



OHIO

Academic Content Standards – Science Grade 6
Life’s Structure and Function A, From Bacteria to Plants B
Earth Materials and Processes F, The Nature of Matter K,
Motion, Forces, and Energy M

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STANDARDS	PAGE REFERENCES
Earth and Space Sciences	
<i>Earth Systems</i>	
1. Describe the rock cycle and explain that there are sedimentary, igneous and metamorphic rocks that have distinct properties (e.g., color, texture) and are formed in different ways.	(F) 37-55 LAB 44, 56 <i>National Geographic</i> 38 CC 38 LD 54 SJ 51 TFYI 39, 47 UA 46 VL 37
2. Explain that rocks are made of one or more minerals.	(F) 36, 41-43, 45-53 <i>Integrate Physics</i> 39 FF 41 R 48
3. Identify minerals by their characteristic properties.	(F) 8-18 LAB 26-27 <i>MiniLab</i> 18 <i>National Geographic</i> 38 IM 11 LD 16 TFYI 10, 17
Life Sciences	
<i>Characteristics and Structure of Life</i>	
1. Explain that many of the basic functions of organisms are carried out by or within cells and are similar in all organisms.	(A) 76-80, 83-87 <i>National Geographic</i> 81 LD 78 R 80 TFYI 77 UA 79 (B) 10, 124-131 IM 130 TFYI 130 UA 129

STANDARDS	PAGE REFERENCES
2. Explain that multicellular organisms have a variety of specialized cells, tissues, organs and organ systems that perform specialized functions.	(A) 40-45, 47 IM 44, 47 (B) 64-65, 74-77, 96, 99, 101, 105, 107, 109, 125, 128-131 <i>Integrate Health</i> 77 <i>Lab</i> 132 UA 65
3. Identify how plant cells differ from animal cells (e.g., cell wall and chloroplasts).	(A) 41, 43, 44 <i>Communicate Your Data</i> 48 LAB 48 IM 44 MM 45 QD 41 VL 43 (B) 63-65, 125-128, 131 IM 126 MM 125 SJ 127 TFYI 64
<i>Heredity</i>	
4. Recognize that an individual organism does not live forever; therefore reproduction is necessary for the continuation of every species and traits are passed on to the next generation through reproduction.	(A) 19, 106 TFYI 19 (B) 10, 32, 98-101, 103-110
5. Describe that in asexual reproduction all the inherited traits come from a single parent.	(A) 103-104 LAB 105 IL 104 (B) 95 <i>MiniLab</i> 95 DI 95 TFYI 95
6. Describe that in sexual reproduction an egg and sperm unite and some traits come from each parent, so the offspring is never identical to either of its parents.	(A) 106-111 DI 108 FF 107 MM 109 (B) 95-97 DI 97
7. Recognize that likenesses between parents and offspring (e.g., eye color, flower color) are inherited. Other likenesses, such as table manners are learned.	(A) 17, 128-134, 136-142 LAB 135 IL 129 LD 139 MM 141 QD 141 (B) 95-97, 133-136, 138-139 <i>National Geographic</i> 137

STANDARDS	PAGE REFERENCES
<i>Diversity and Interdependence of Life</i>	
8. Describe how organisms may interact with one another.	(A) 17, 145 <i>Integrate Environment</i> 144 (B) 10, 16, 18, 19, 51
Physical Sciences	
<i>Nature of Matter</i>	
1. Explain that equal volumes of different substances usually have different masses.	(F) 78-80 A 78 D 79
2. Describe that in a chemical change new substances are formed with different properties than the original substance (e.g., rusting, burning).	(K) 76, 80-85 <i>LAB</i> 88 <i>MiniLab</i> 81 <i>National Geographic</i> 86 D 81 IM 85 UA 85
3. Describe that in a physical change (e.g., state, shape and size) the chemical properties of a substance remain unchanged.	(K) 47-52, 78-79 <i>LAB</i> 53 <i>National Geographic</i> 48, 86 MM 79 TFYI 82 UA 85
4. Describe that chemical and physical changes occur all around us (e.g., in the human body, cooking and industry).	(K) 80, 82 <i>Integrate Life Science</i> 81 <i>National Geographic</i> 86 CD 80 D 81 IL 82 SJ 82
<i>Nature of Energy</i>	
5. Explain that the energy found in nonrenewable resources such as fossil fuels (e.g., oil, coal and natural gas) originally came from the sun and may renew slowly over millions of years.	(F) 66-69 (M) 139-141 UA 140
6. Explain that energy derived from renewable resources such as wind and water is assumed to be available indefinitely.	(F) 76-78 A 79 MM 78 (M) 142-143, 146-147 CD 142 MM 146 VL 143
7. Describe how electric energy can be produced from a variety of sources (e.g., sun, wind and coal).	(F) 66-67 (M) 136-137, 143-145, 147 D 136 DI 144

STANDARDS	PAGE REFERENCES
8. Describe how renewable and nonrenewable energy resources can be managed (e.g., fossil fuels, trees and water).	(F) <i>National Geographic</i> 72-73 LD 68 (M) 140-147 CD 142 SJ 140 VL 143
Science and Technology	
<i>Understanding Technology</i>	
1. Explain how technology influences the quality of life.	(A) <i>National Geographic</i> 50-51 (B) <i>Time: Science and Society</i> 116 (F) <i>LAB: Model and Invent</i> 88-89 (K) <i>Nature of Science</i> 2-5 (M) <i>Science and Society</i> 58, 118
2. Explain how decisions about the use of products and systems can result in desirable or undesirable consequences (e.g., social and environmental).	(A) <i>Nature of Science</i> 2-5 (B) <i>Time: Science and Society</i> 116 (F) <i>Nature of Science</i> 2-5 (K) <i>National Geographic</i> 115 (M) <i>National Geographic</i> 171
3. Describe how automation (e.g., robots) has changed manufacturing including manual labor being replaced by highly-skilled jobs.	(M) <i>Science and Society</i> 118 Note: For the research activity, the instructor can ask the students to investigate the use of robots in manufacturing instead of space exploration.
4. Explain how the usefulness of manufactured parts of an object depend on how well their properties allow them to fit and interact with other materials.	(M) <i>National Geographic</i> 171
<i>Abilities To Do Technological Design</i>	
5. Design and build a product or create a solution to a problem given one constraint (e.g., limits of cost and time for design and production, supply of materials and environmental effects).	(F) <i>Model and Invent</i> 88-89 (K) <i>LAB: Design Your Own</i> 62-63 (M) <i>LAB: Design Your Own</i> 26-27
Scientific Inquiry	
<i>Doing Scientific Inquiry</i>	
1. Explain that there are not fixed procedures for guiding scientific investigations; however, the nature of an investigation determines the procedures needed.	(A) <i>LAB: Design Your Own</i> 145-146 (B) <i>LAB: Design Your Own</i> 114-115 (F) <i>LAB: Design Your Own</i> 176-177
2. Choose the appropriate tools or instruments and use relevant safety procedures to complete scientific investigations.	(A) <i>LAB: Design Your Own</i> 58-59 (B) <i>Model and Invent</i> 52-53 (F) <i>LAB: Use the Internet</i> 116-117
3. Distinguish between observation and inference.	(A) <i>LAB: Design Your Own</i> 30-31 LD 10 (B) <i>Science Skill Handbook</i> 154, 158 (F) <i>LAB</i> 170

STANDARDS	PAGE REFERENCES
4. Explain that a single example can never prove that something is always correct, but sometimes a single example can disprove something.	(M) <i>The Nature of Science</i> 5 Note: The instructor can emphasize this point in classroom discussion of the material under the heading, Drawing a Conclusion.
Scientific Ways of Knowing	
<i>Nature of Science</i>	
1. Identify that hypotheses are valuable even when they are not supported.	(A) 9-13 VL 9 (F) 98-99 D 99
<i>Ethical Practices</i>	
2. Describe why it is important to keep clear, thorough and accurate records.	(A) 11, 14 (M) 5
<i>Science and Society</i>	
3. Identify ways scientific thinking is helpful in a variety of everyday settings.	(A) 9-13 IM 9 (F) <i>Integrate Career</i> 113 (M) <i>Time: Science and Society</i> 58
4. Describe how the pursuit of scientific knowledge is beneficial for any career and for daily life.	(A) <i>Integrate Environment</i> 144 (B) <i>Integrate Career</i> 50 (F) <i>Integrate Career</i> 77 (M) <i>Integrate Career</i> 172
5. Research how men and women of all countries and cultures have contributed to the development of science.	(A) <i>Time: Science and History</i> 28 (B) <i>Integrate History</i> 64 (F) <i>Time: Science and History</i> 28 (K) <i>Integrate History</i> 19 <i>Time: Science and History</i> 32 (M) <i>Integrate History</i> 43, 100

Codes Used for TWE Pages

A	Activity
CC	Curriculum Connection
CD	Cultural Diversity
D	Discussion
DI	Differentiated Instruction
FF	Fun Fact
IL	Inquiry Lab
IM	Identifying Misconceptions
LD	Lab Demonstration
MM	Make a Model
QD	Quick Demo
R	Reteach
SJ	Science Journal
TFYI	Teacher FYI
UA	Use an Analogy
VL	Visual Learning