



NEVADA
Life Science Content Standards for Grade 8
Life's Structure and Function A
From Bacteria to Plants B
Animal Diversity C
Human Body Systems D
Ecology E © 2005

OBJECTIVES	PAGE REFERENCES
Content Standard 6.0: Structure and Function — <i>Students understand that all life forms, at all levels of organization, use specialized structures and similar processes to meet life's needs.</i>	
By the end of Grade 8 , students know and are able to do everything required in previous grades and:	
6.8.1 Explain how disease is a breakdown in structures or functions of an organism due to intrinsic system failures or damage caused by infection.	(D) 181-183, 186-187, 190-193 TFYI 187 TPK 190
6.8.2 Investigate and describe how multicellular living things have tissues, organs, and organ systems that are specialized to perform life functions.	(A) 47 <i>Lab 48</i> (B) 74-77 (D) 8, 14, 20, 47, 64, 80, 92, 101, 118, 146, 151, 176 <i>Lab 73, 107</i> <i>MiniLab 52, 103</i>
6.8.3 Investigate and describe how cells, grow, divide, and take in nutrients, which they use to provide energy for cellular functions.	(A) 42-45, 76-80, 83-87 <i>National Geographic 81</i> <i>Lab 88-89</i> AIL 88 DI 43 IM 84 UA 43 VL 87 (B) 127-131
6.8.4 Investigate and describe how most organisms are comprised of a single cell and others are multicellular.	(A) 40-47, 53 <i>Lab 48</i> (B) 10-13 <i>Lab 14</i> IM 10
6.8.5 Investigate and describe how plants have specialized structures and systems for a variety of functions.	(A) 41-45 <i>Lab 48</i> IM 44 UA 84 (B) 96, 99, 101, 105, 107, 109, 125 <i>Lab 102, 132</i>

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6.8.6 Explain how information used to guide cellular functions is stored in DNA .	(A) 114-115 <i>Theme Connection</i> 96 A 115 MM 115 VL 115
Content Standard 7.0: Internal and External Influences on Organisms — <i>Students understand that organisms respond to internal and external influences.</i>	
7.8.1 Explain how behavior may be innate or learned.	(C) 135-139 QD 136 TFYI 138 VL 137
7.8.2 Explain how an organism’s behavior is based on experience and on the species’ evolutionary history.	(A) 160 (B) 134-139 <i>Lab</i> 140-141 A 134 (C) 134-139, 140-148 <i>MiniLab</i> 138 A 144 TFYI 138, 143
7.8.3 Investigate and describe how behavior is one kind of response an organism can make to an internal or environmental stimulus.	(C) 138 <i>MiniLab</i> 138 TFYI 138
7.8.4 Explain how various viruses, bacteria, fungi, and parasites may infect the human body and interfere with normal body functions.	(A) 55-56 TFYI 57 (B) 19 D 19 TFYI 19
Content Standard 8.0: Heredity and Diversity — <i>Students understand that life forms are diverse, and that they pass some characteristics to their offspring.</i>	
8.8.1 Explain how heredity is the passage of genetic instructions from one generation to another.	(A) 128-134, 136-142 <i>Lab</i> 135 IL 129 LD 139 MM 141 QD 141
8.8.2 Classify organisms on the basis of similar characteristics, and explain the basis for such a classification system.	(A) 24-28 IL 25 TFYI 26 (B) <i>Lab</i> 14, 43, 83 (C) 12-13 <i>Lab</i> 21 <i>National Geographic</i> 54 AS 13 R 42
8.8.3 Explain how new varieties of cultivated plants and domestic animals have resulted from selective breeding for particular traits.	(A) 145 <i>Integrate Environment</i> 144 (B) <i>Time: Science and Society</i> 116 CB 116

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8.8.4 Explain how genetic information coded in DNA is passed through sexual or asexual reproduction.	(A) 100-104, 106-111 <i>Lab</i> 105 LD 102 QD 101, 109 (B) 95-101, 103-110 A 96 D 96, 97
8.8.5 Explain how some patterns of inheritance can be explained by pairs of genes that separate when sex cells are formed.	(A) 134, 136-138 <i>MiniLab</i> 138 D 137 LD 139 SJ 137 TPK 136 USW 138
8.8.6 Identify that the basic level of biological classification is the species, which comprises all organisms that can mate with each other and produce fertile offspring.	(A) 24-28 <i>Lab</i> 29 IL 25 TFYI 26 (B) <i>Lab</i> 14, 43, 83 (C) 12-13 <i>Lab</i> 21 <i>National Geographic</i> 54 AS 13 R 42
8.8.7 Explain how changes in the genes of sex cells can affect offspring.	(A) 117, 141 <i>Lab: Design Your Own</i> 146-147 QD 141 VL 141
Content Standard 9.0: Evolution: The Process of Biological Change— <i>Students understand that life forms change over time.</i>	
9.8.1 Explain that millions of species of animals, plants, and microorganisms are alive today.	(A) 156-158 TFYI 158
9.8.2 Investigate and describe how biological evolution provides a scientific explanation for the differences and many similarities between species.	(A) 158-161 <i>Lab: Design Your Own</i> 176-177 D 158 LD 160 VL 159
9.8.3 Investigate and describe how biological adaptations include changes that enhance survival and reproductive success in a particular environment.	(A) 158-161 <i>Launch Lab</i> 155 <i>Lab</i> 164 A 158 QD 158 (B) 64-65 (C) <i>MiniLab</i> 10, 88, 116 (E) 69, 74 <i>MiniLab</i> 72

OBJECTIVES	PAGE REFERENCES
9.8.4 Investigate and describe how unity among organisms is found in similarities of internal structures, chemical processes, and modern evidence of common ancestry.	(A) 25, 169-171 IL 25 TFYI 169 (B) 63 <i>National Geographic</i> 66 A 66 (C) 12-13, 41, 61, 75, 95, 113
9.8.5 Explain how extinction of a species occurs when the adaptive characteristics of a species are insufficient to allow it to survive environmental change.	(E) 130-136 <i>Lab</i> 137 <i>MiniLab</i> 133 <i>National Geographic</i> 132 MM 134 QD 131, 140 TFYI 132
The Nature and History of Science	
Content Standard 18.0: Scientific, Historical, and Technological Perspectives — <i>Students understand that science is a unique way of knowing about things. Many men and women have contributed to the traditions of science. The ability to pursue activities and careers in science is accessible to people from all cultures and all levels of ability.</i>	
By the end of Grade 8 , students know and are able to do everything required in previous grades and:	
18.8.1 Explain that scientific investigations involve the use of logic, respect for the rules of evidence, openness to criticism, and public reporting of methods and procedures. C 5.8.6	E/S (A) 9-12 <i>Science Skill Handbook</i> 194 TFYI 12 (B) <i>The Nature of Science</i> 2-5
18.8.2 Explain that scientific inquiry done in a school setting is similar to what scientists do.	I/L (A) <i>Lab</i> 88-89 <i>Lab: Design Your Own</i> 146-147, 176-177 (B) <i>Lab</i> 140-141 (C) <i>Lab</i> 149 (D) <i>Lab: Design Your Own</i> 82-83 <i>Lab</i> 189 (E) <i>Lab: Design Your Own</i> 26-27 <i>Lab</i> 54-55, 76, 111
18.8.3 Explain, using examples, that ancient peoples provided knowledge about the natural world that is still regarded as valid today, even though that knowledge may not have originated by scientific methods.	I/L (A) 23-25, 129, 156-157 (B) <i>Integrate History</i> 64 (D) <i>Time: Science and History</i> 84 <i>Integrate Social Studies</i> 182 (E) <i>The Nature of Science</i> 2-5
18.8.4 Explain that scientists may work in teams and some may work alone, but all communicate extensively with each other.	E/L (A) <i>The Nature of Science</i> 2-5 (D) <i>The Nature of Science</i> 2-5

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<p>18.8.5 W/L Explain that scientific inquiry and technological design have similarities and differences. Scientists propose explanations for questions about the natural world and engineers propose solutions relating to human problems, needs, and aspirations.</p>	<p>(A) 52 <i>The Nature of Science</i> 2-5 (B) <i>Time: Science and Society</i> 54 <i>Oops! Accidents in Science</i> 86 (E) <i>National Geographic</i> 101</p>
<p>18.8.6 E/S Explain that scientific knowledge is revised through a process of incorporating new evidence gained through continual investigation.</p>	<p>(A) 21, 143-145 <i>National Geographic</i> 22 (B) <i>Time: Science and Society</i> 116</p>
<p>18.8.7 I/L Identify and describe how science is subject to strengths and limitations related to other human social and intellectual activities.</p>	<p>(C) <i>Oops! Accidents in Science</i> 152 (D) <i>The Nature of Science</i> 2-5</p>
<p>Content Standard 19.0: Reasoning and Critical Response Skills—<i>Students understand that many decisions require critical consideration of scientific evidence.</i></p>	
<p>By the end of Grade 8, students know and are able to do everything required in previous grades and:</p>	
<p>19.8.1 E/S Identify and evaluate critically the use of statistics, data, and graphs. E 2.8.4; E 4.8.4; G 7.8.3; M 5.8.5; M 6.8.5; M 7.8.12</p>	<p>(A) 11 <i>Math Skill Handbook</i> 218-219 TFYI 11</p>
<p>19.8.2 I/L Give examples of human activities with their associated benefits, costs and risks. Ec 1.8.3</p>	<p>(E) 73-75, 78-79, 102-110, 112-115 <i>Time: Science and Society</i> 86 A 107 IM 114 TFYI 104, 106, 109, 114</p>
<p>19.8.3 W/L Analyze and describe a system for efficiency, optimal function, and possible sources of malfunction. M 6.8.2; M 6.8.9</p>	<p>(D) 8-13, 20-24, 47-53, 64-72, 80-81, 92-100, 101-106 <i>MiniLab</i> 22, 52, 65, 96, 103 <i>Lab</i> 73, 107 TFYI 9, 12, 21, 23, 48, 51, 67, 96, 99, 102</p>
<p>19.8.4 E/S Critically evaluate information to distinguish between fact and opinion when responding to information. C 4.8.4; E 4.8.4</p>	<p>(A) <i>Lab: Design Your Own</i> 30-31, 146-147 (B) <i>Lab: Design Your Own</i> 22-23, 114-115 (C) <i>Lab: Design Your Own</i> 96-97 (D) <i>Lab: Design Your Own</i> 196-197 (E) <i>Lab: Design Your Own</i> 26-27</p>

Codes Used for TWE Pages

A	Activity
AIL	Alternate Inquiry Lab
AS	Assesment
CB	Content Background
D	Discussion
DI	Differentiated Instruction
IL	Inquiry Lab
IM	Identifying Misconceptions
LD	Lab Demonstration
MM	Make a Model
QD	Quick Demo
R	Reteach
SJ	Science Journal
TFYI	Teacher FYI
TPK	Tie to Prior Knowledge
UA	Use an Analogy
USW	Use Science Words
VL	Visual Learning