.2.c Recognize scientists from various cultures have made many contributions to explain the natural world	**Student Edition:** 19-21, 27, 43-44, 201-202 *Careers in Science* 17, 127, 207, 381, 747 *Science & Society* 157 *Time Line* 2-3, 224-225, 368-369 **Teacher Edition:** DIF 29, 45

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3. Technology	
SC8.1.3 Students will solve a design problem which involves one or two science concepts.	
Abilities to do Technical Design SC8.1.3.a Identify problems for technical design	The following references can be incorporated in classroom discussion to meet this objective. **Student Edition:** *Inquiry Lab* NOS 28-NOS 29 *MiniLab* 5, 227 *Skill Practice* NOS 19 **Teacher Edition:** DIF NOS 23
SC8.1.3.b Design a solution or product	The following references can be incorporated in classroom discussion to meet this objective. **Student Edition:** *Inquiry Lab* NOS 28-NOS 29 *MiniLab* 5, 227 *Skill Practice* NOS 19 **Teacher Edition:** DIF NOS 23
SC8.1.3.c Implement the proposed design	The following references can be incorporated in classroom discussion to meet this objective. **Student Edition:** *Inquiry Lab* NOS 28-NOS 29 *MiniLab* 5, 227 *Skill Practice* NOS 19 **Teacher Edition:** DIF NOS 23
SC8.1.3.d Evaluate completed technological designs or products	The following references can be incorporated in classroom discussion to meet this objective. **Student Edition:** *Inquiry Lab* NOS 28-NOS 29 *MiniLab* 5, 227 *Skill Practice* NOS 19 **Teacher Edition:** DIF NOS 23

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SC8.1.3.e Communicate the process of technical design	The following references can be incorporated in classroom discussion to meet this objective. **Student Edition:** *Inquiry Lab* NOS 28-NOS 29 *MiniLab* 5, 227 *Skill Practice* NOS 19 **Teacher Edition:** DIF NOS 23
Understanding of Technical Design SC8.1.3.f Distinguish between scientific inquiry (asking questions about the natural world) and technological design (using science to solve practical problems)	**Student Edition:** 226-227 *How Nature Works* 495, 655 *MiniLab* 227 *Nature of Science* NOS 4, NOS 6-NOS 8 *Skill Practice* NOS 19 **Teacher Edition:** DIF 227
SC8.1.3.g Describe how science and technology are reciprocal	**Student Edition:** 27-30, 226-227, 832-834 *How Nature Works* 49 *MiniLab* 30, 227 *Nature of Science* NOS 8, NOS 17, NOS 20-NOS 27 *Science & Society* 157 **Teacher Edition:** NOS 8, NOS 17; 226-227; DIF NOS 9, 227; EX 27-30, 832-834; TL 2
SC8.1.3.h Recognize that solutions have intended and unintended consequences	**Student Edition:** 824-827, 832-836 *Green Science* 821 *How Nature Works* 495 *Science & Society* 619, 681 **Teacher Edition:** DIF 833; EX 681, 824-827, 832-836

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SC8.1.3.i Compare and contrast the reporting of scientific knowledge and the reporting of technological knowledge	The following references can be incorporated in classroom discussion to meet this objective. **Student Edition:** *Nature of Science* NOS 7, NOS 10 *Science Skill Handbook* SR2-SR3, SR10 **Teacher Edition:** NOS 7
SC K-12.3 Comprehensive Science Standard – Life Science Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Life Sciences to make connections with the natural and engineered world.	
3. Life Science	
1. Structure and Function of Living Systems	
SC8.3.1 Students will investigate and describe the structure and function of living organisms.	
Characteristics of Life SC8.3.1.a Recognize the levels of organization in living organisms (cells, tissues, organs, organ systems, organisms)	**Student Edition:** 10, 97-104 *Launch Lab* 97 *MiniLab* 102 **Teacher Edition:** DIF 103; EX 10, 97-104; SCB 6E, 82F
Cellular Composition of Organisms SC8.3.1.b Recognize that all organisms are composed of one or many cells; that these cells must grow, divide, and use energy; and that all cells function similarly	**Student Edition:** 10, 44, 53-57, 69-70, 85-92, 97-99 **Teacher Edition:** EX 10, 44, 69-70, 85-92, 97-99; SCB 6E, 40E, 82E-82F
SC8.3.1.c Recognize specialized cells perform specialized functions in multicellular organisms	**Student Edition:** 51, 97, 99-100, 300, 314-315, 578-579, 639 *Inquiry Lab* 106-107 *Launch Lab* 577 *Skill Practice* 503 **Teacher Edition:** DIF 315, 639; EX 99, 578; SCB 82F

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SC8.3.1.d Identify the organs and functions of the major systems of the human body and describe ways that these systems interact with each other	**Student Edition:** 483, 487-493, 497-501, 505-510, 531-537, 541-546, 558-563, 567-573, 585-588, 611-617, 637-643, 657-660 *Inquiry Lab* 548-549 *Launch Lab* 487, 505 *MiniLab* 483, 532, 545, 612 *Skill Practice* 565 **Teacher Edition:** DIF 483; EX 487-493, 497-501, 505-510, 531-537, 541-546, 567-573, 585-588, 611-617; SCB 484E-484F, 520E-520F, 556E-556F, 634E
Behavior SC8.3.1.e Describe how plants and animals respond to environmental stimuli	**Student Edition:** 12, 341-344, 447-453, 637-639, 647-653 *Inquiry Lab* 472-473 *Launch Lab* 341, 447, 637 *MiniLab* 12, 345, 483, 653 *Skill Practice* 349, 455, 644 **Teacher Edition:** DIF 343; EX 12, 341-344, 447-453, 647-653; SCB 444E-444F; TD 341
2. Heredity	
SC8.3.2 Students will investigate and describe the relationship between reproduction and heredity.	
Inherited Traits SC8.3.2.a Recognize that hereditary information is contained in genes within the chromosomes of each cell	**Student Edition:** 118, 155, 159-166, 170, 173 *Inquiry* 158, 169 *MiniLab* 161 *Skill Practice* 168 **Teacher Edition:** EX 118, 159-166; IN 158, 169; SCB 114E

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Reproduction SC8.3.2.b Compare and contrast sexual and asexual reproduction	**Student Edition:** 117-125, 129-136 *Launch Lab* 117, 129 *MiniLab* 133 **Teacher Edition:** EX 117-125, 129-136; IM 114H; SCB 114E-114F
3. Flow of Matter and Energy in Ecosystems	
SC8.3.3 Students will describe populations and ecosystems.	
Flow of Energy SC8.3.3.a Diagram and explain the flow of energy through a simple food web	**Student Edition:** 14, 727, 760 *MiniLab* 760 **Teacher Edition:** DIF 727; EX 761; SCB 738F; TA 727; TR 761
SC8.3.3.b Compare the roles of producers, consumers, and decomposers in an ecosystem	**Student Edition:** 723-726, 728, 760 *MiniLab* 725 **Teacher Edition:** DIF 725; EX 725, 760; IM 738H; RS 725; SCB 738F
Ecosystems SC8.3.3.c Recognize that producers transform sunlight into chemical energy through photosynthesis	**Student Edition:** 71-72, 298, 724, 760 **Teacher Edition:** DIF 725; EX 71-72, 724
SC8.3.3.d Determine the biotic and abiotic factors that impact the number of organisms an ecosystem can support	**Student Edition:** 743, 745, 750 *MiniLab* 742 **Teacher Edition:** DIF 743, 745; EX 743, 745
SC8.3.3.e Recognize a population is all the individuals of a species at a given place and time	**Student Edition:** 742 **Teacher Edition:** EX 742; IM 738H; SCB 738E

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SC8.3.3.f Identify symbiotic relationships among organisms	**Student Edition:** 763-764 *Inquiry Lab* 766-767 **Teacher Edition:** DIF 763; EX 763-764; SCB 738F
Impact on Ecosystems SC8.3.3.g Identify positive and negative effects of natural and human activity on an ecosystem	**Student Edition:** 751, 753, 778, 779, 780, 781, 782, 783, 800, 823-827, 832-836 *Careers in Science* 747 *Inquiry* 822 *Inquiry Lab* 838-839 *Science & Society* 795 *Skill Practice* 757, 828 **Teacher Edition:** DIF 825, 827; EX 747, 795, 800, 823-827, 832-836; IN 822; SCB 810F; TD 825
4. Biodiversity	
SC8.3.4 Students will identify characteristics of organisms that help them survive.	
Biological Adaptations SC8.3.4.a Describe how an inherited characteristic enables an organism to improve its survival rate	**Student Edition:** 201-204 *Inquiry Lab* 216-217 *MiniLab* 205 **Teacher Edition:** DIF 203, 205; EX 201-204; IM 186H; SCB 186F
Biological Evolution SC8.3.4.b Recognize the extinction of a species is caused by the inability to adapt to an environmental change	**Student Edition:** 195, 751 *Inquiry Lab* 216-217 **Teacher Edition:** EX 194; SCB 186E; TBI 186

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SC8.3.4.c Use anatomical features of an organism to infer similarities among other organisms	**Student Edition:** 23-24, 189, 195, 201, 209-210 *Inquiry* 188 *MiniLab* 195 **Teacher Edition:** DIF 23; EX 210-211; IN 188; SCB 186F; TD 23, 195