Full Option Science System (FOSS)
Grades K-8

CORRELATION TO

Texas Essential Knowledge and Skills

Delta Education
...because children learn by doing.®

Texas Essential Knowledge and Skills For Science

Correlation
To
Full Option Science System

The following is a correlation of the State of Texas Essential Knowledge and Skills for Science to the Full Option Science System. This correlation shows representative examples of investigations and activities from the FOSS program that address the Essential Knowledge and Skills. A citation does not include all of the investigations or activities from FOSS that might address a particular standard.

May 2004
Updated June 2008
Updated December 2008

Kindergarten

TEXAS ESSENTIAL KNOWLEDGE AND SKILL ELEMENT	*FOSS INVESTIGATION/ ACTIVITY*	*PAGE NUMBER (S)*
(K.1) ***Scientific processes.*** *The student participates in classroom and field investigations following home and school safety procedures. The student is expected to:*		
(A) demonstrate safe practices during classroom and field investigations; and	All FOSS modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included as in: Fabric, Investigation 1, Part 6	 Pages 29-33
(B) learn how to use and conserve resources and materials.	Wood and Paper, Investigation 1, Part 1 Investigation 4, Part 1	 Pages 8-14 Pages 8-13
(K.2) ***Scientific processes.*** *The student develops abilities necessary to do scientific inquiry in the field and the classroom. The student is expected to:*		
(A) ask questions about organisms, objects, and events;	Trees, Investigation 1, Part 1 Fabric, Investigation 1, Parts 1-4	Pages 7-14 Pages 6-22
(B) plan and conduct simple descriptive investigations;	Wood and Paper, Investigation 1, Parts 4-5 Animals Two by Two, Investigation 2, Part 1	 Pages 24-32 Pages 9-13
(C) gather information using simple equipment and tools to extend the senses;	Fabric, Investigation 1, Part 4 Trees, Investigation 3, Part 5	Pages 20-22 Pages 22-25
(D) construct reasonable explanations using information; and	Animals Two by Two, Investigation 1, Part 2 Wood and Paper, Investigation 1, Parts 4-5	 Pages 17-21 Pages 24-32
(E) communicate findings about simple investigations.	Trees, Investigation 3, Part 9 Animals Two by Two, Investigation 1, Part 3	Page 35-40 Pages 22-25
(K.3) ***Scientific processes.*** *The student knows that information and critical thinking are used in making decisions. The student is expected to:*		
(A) make decisions using information;	Wood and Paper, Investigation 1, Parts 4-5	 Pages 24-32
(B) discuss and justify the merits of decisions; and	Wood and Paper, Investigation 5, Part 1 Fabric, Investigation 2, Part 4	 Pages 8-11 Pages 22-25
(C) explain a problem in his/her own words and propose a solution.	Wood and Paper, Investigation 1, Parts 4-5 Animals Two by Two, Investigation 4, Part 4	 Pages 24-32 Pages 20-23
(K.4) ***Scientific processes.*** *The student uses age-appropriate tools and models to verify that organisms and objects and parts of organisms and objects can be observed, described, and measured.* *The student is expected to:*		
(A) identify and use senses as tools of observation; and	Fabric, Investigation 1, Part 1 Trees, Investigation 1, Part 1	Pages 6-11 Pages 7-14
(B) make observations using tools including hand lenses, balances, cups, bowls, and computers.	Fabric, Investigation 1, Part 4 Trees, Investigation 3, Part 5	Pages 20-22 Pages 22-25
K.5) ***Science concepts.*** *The student knows that organisms, objects, and events have properties and patterns. The student is expected to:*		
(A) describe properties of objects and characteristics of organisms;	Wood and Paper, Investigation 3, Part 1	 Pages 8-12

	Animals Two by Two, Investigation 4, Parts 1-2	Pages 8-15
(B) observe and identify patterns including seasons, growth, and day and night and predict what happens next; and	Trees, Investigation 3, Parts 1-9 Science Stories Animals Two by Two, Investigation 5, Parts 1-3	Pages 10-40 Pages 14-17, 18-21, 22-24 Pages 10-24
(C) recognize and copy patterns seen in charts and graphs.	Fabric, Investigation 2, Part 4 Wood and Paper, Investigation 1, Part 5	Pages 22-25 Pages 28-32
(K.6) ***Science concepts.*** *The student knows that systems have parts and are composed of organisms and objects. The student is expected to:*		
(A) sort organisms and objects into groups according to their parts and describe how the groups are formed;	Animals Two by Two, Investigation 1, Part 4 Trees, Investigation 2, Parts 1-3 Fabric, Investigation 1, Parts 1-2	Pages 26-29 Pages 6-19 Pages 6-15
(B) record observations about parts of plants including leaves, roots, stems, and flowers;	Trees, Investigation 1, Part 1 Investigation 3, Parts 1-9 Science Stories	Pages 7-14 Pages 10-40 Pages 14-17, 18-21, 22-24
(C) record observations about parts of animals including wings, feet, heads, and tails;	Animals Two by Two, investigation 1, Parts 1-4 Science Stories Investigation 5, Parts 1-4 Science Stories	Pages 1-32 Pages 3, 4-7 Pages 1-28 Pages 20-24
(D) identify parts that, when separated from the whole, may result in the part or the whole not working, such as cars without wheels and plants without roots; and	Fabric, Investigation 1, Part 4 Trees, Investigation 1, Part 1	Pages 20-22 Pages 7-14
(E) manipulate parts of objects such as toys, vehicles, or construction sets that, when put together, can do things they cannot do by themselves.	Wood and Paper, Investigation 2, Parts 3-4 Investigation 3, Part 3	Pages 16-23 Pages 18-21
(K.7) ***Science concepts.*** *The student knows that many types of change occur. The student is expected to:*		
(A) observe, describe, and record changes in size, mass, color, position, quantity, time, temperature, sound, and movement;	Trees, Investigation 3, Parts 1-9 Science Stories Animals Two by Two, Investigation 2, Part 2 Investigation 5, Parts 1-4 Science Stories	Pages 10-40 Pages 14-17, 18-21, 22-24 Pages 14-17 Pages 1-28 Pages 20-24
(B) identify that heat causes change, such as ice melting or the Sun warming the air and compare objects according to temperature;	Animals Two by Two, Investigation 5, Part 1	Pages 10-15
(C) observe and record weather changes from day to day and over seasons; and	Trees, Investigation 3, Parts 1-9 Science Stories Air and Weather, Investigation 2, Parts 1-4* Air and Weather, Investigation 4, Parts 1-2*	Pages 10-40 Pages 14-17, 18-21, 22-24 Pages 8-27 Pages 8-18
(D) observe and record stages in the life	Trees, Investigation 3, Parts	

cycle of organisms in their natural environment.	1-9 Science Stories Animals Two by Two, Investigation 5, Parts 1-4 Science Stories	Pages 10-40 Pages 14-17, 18-21, 22-24 Pages 1-28 Pages 20-24
(K.8) ***Science concepts.*** *The student knows the difference between living organisms and nonliving objects. The student is expected to:*		
(A) identify a particular organism or object as living or nonliving; and	Trees, Investigation 1, Part 2 Animals Two by Two, Investigation 5, Part 1	Pages 15-19 Pages 10-15
(B) group organisms and objects as living or nonliving.		

* This module was developed for use in either grade one or two.

(K.9) ***Science concepts.*** *The student knows that living organisms have basic needs. The student is expected to:*		
(A) identify basic needs of living organisms;	Animals Two by Two, Investigation 4, Part 4 Trees, Investigation 1, Part 2	 Pages 20-23 Pages 15-19
(B) give examples of how living organisms depend on each other; and	Trees, Investigation 1, Part 1 Investigation 3, Parts 1-2 Animals Two by Two, Investigation 4, Part 4	Pages 7-14 Pages 10-14 Pages 20-23
(C) identify ways that the Earth can provide resources for life.	Trees, Investigation 1, Part 1 Investigation 1, Part 2	Pages 7-14 Pages 15-19
(K.10) ***Science concepts.*** *The student knows that the natural world includes rocks, soil, and water. The student is expected to:*		
(A) observe and describe properties of rocks, soil, and water; and	Pebbles, Sand, and Silt, Investigation 1, Parts 1-5* FOSS Science Stories	 Pages 8-29 Pages 3-9, 20-23
(B) give examples of ways that rocks, soil, and water are useful.	Pebbles, Sand, and Silt, Investigation 3, Parts 1-5* FOSS Science Stories	 Pages 8-29 Pages 16-19

* This module was developed for use in either grade one or two.

Grade One

TEXAS ESSENTIAL KNOWLEDGE AND SKILL ELEMENT	*FOSS INVESTIGATION/ ACTIVITY*	*PAGE NUMBER (S)*
(1.1) ***Scientific processes.*** *The student conducts classroom and field investigations following home and school safety procedures. The student is expected to:*		
(A) demonstrate safe practices during classroom and field investigations; and	All FOSS modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included as in: New Plants, Investigation 1, Part 2 Air and Weather, Overview Insects and Plants, Investigation 2, Part 2	 Pages 13-22 Page 17 Pages 95-104
(B) learn how to use and conserve resources and materials.	New Plants, Investigation 1, Part 3 FOSS Science Stories Pebbles, Sand, And Silt, Investigation 4, Interdisciplinary Extensions Insects and Plants, Investigation 2, Part 3 Investigation 4, Part 5	 Pages 23-30 Pages 16-19 Page 27 Pages 105-115 Pages 187-191
(1.2) ***Scientific processes.*** *The student develops abilities necessary to do scientific inquiry in the field and the classroom. The student is expected to:*		
(A) ask questions about organisms, objects, and events;	New Plants, Investigation 2, Part 2 FOSS Science Stories Pebbles, Sand and Silt, Investigation 1, Part 1 Solids and Liquids, Investigation 4, Part 1 Insects and Plants, Investigation 3, Parts 1-3 Plants and Animals, Investigation 1, Part 2	 Pages 15-19 Pages 8-13 Page 12 Pages 7-16 Pages 129-151 Pages 58-62
(B) plan and conduct simple descriptive investigations;	Solids and Liquids, Investigation 3, Part 1 Pebbles, Sand and Silt, Investigation 1, Part 2 FOSS Science Stories Insects and Plants, Investigation 2, Part 3 Plants and Animals, Investigation 1, Parts 1-2 Investigation 3, Part 2	 Pages 8-13 Pages 13-17 Pages 24-25 Pages 105-115 Pages 47-62 Pages 128-134
(C) gather information using simple equipment and tools to extend the senses;	Pebbles, Sand and Silt, Investigation 1, Part 1 New Plants, Investigation 2, Parts 1-2 Insects and Plants, Investigation 3, Parts 1-3	 Pages 8-12 Pages 1-19 Pages 52-75
(D) construct reasonable explanations and draw conclusions; and	Balance and Motion, Investigation 1, Part 3 FOSS Science Stories Air and Weather,	 Pages 19-23 Pages 3-9

	Investigation 1, Parts 4-5 FOSS Science Stories Plants and Animals, Investigation 1, Part 2	Pages 21-33 Pages 3-6 Pages 58-62
(E) communicate explanations about investigations	Insects, Investigation 1, Part 3 Balance and Motion, Investigation 1, Part 2 Insects and Plants, Investigation 1, Part 3 Investigation 5, Part 3 Plants and Animals, Investigation 1, Part 3	Pages 22-25 Pages 14-18 Pages 71-73 Pages 219-225 Pages 63-72
(1.3) ***Scientific processes.*** *The student knows that information and critical thinking are used in making decisions. The student is expected to:*		
(A) make decisions using information;	Solids and Liquids, Investigation 1, Part 3 FOSS Science Stories Pebbles, Sand and Silt, Investigation 1, Parts 3-4 Plants and Animals, Investigation 3, Part 3 Investigation 4, Part 2	 Pages 21-24 Pages 3-7 Pages 18-25 Pages 135-140 Pages 157-165
(B) discuss and justify the merits of decisions; and	Solids and Liquids, Investigation 1, Part 3 FOSS Science Stories Pebbles, Sand and Silt, Investigation 1, Part 3-4 Plants and Animals, Investigation 3, Part 3	 Pages 21-24 Pages 3-7 Pages 18-25 Pages 135-140
(C) explain a problem in his/her own words and identify a task and solution related to the problem.	Solids and Liquids, Investigation 1, Part 3 FOSS Science Stories New Plants, Investigation 4, Part 2 Plants and Animals, Investigation 4, Parts 1-2	 Pages 21-24 Pages 3-7 Pages 13-19 Pages 151-163
(1.4) Scientific processes. *The student uses age-appropriate tools and models to verify that organisms and objects and parts of organisms and objects can be observed, described, and measured.* *The student is expected to:*		
(A) collect information using tools including hand lenses, clocks, computers, thermometers, and balances;	Pebbles, Sand and Silt, Investigation 1, Part 1 Solids and Liquids, Investigation 4, Interdisciplinary Extensions FOSS Website Solids and Liquids, Investigation 3, Interdisciplinary Extensions Air and Weather, Investigation 2, Part 2 Insects and Plants, Investigation 1, Parts 1-3 Investigation 3, Parts 1-3	 Pages 8-12 Page 28 Page 30 Pages 19-22 Pages 52-75 Pages 129-151
(B) record and compare collected information; and	Pebbles, Sand and Silt, Investigation 4, Part 3 FOSS Science Stories New Plants, Investigation 1,	 Pages 19-25 Pages 24-25

	Part 2 Plants and Animals, Investigation 1, Part 3	Pages 13-22 Pages 63-72
(C) measure organisms and objects and parts of organisms and objects, using non-standard units such as paper clips, hands, and pencils.	New Plants, Investigation 1, Part 2 Solids and Liquids, Investigation 3, Part 1 Plants and Animals, Investigation 1, Part 2	Pages 13-22 Pages 8-13 Pages 63-72
(1.5) ***Science concepts.*** *The student knows that organisms, objects, and events have properties and patterns. The student is expected to:*		
(A) sort objects and events based on properties and patterns; and	Pebbles, Sand and Silt, Investigation 1, Part 3 Solids and Liquids, Investigation 3, Part 2 Insects and Plants, Investigation 1, Parts 1-3 Investigation 5, Parts 1-3 Plants and Animals, Investigation 3, Part 3	 Pages 18-21 Pages 14-18 Pages 52-75 Pages 206-225 Pages 135-140
(B) identify, predict, and create patterns including those seen in charts, graphs, and numbers.	New Plants, Investigation 2, Part 3 FOSS Science Stories Solids and Liquids, Investigation 4, Part 1 Pebbles, Sand and Silt, Investigation 1, Part 4 FOSS Science Stories Insects and Plants, Investigation 1, Parts 1-3 Investigation 5, Parts 1-3 Science Resources Plants and Animals, Investigation 1, Part 3	Pages 20-28 Pages 12-18 Pages 7-16 Pages 22-25 Pages 22-33 Pages 52-75 Pages 206-225 Page 46 Pages 63-72
(1.6) ***Science concepts.*** *The student knows that systems have parts and are composed of organisms and objects. The student is expected to:*		
(A) sort organisms and objects according to their parts and characteristics;	New Plants, Investigation 2, Part 2 FOSS Science Stories Pebbles, Sand and Silt, Investigation 1, Part 4 FOSS Science Stories Insects, Investigations 1-6 Insects and Plants, Investigation 1, Parts 1-3 Investigation 5, Parts 1-3 Science Resources Plants and Animals, Investigation 4, Part 2 Science Resources	Pages 15-19 Pages 8-11 Pages 22-25 Pages 12-15 Pages 52-75 Pages 206-225 Pages 30-34, 44-55 Pages 157-165 Pages 46-51
(B) observe and describe the parts of plants and animals;	New Plants, Investigation 1, Part 3 FOSS Science Stories Insects, Investigation 1, Part 2 FOSS Science Stories	Pages 23-30 Pages 3-7, 8-15, 40-43 Pages 16-21 Pages 12-15, 22-25

	Insects and Plants, Investigation 1, Parts 1-3 Investigation 2, Part 3 Investigation 3, Parts 1-3 Science Resources Plants and Animals, Investigation 2, Parts 1-3 Science Resources	 Pages 52-75 Pages 105-115 Pages 129-151 Pages 26-36 Pages 87-108 Pages 4-7, 16-19, 28-50
(C) manipulate objects such as toys, vehicles, or construction sets so that the parts are separated from the whole which may result in the part or the whole not working; and	Solids and Liquids, Investigation 1, Part 3 Pebbles, Sand, and Silt, Investigation 3, Parts 1-5 FOSS Science Stories	 Pages 21-24 Pages 8-29 Pages 10-13
(D) identify parts that, when put together, can do things they cannot do by themselves, such as a working camera with film, a car moving with a motor, and an airplane flying with fuel.	Solids and Liquids, Investigation 1, Part 3 FOSS Science Stories Pebbles, Sand, and Silt FOSS Science Stories	 Pages 21-24 Pages 3-7 Pages 16-19
(1.7) ***Science concepts.*** *The student knows that many types of change occur. The student is expected to:*		
(A) observe, measure, and record changes in size, mass, color, position, quantity, sound, and movement;	New Plants, Investigation 2, Part 3 Solids and Liquids, Investigation 4, Part 1 Plants and Animals, Investigation 1, Part 3	 Pages 20-28 Pages 7-16 Pages 63-72
(B) identify and test ways that heat may cause change such as when ice melts;	Solids and Liquids, Investigation 4, Interdisciplinary Extensions FOSS Science Stories	 Page 29 Pages 14-17
(C) observe and record changes in weather from day to day and over seasons; and	Air and Weather, Investigation 2, Parts 1-4 FOSS Science Stories Air and Weather, Investigation 4, Parts 1-2 FOSS Science Stories	 Pages 1-32 Pages 7-13 Pages 8-18 Pages 7-23
(D) observe and record changes in the life cycle of organisms.	New Plants, Investigation 1, Parts 1 –3 FOSS Science Stories FOSS Science Stories Insects, Investigations 1-5 Insects and Plants, Investigations 1-5	 Pages 1-32 Pages 12-15 Pages 22-33
(1.8) ***Science concepts.*** *The student distinguishes between living organisms and nonliving objects. The student is expected to:*		
(A) group living organisms and nonliving objects; and	New Plants, Investigation 1, Part 1 FOSS Science Stories Solids & Liquids, Investigation 1,Part 2 FOSS Science Stories Insects FOSS Science Stories Insects and Plants, Science Resources Plants and Animals, Science Resources	 Pages 8-12 Pages 40-43 Pages 17-20 Pages 22-33, 42-46 Pages 4-9 Pages 30-33 Pages 16-19, 47-

		50
(B) compare living organisms and nonliving objects.	New Plants, Investigation 1, Part 1	Pages 8-12
(1.9) ***Science concepts.*** *The student knows that living organisms have basic needs. The student is expected to:*		
(A) identify characteristics of living organisms that allow their basic needs to be met; and	New Plants, Investigation 1, Part 3 FOSS Science Stories FOSS Science Stories Insects, Investigations 1-5 Insects and Plants, Investigation 1, Parts 1-3 Investigation 2, Part 3 Investigation 3, Part 3 Investigation 5, Parts 1-3 Science Resources Plants and Animals, Science Resources Video: How Plants Get Food	Pages 23-30 Pages 3-7, 8-11, 22-39 Pages 22-39 Pages 52-75 Pages 105-115 Pages 145-151 Pages 206-225 Pages 15-18 Pages 3-8, 21-26, 47-50
(B) compare and give examples of the ways living organisms depend on each other for their basic needs.	New Plants, Investigation 1, Part 3 FOSS Science Stories Insects and Plants, Investigation 2, Part 3 Science Resources Plants and Animals, Science Resources	Pages 23-30 Pages 8-11, 16-39 Pages 105-115 Pages 6-7 Pages 18-19, 22-23, 29-30, 32-33, 35-36, 38-39, 41-45, 47-50
(1.10) ***Science concepts.*** *The student knows that the natural world includes rocks, soil, and water. The student is expected to:*		
(A) identify and describe a variety of natural sources of water including streams, lakes, and oceans;	Air and Weather, Investigation 2, Part 4	Pages 24-27
(B) observe and describe differences in rocks and soil samples; and	Pebbles, Sand and Silt, Investigation 1, Part 1 – 4 Investigation 4, Parts 1 – 3 FOSS Science Stories	Pages 8-25 Pages 8-25 Pages 3-9, 18-25
(C) identify how rocks, soil, and water are used and how they can be recycled.	Pebbles, Sand and Silt, Investigation 3, Parts 1 – 5 FOSS Science Stories Investigation 4, Part 3 FOSS Science Stories	Pages 8-29 Pages 16-19 Pages 19-25 Pages 20-25

Grade Two

TEXAS ESSENTIAL KNOWLEDGE AND SKILL ELEMENT	*FOSS INVESTIGATION/ ACTIVITY*	*PAGE NUMBER (S)*
(2.1) ***Scientific processes.*** *The student conducts classroom and field investigations following home and school safety procedures. The student is expected to:*		
(A) demonstrate safe practices during classroom and field investigations; and	All FOSS modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included as in: Air and Weather, Investigation 1, Part 4 Balance and Motion, Overview Insects and Plants, Investigation 2, Part 2	 Page 24 Page 17 Pages 92-104
(B) learn how to use and conserve resources and materials.	Insects, Investigation 4, Part 5 Insects and Plants, Investigation 2, Part 3 Investigation 4, Part 5	Page 29 Pages 105-115 Pages 187-191
(2.2) ***Scientific processes.*** *The student develops abilities necessary to do scientific inquiry in the field and the classroom. The student is expected to:*		
(A) ask questions about organisms, objects, and events;	Insects, Investigation 1, Part 2 Balance and Motion, Investigation 1, Part 1 Air and Weather, Investigation 1, Part 1 Insects and Plants, Investigation 3, Parts 1-3 Plants and Animals, Investigation1, Part 2	 Pages 16-21 Pages 8-13 Pages 8-12 Pages 129-151 Pages 58-62
(B) plan and conduct simple descriptive investigations;	Balance and Motion, Investigation 1, Part 2 Air and Weather, Investigation 1, Part 1 Insects and Plants, Investigation 2, Part 3 Plants and Animals, Investigation 1, Parts 1-2 Investigation 3, Part 2	 Pages 14-18 Pages 8-12 Pages 105-115 Pages 47-62 Pages 128-134
(C) compare results of investigations with what students and scientists know about the world;	Air and Weather, Investigation 1, Part 4 Insects, Investigation 1, Part 2 Insects and Plants, Investigation 1, Parts 1-3 Investigation 5, Parts 1-3 Plants and Animals, Investigation 3, Part 2	 Pages 21-26 Pages 16-21 Pages 52-75 Pages 105-115 Pages 128-134
(D) gather information using simple equipment and tools to extend the senses;	Air and Weather, Investigation 2, Parts 2-4 Insects, Investigation 1, Part 2 Insects and Plants, Investigation 1, Parts 1-3	 Pages 14-27 Pages 16-21 Pages 52-75

	Investigation 3, Parts 1-3	Pages 129-151
(E) construct reasonable explanations and draw conclusions using information and prior knowledge; and	Balance and Motion, Investigation 1, Part 3 FOSS Science Stories Air and Weather, Investigation 1, Parts 4-5 FOSS Science Stories Plants and Animals, Investigation 1, Part 2	 Pages 19-23 Pages 3-9 Pages 21-33 Pages 3-6 Pages 58-62
(F) communicate explanations about investigations.	Insects, Investigation 1, Part 3 Balance and Motion, Investigation 1, Part 2 Insects and Plants, Investigation 1, Part 3 Investigation 5, Part 3 Plants and Animals, Investigation 1, Part 3	 Pages 22-25 Pages 14-18 Pages 71-73 Pages 219-225 Pages 63-72
(2.3) ***Scientific processes.*** *The student knows that information and critical thinking are used in making decisions. The student is expected to:*		
(A) make decisions using information;	Balance and Motion, Investigation 3, Part 3 Air and Weather, Investigation 1, Part 2 Plants and Animals, Investigation 3, Part 3 Investigation 4, Part 2	 Pages 19-25 Pages 13-16 Pages 135-140 Pages 157-165
(B) discuss and justify the merits of decisions; and	Air and Weather, Investigation 1, Part 4 Insects, Investigation 1, Part 1 Plants and Animals, Investigation 3, Part 3	 Pages 21-26 Pages 8-15 Pages 135-140
(C) explain a problem in his/her own words and identify a task and solution related to the problem.	Insects, Investigation 1, Part 1 Balance and Motion, Investigation 3, Part 2 FOSS Science Stories Plants and Animals, Investigation 4, Parts 1-2	 Pages 8-15 Pages 13-18 Pages 18-20 Pages 151-163
(2.4) ***Scientific processes.*** *The student uses age-appropriate tools and models to verify that organisms and objects and parts of organisms and objects can be observed, described, and measured. The student is expected to:*		
(A) collect information using tools including hand lenses, clocks, computers, thermometers, and balances; and	Insects, Investigation 4, Part 1 Air and Weather, Investigation 2, Part 2 FOSS Website Solids and Liquids, Investigation 4, Interdisciplinary Extensions Balance & Motion, Investigation 1, Parts 1-4 Insects and Plants, Investigation 1, Parts 1-3 Investigation 3, Parts 1-3	 Pages 10-13 Pages 14-19 Page 28 Pages 1-28 Pages 52-75 Pages 129-151
(B) measure and compare organisms and objects and parts of organisms and objects, using standard and non-standard	Balance and Motion, Investigation 3, Math Extensions	 Page 27

units.	Insects, Investigation 1, Interdisciplinary Extensions Plants and Animals, Investigation 1, Part 3	Pages 26-28 Pages 63-72
(2.5) ***Science concepts.*** *The student knows that organisms, objects, and events have properties and patterns. The student is expected to:*		
(A) classify and sequence organisms, objects, and events based on properties and patterns; and	Pebbles, Sand and Silt, Investigation 1, Part 3 Solids and Liquids, Investigation 3, Part 2 Insects Investigation1, Parts 1-3 Insects and Plants, Investigation 1, Parts 1-3 Investigation 5, Parts 1-3 Plants and Animals, Investigation 3, Part 3	Pages 18-21 Pages 14-18 Pages 8-25 Pages 52-75 Pages 206-225 Pages 135-140
(B) identify, predict, and create patterns including those seen in charts, graphs, and numbers.	Air and Weather, Investigation 4, Part 1 Insects, Investigation 1, Math Extension Insects and Plants, Investigation 1, Parts 1-3 Investigation 5, Parts 1-3 Science Resources Plants and Animals, Investigation 1, Part 3	Pages 8-11 Page 26 Pages 52-75 Pages 206-225 Page 46 Pages 63-72
(2.6) ***Science concepts.*** *The student knows that systems have parts and are composed of organisms and objects. The student is expected to:*		
(A) manipulate, predict, and identify parts that, when separated from the whole, may result in the part or the whole not working, such as flashlights without batteries and plants without leaves;	Balance and Motion, Investigation 1, Part 4 Air and Weather, Investigation 1, Part 6 Insects and Plants, Investigation 1, Parts 1-3 Investigation 2, Part 3 Plants and Animals, Investigation 1, Part 2	Pages 24-28 Pages 34-38 Pages 52-75 Pages 105-115 Pages 58-62
(B) manipulate, predict, and identify parts that, when put together, can do things they cannot do by themselves, such as a guitar and guitar strings;	Balance and Motion, Investigation 2, Part 1 Air and Weather, Investigation 1, Part 3	Pages 8-13 Pages 17-20
(C) observe and record the functions of plant parts; and	New Plants, Investigation 1, Part 3 FOSS Science Stories Insects and Plants, Investigation 2, Part 3 Science Resources Plants and Animals, Investigation 2, Parts 1-3 Investigation 4, Parts 1-2 Science Resource Video: How Plants Get Food	Pages 23-30 Pages 3-7, 8-15 Pages 105-115 Pages 15-18 Pages 87-108 Pages 151-163 Pages 4-7
(D) observe and record the functions of animal parts.	Insects, Investigation 1, Part 2 FOSS Science Stories Insects and Plants, Investigation 1, Parts 1-3	Pages 16-21 Pages 8-15, 22-23, 34-35 Pages 52-75

	Investigation 3, Parts 1-3 Investigation 4, Parts 1-5 Investigation 5, Parts 1-3 Science Resources Plants and Animals, Investigation 3, Parts 2-3 Investigation 4, Part 2 Science Resources	Pages 129-151 Pages 166-191 Pages 206-225 Pages 26-31 Pages 128-140 Pages 157-165 Pages 29-30, 32-33, 35-36, 38-39, 41-42, 44, 47-50
(2.7) ***Science concepts****. The student knows that many types of change occur. The student is expected to:*		
(A) observe, measure, record, analyze, predict, and illustrate changes in size, mass, temperature, color, position, quantity, sound, and movement;	Balance and Motion, Investigation 3, Part 1 Air and Weather, Investigation 2, Parts 1 – 4 FOSS Science Stories Insects, Investigation 4, Parts 1-5 FOSS Science Stories Insects and Plants, Investigation 1, Parts 1-3 Investigation 2, Parts 1-3 Investigation 5, Parts 1-3 Plants and Animals, Investigation 1, Parts 2-3 Investigation 3, Part 2	 Pages 6-12 Pages 13-27 Pages 7-13 Pages 1-31 Pages 16-33 Pages 52-75 Pages 105-115 Pages 206-225 Pages 58-72 Pages 128-134
(B) identify, predict, and test uses of heat to cause change such as melting and evaporation;	Air and Weather, Investigation 2, Part 4 Air and Weather, Investigation 2, Interdisciplinary Extensions Solids and Liquids, Investigation 4, Interdisciplinary Extensions	 Page 27 Page 32 Page 29
(C) demonstrate a change in the motion of an object by giving the object a push or a pull; and	Balance and Motion, Investigation 3, Part 1 FOSS Science Stories	 Pages 6-12 Pages 10-17
(D) observe, measure, and record changes in weather, the night sky, and seasons.	Air and Weather, Investigation 2, Parts 1 – 4 FOSS Science Stories Air and Weather, Investigation 4, Parts 1-3 FOSS Science Stories	 Pages 13-27 Pages 7-13 Pages 8-24 Pages 7-13, 14-17, 18-23
(2.8) ***Science concepts.*** *The student distinguishes between living organisms and nonliving objects. The student is expected to:*		
(A) identify characteristics of living organisms; and	Insects, Investigation 1, Parts 1-3 FOSS Science Stories New Plants, Investigation 1, Part 1 Insects and Plants, Investigations 1-5 Science Resources Plants and Animals, Investigations 1-4	 Pages 1-28 Pages 12-15, 22-33 Pages 8-12 Pages 30-33, 37-56

	Science Resources	Pages 4-6, 21-24, 28-45
(B) identify characteristics of nonliving objects.	Air and Weather, Investigation 1, Parts 1-6 FOSS Science Stories Balance & Motion, Investigation 1, Parts 1-4 FOSS Science Stories Solids & Liquids, Investigation 1, Part 2	 Pages 8-38 Pages 3-6 Pages 8-28 Pages 18-35 Pages 17-20
(2.9) ***Science concepts.*** *The student knows that living organisms have basic needs. The student is expected to:*		
(A) identify the external characteristics of different kinds of plants and animals that allow their needs to be met; and	Insects, Investigation 3, Part 3 New Plants, Investigation 1, Part 3 FOSS Science Stories Insects FOSS Science Stories Insects and Plants, Investigation 1, Parts 1-3 Investigation 2, Part 3 Investigation 3, Parts 1-3 Science Resources Plants and Animals, Investigation 2, Parts 1-3 Investigation 3, Parts 2-3 Investigation 4, Parts 1-2 Science Resources Video: How Plants Get Food	 Pages 21-26 Pages 23-30 Pages 3-7 Pages 8-13, 22-23 Pages 52-75 Pages 105-115 Pages 129-151 Pages 8, 15-18, 26-33, 44-55 Pages 87-108 Pages 128-140 Pages 157-165 Pages 4-7, 16-19, 21-24, 28-45, 47-50
(B) compare and give examples of the ways living organisms depend on each other and on their environments.	Insects, Investigation 4, Part 3 FOSS Science Stories Insects and Plants, Investigation 2, Part 3 Science Resources Plants and Animals, Investigation 1, Part 1 Investigation 3, Parts 1-2 Science Resources	 Pages 19-22 Pages 6-11 Pages 105-115 Pages 6-7 Pages 47-57 Pages 120-134 Pages 3-7, 17-19, 21-25, 29-30, 32-33, 35-36, 38-39, 41-45, 47-50
(2.10) ***Science concepts.*** *The student knows that the natural world includes rocks, soil, water, and gases of the atmosphere. The student is expected to:*		
(A) describe and illustrate the water cycle; and	Air and Weather, Investigation 2, Part 4 FOSS Science Stories	 Page 27 Pages 7-13
(B) identify uses of natural resources.	Air and Weather, Investigation 2, Part 4 FOSS Science Stories Pebbles, Sand, and Silt, Investigation 3, Parts 1-5 FOSS Science Stories	 Page 27 Pages 1-6 Pages 8-29 Pages 16-19

Grade Three

TEXAS ESSENTIAL KNOWLEDGE AND SKILL ELEMENT	*FOSS INVESTIGATION/ ACTIVITY*	*PAGE NUMBER (S)*
(3.1) ***Scientific processes.*** *The student conducts field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:*		
(A) demonstrate safe practices during field and laboratory investigations; and	All FOSS modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included as in: Physics of Sound, FOSS Overview Water Investigation 2, Part 1 Magnetism and Electricity, Investigation 1, Part 1 Sun, Moon and Stars, Investigation 1, Part 1 Matter and Energy, Investigation 1, Part 1	 Page 17 Page 9 Page 14 Page 51 Page 58
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	FOSS Science Stories, Water Water, Investigation 3, Interdisciplinary Extensions Water, Investigation 4, Math Extensions FOSS Science Stories Measurement Measurement, Investigation 3, Part 1	Pages 17-21 Page 27 Pages 30-31 Pages16-17 Page 12
(3.2) ***Scientific processes.*** *The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:*		
(A) plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;	Water, Investigation 4, Part 4 Measurement, Investigation 2, Part 3 Sun, Moon and Stars, Investigation 1, Part 2 Matter and Energy, Investigation 3, Part 2	Pages 24-28 Pages 20-21 Pages 56-64 Pages 139-150
(B) collect information by observing and measuring;	Water, Investigation 4, Part 3 Water, Investigation 3, Part 2 Water, Investigation 3, Part 3 Matter and Energy, Investigation 4, Part 1	Pages 19-23 Pages 12-16 Pages 17-20 Pages 174-180
(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;	Water, Investigation 3, Part 2 Water, Investigation 3, Part 3 Sun, Moon and Stars, Investigation 1, Part 2 Matter and Energy, Investigation 3, Part 2	Pages 14-16 Pages 17-20 Pages 56-64 Pages 139-150
(D) communicate valid conclusions; and	Measurement, Investigation 2, Part 3 Water, Investigation 3, Part 2 Water, Investigation 4, Part 4 Water, Investigation 2, Part 2 Sun, Moon and Stars, Investigation 2, Part 2 Matter and Energy,	 Pages 20-21 Page 16 Pages 24-28 Pages 14-18 Pages 89-100

	Investigation 4, Part 2	Pages 181-192
(E) construct simple graphs, tables, maps, and charts to organize, examine and evaluate information.	Structures of Life, Investigation 2, Math Extension Structures of Life, Investigation 3, Math Extension Structures of Life, Investigation 3, Part 4 Structures of Life, Investigation 3, Part 4 Water, Investigation 3, Part 2 Water, Investigation 4, Part 3 Water, Investigation 4, Math Extension Measurement, Investigation 4, Part 2 Matter and Energy, Investigation 3, Parts 2-3	Page 23/Student Sheet #25 Page 31/Student Sheet #26 Pages 27-29 Pages 27-29 Pages 13 & 15 Pages 22 Pages 30-31 Pages 16-17 Pages 139-160
(3.3) ***Scientific processes.*** *The student knows that information, critical thinking, and scientific problem solving are used in making decisions. The student is expected to:*		
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Magnetism and Electricity, Investigations 3, Part 3 Magnetism and Electricity, Investigation 4, Part 2 Magnetism and Electricity, Science Stories Section Matter and Energy, Investigation 3, Part 2	Pages 24-26 Pages 16-17 Student Sheet #19 Page 11 Pages 139-150
(B) draw inferences based on information related to promotional materials for products and services;	FOSS Science Stories Measurement Measurement, Investigation 3, Part 2	Pages 18-20 Pages 16-17/Student Sheet #11
(C) represent the natural world using models and identify their limitations;	Earth Materials, Investigation 1, Part 1 Magnetism and Electricity, Science Stories Section Human Body, Investigation 1 Art Extension Sun, Moon and Stars, Investigation 2, Part 2	Pages 11-15 Pages 4-5 Page 28 Pages 89-100
(D) evaluate the impact of research on scientific thought, society, and the environment; and	Magnetism and Electricity FOSS Science Stories Magnetism and Electricity Water FOSS Science Stories Ideas and Inventions FOSS Science Stories Sun, Moon and Stars, Science Resources	Page 21-23 Pages 12-19 Pages 24-26 Pages 40-43
(E) connect Grade 3 science concepts with the history of science and contributions of scientists.	Water FOSS Science Stories Measurement FOSS Science Stories Sun, Moon and Stars, Science Resources	Pages 24-26 Pages 6-9 Pages 40-45
(3.4) ***Scientific processes.*** *The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:*		
(A) collect and analyze information using tools including calculators, microscopes,	FOSS Website	Top of the FOSSWEB

cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses; and	Measurement, Investigation 3, Math Extensions Measurement, Investigation 4, Part 3 Structures of Life Investigation 1, Part 1 Ideas & Inventions, Investigation 4, Science Extensions Physics of Sound, Investigation 4, Part 2 Earth Materials, Investigation 1, Part 2 Measurement, Investigation 4, Part 3 Measurement, Investigation 4, Part 1 Measurement, Investigation 4, Part 1 & Part 2 Magnetism and Electricity, Investigation 1, Part 1 & Part 2 Earth Materials, Investigation 1, Part 1 Magnetism and Electricity, Investigation 1, Part 4 Matter and Energy, Investigation 3, Parts 2-3 Investigation 4, Part 1	Student Home Pages 22-23 Pages 20-21 Page 32 Page 27 Pages 19-20 Page 19 Page 20 Page 9 Pages 11-17 Pages 11-15; 20-22 Pages 12 Pages 32-34 Pages 139-160 Pages 174-180
(B) demonstrate that repeated investigations may increase the reliability of results.	Human Body, Investigation 1, Part 1 Human Body, Investigation 4, Part 3 Water, Investigation 1, Part 2	Pages 11-14 Pages 22 & 23 Page 16
(3.5) ***Science concepts.*** *The student knows that systems exist in the world. The student is expected to:*		
(A) observe and identify simple systems such as a sprouted seed and a wooden toy car; and	Magnetism and Electricity, Investigation 2, Part 1-3 Water, Investigation 4, Part 2 Water, Science Stories Section Human Body, Investigation 1, Part 1 Structures of Life, Investigation 1, Part 2 Matter and Energy, Investigation 1, Parts 1, 3	Page 10-24 Pages 15-18 Page 19 Page 11-14 Pages 22-27 Pages 50-62, 71-82
(B) observe a simple system and describe the role of various parts such as a yo-yo and string.	Magnetism and Electricity, Investigation 2, Part 2 Water, Investigation 4, Part 2 Measurement, Investigation 2, Part 1 Matter and Energy, Investigation 1, Parts 1, 3	Page 15-19 Pages 15-18 Pages 10-13 Pages 50-62, 71-82

(3.6) ***Science concepts.*** *The student knows that forces cause change. The student is expected to:*		
(A) measure and record changes in the position and direction of the motion of an object to which a force such as a push or pull has been applied; and	Water, Investigation 1, Part 3 Water, Investigation 4, Part 2 Magnetism and Electricity, Investigation 1, Part 3	Pages 21-23 Pages 16-18 Pages 25-29
(B) identify that the surface of the Earth can be changed by forces such as earthquakes and glaciers.	FOSS Science Stories Water	Pages 6-7
(3.7) ***Science concepts.*** *The student knows that matter has physical properties. The student is expected to:*		
(A) gather information including temperature, magnetism, hardness, and mass using appropriate tools to identify physical properties of matter; and	Measurement, Investigation 4, Parts 1-2 Water, Investigation 2, Part 1 Water, Investigation 2, Part 3 Magnetism and Electricity, Investigation 1, Part 1 Measurement, Investigation 2, Parts 1-3 Earth Materials, Investigation 2, Part 5	Pages 11-17 Pages 11-13 Pages 21-24 Pages 11-15 Pages 10-21 Pages 16-20
(B) identify matter as liquids, solids, and gases.	Water, Investigation 1, Part 1 Water, Investigation 3, Part 1 Water, Investigation 2, Part 3 FOSS Science Stories Water Matter and Energy, Investigation 3, Part 1 Science Resources	Pages 11-13 Pages 10-11 Pages 21-23 Pages 8-9, 12-16 Pages 129-138 Pages 39-42
(3.8) ***Science concepts.*** *The student knows that living organisms need food, water, light, air, a way to dispose of waste, and an environment in which to live. The student is expected to:*		
(A) observe and describe the habitats of organisms within an ecosystem;	Structures of Life, Investigation 3, Part 2 Structures of Life, Investigation 4, Part 1	Pages 18-20 Pages 10-13
(B) observe and identify organisms with similar needs that compete with one another for resources such as oxygen, water, food, or space;	Structures of Life, Science Stories Section Structures of Life, Investigation 3, Science Extensions Structures of Life, Investigation 4, Part 4/Student Sheet #21	Pages 22-34, 43 Page 32 Pages 28-29
(C) describe environmental changes in which some organisms would thrive, become ill, or perish; and	Structures of Life, Investigation 3, Part 2 FOSS Science Stories Structures of Life FOSS Science Stories Water	Pages 18-19 Pages 4-5, 10-11, 30-32, 33-36 Pages 22-23
(D) describe how living organisms modify their physical environment to meet their needs such as beavers building a dam or humans building a home.	FOSS Science Stories, Water FOSS Science Stories Structures of Life	Pages 17-19, 22-23 Pages 4-5, 10-11, 35-36
(3.9) ***Science concepts.*** *The student knows that species have different adaptations that help them survive and reproduce in their environment. The student is expected to:*		
(A) observe and identify characteristics among species that allow each to survive and reproduce; and	Structures of Life, Investigation 1, Part 2 Structures of Life, Investigation 2, Parts 1-3	Pages 18-27 Pages 8-22

	Structures of Life, Investigation, Part 1 Structures of Life, Investigation 4, Part 1 FOSS Science Stories Structures of Life	 Pages 8-15 Pages 8-13 Pages 1-3, 22-34
(B) analyze how adaptive characteristics help individuals within a species to survive and reproduce.	Structures of Life, Investigation 4, Part 1 Structures of Life, Investigation 4, Part 1	 Pages 4-5; Pages 8-13
(3.10) ***Science concepts.*** *The student knows that many likenesses between offspring and parents are inherited from the parents. The student is expected to:*		
(A) identify some inherited traits of plants; and	Structures of Life, Investigation 2, Part 1 FOSS Science Stories Structures of Life FOSS Website	 Pages 11-12 Pages 6-9 Structure of Life Website
(B) identify some inherited traits of animals.	Structures of Life, Investigation 4, Part 1 FOSS Science Stories	 Pages 8-13 Pages 20-21, 41-42
(3.11) ***Science concepts.*** *The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:*		
(A) identify and describe the importance of earth materials including rocks, soil, water, and gases of the atmosphere in the local area and classify them as renewable, nonrenewable, or inexhaustible resources;	Earth Materials, Investigation 4, Part 2/Student Sheet #19 FOSS Website FOSS Science Stories Water Water, Investigation 4, Part 1	 Pages 14-18 Water, Resources Game Pages 17-21 Pages 8-13
(B) identify and record properties of soils such as color and texture, capacity to retain water, and ability to support the growth of plants;	Water, Investigation 4, Part 1 Water, Investigation 4, Part 4/Student Sheet #19	Pages 8-13 Pages 24-28
(C) identify the planets in our solar system and their position in relation to the Sun; and	FOSS Website FOSS Science Stories Models and Designs* FOSS Science Stories Ideas and Inventions Sun, Moon and Stars, Science Resources	Models and Designs Website Pages 5-10 Pages 37-38 Pages 16-18
(D) describe the characteristics of the Sun.	FOSS Website FOSS Science Stories Solar Energy* FOSS Science Stories Ideas and Inventions Sun, Moon and Stars, Investigation 1, Part 1 Science Resources	Solar Energy Website Pages 1-7 Page 33 Pages 42-55 Pages 1-3, 7-9

*This module was developed for use in grade five or grade six.

Grade Four

TEXAS ESSENTIAL KNOWLEDGE AND SKILL ELEMENT	*FOSS INVESTIGATION/ ACTIVITY*	*PAGE NUMBER (S)*
(4.1) ***Scientific processes.*** *The student conducts field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:*		
(A) demonstrate safe practices during field and laboratory investigations; and	All FOSS modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included as in: Ideas and Inventions, FOSS Overview Human Body, Investigation 1, Part 1 Magnetism & Electricity Investigation 2, Part 1 Sun, Moon and Stars, Investigation 1, Part 1 Matter and Energy, Investigation 1, Part 1	 Page 17 Page 11 Page 9 Page 51 Page 58
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	Ideas and Inventions, Investigation 3, Part 1 FOSS Science Stories, Water	 Page 12 Pages 18-21
(4.2) ***Scientific processes.*** *The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:*		
(A) plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;	Ideas and Inventions, Investigation 4, Part 2 Structures of Life, Investigation 3, Part 4 Sun, Moon and Stars, Investigation 1, Part 2 Matter and Energy, Investigation 3, Part 2	 Pages 14-18 Pages 27-30 Pages 56-64 Pages 139-150
(B) collect information by observing and measuring;	Ideas and Inventions, Investigation 2, Part 1 Earth Materials, Investigation 1, Part 1 Water, Investigation 4, Part 3 Water, Investigation 3, Part 2 Matter and Energy, Investigation 4, Part 1	 Pages 11-15 Pages 11-13 Pages 19-23 Pages 13-16 Pages 174-180
(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;	Magnetism and Electricity, Investigation 1, Part 4 Human Body, Investigation 4, Part 1 Human Body, Investigation 4, Part 2 Sun, Moon and Stars, Investigation 1, Part 2 Matter and Energy, Investigation 3, Part 2	 Pages 30-34 Pages 8-16 Pages 17-19 Pages 56-64 Pages 139-150
(D) communicate valid conclusions; and	Magnetism and Electricity Investigation 1, Part 4 Water, Investigation 3, Part 2 Human Body, Investigation 3, Part 1	 Page 34 Pages 12-17 Pages 8-14

	Sun, Moon and Stars, Investigation 2, Part 2 Matter and Energy, Investigation 4, Part 2	 Pages 89-100 Pages 181-192
(E) construct simple graphs, tables, maps, and charts to organize, examine and evaluate information.	Ideas & Inventions, Investigation 2, Part 1 Human Body Investigation 4, Part 2/Student Sheet #19 Magnetism & Electricity, Investigation 2, Part 2/Student Sheet #8 & #9 Magnetism and Electricity, Investigation 1, Part 3 Magnetism and Electricity, Investigation 1, Part 3 Magnetism and Electricity, Investigation 1, Science Extension Structures of Life, Investigation 3, Part 4 Matter and Energy, Investigation 3, Parts 2-3	 Pages 11-15 Page 19 Pages 17-18 Page 27 Page 28 Page 36 Pages 27-29 Pages 139-160
(4.3) ***Scientific processes.*** *The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:*		
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Magnetism and Electricity, Science Stories Section Magnetism and Electricity, Investigation 3, Part 3 Physics of Sound, Investigation 1, Part 2 Student Sheet #3 Matter and Energy, Investigation 3, Part 2	 Pages 10-11 Pages 24-26 Page 20 Pages 139-160
(B) draw inferences based on information related to promotional materials for products and services;	FOSS Science Stories Measurement Measurement, Investigation 3, Part 2	Pages 18-20 Pages 16- 17/Student Sheet #11
(C) represent the natural world using models and identify their limitations;	Earth Materials, Investigation 1, Part 1 Magnetism and Electricity, Investigation 3, Part 3 Human Body, Investigation 3, Parts 1-3 Sun, Moon and Stars, Investigation 2, Part 2	 Pages 11-15 Pages 22-26 Pages 8-21 Pages 89-100
(D) evaluate the impact of research on scientific thought, society, and the environment; and	FOSS Science Stories Magnetism and Electricity FOSS Science Stories Magnetism and Electricity FOSS Science Stories, Water FOSS Science Stories Ideas and Inventions Sun, Moon and Stars, Science Resources	Page 21-23 Pages 12-19 Pages 24-26 Pages 11-16 Pages 40-43
(E) connect Grade 4 science concepts with the history of science and contributions of scientists.	Earth Materials, Investigation 2, Part 1 FOSS Science Stories	 Page 25 Pages 12-23

	Magnetism and Electricity FOSS Science Stories Water FOSS Science Stories Ideas and Inventions, Sun, Moon and Stars, Science Resources	 Pages 24-26 Pages 11-16 Pages 40-45
(4.4) ***Scientific processes.*** *The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:*		
(A) collect and analyze information using tools including calculators, safety goggles, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, and compasses; and	FOSS Website Measurement, Investigation 4, Part 3 Structures of Life, Investigation 1, Part 1 Ideas and Inventions, Investigation 3, Science Extensions Measurement, Investigation 4, Part 3 Measurement, Investigation 4, Part 1 Physics of Sound, Investigation 4, Part 2 Magnetism and Electricity, Investigation 1, Part 4 FOSS Website Measurement, Investigation 4, Part 1 & Part 2 Magnetism and Electricity, Investigation 1, Part 1 & Part 2 Earth Materials, Investigation 1, Part 1 Sun, Moon and Stars, Investigation 1, Part 1 Matter and Energy, Investigation 3, Parts 2-3	Top of the FOSSWEB Student Home Page Page 20-21 Page 32 Page 24 Page 20 Page 9 Pages 19-20 Page 32-34 Pages 11-17 Pages 11-15 Page 12 Pages 42-55 Pages 139-160
(B) demonstrate that repeated investigations may increase the reliability of results.	Human Body, Investigation 1, Part 1 Human Body, Investigation 4, Part 3	 Pages 11-14 Pages 22-23
(4.5) ***Science concepts.*** *The student knows that complex systems may not work if some parts are removed. The student is expected to:*		
(A) identify and describe the roles of some organisms in living systems such as plants in a schoolyard, and parts in nonliving systems such as a light bulb in a circuit; and	Magnetism and Electricity, Investigation 2, Parts 1-3 Water, Investigation 4, Part 2 Human Body, Investigation 1, Part 1	 Pages 8-25 Pages 15-18 Pages 11-14
(B) predict and draw conclusions about what happens when part of a system is removed.	Magnetism and Electricity, Investigation 1, Part 3 Magnetism and Electricity, Investigation 2, Part 3 Matter and Energy, Investigation 3, Parts 1, 3	 Pages 25-29 Pages 20-25 Pages 50-62, 71-82

(4.6) ***Science concepts.*** *The student knows that change can create recognizable patterns. The student is expected to:*		
(A) identify patterns of change such as in weather, metamorphosis, and objects in the sky;	Structures of Life, Investigation 2, Part 3 FOSS Science Stories Structures of Life FOSS Science Stories Water Sun, Moon and Stars, Investigation 2, Parts 1-2	 Pages 20-22 Pages 20-21 Pages 14-16 Pages 79-100
(B) illustrate that certain characteristics of an object can remain constant even when the object is rotated like a spinning top, translated like a skater moving in a straight line, or reflected on a smooth surface; and	Ideas and Inventions, Investigation 4, Part 2 Ideas and Inventions, Investigation 4/Teacher Background	 Pages 16-17 Pages 4-5
(C) use reflections to verify that a natural object has symmetry.	Ideas and Inventions, Investigation 4, Part 1 Ideas and Inventions, Investigation 4, Science Extension	 Pages 8-13 Page 27
(4.7) ***Science concepts.*** *The student knows that matter has physical properties. The student is expected to:*		
(A) observe and record changes in the states of matter caused by the addition or reduction of heat; and	Measurement, Investigation 4, Part 2 Water, Investigation 2, Part 3 Water, Investigation 3, Parts 1-4 Matter and Energy, Investigation 4, Part 2 Science Resources	 Pages 16-17 Pages 21-24 Pages 10-26 Pages 181-192 Pages 54-56
(B) conduct tests, compare data, and draw conclusions about physical properties of matter including states of matter, conduction, density, and buoyancy.	Water, Investigation 1, Parts 1-3 Water, Investigation 2, Parts 1-3 Magnetism and Electricity, Investigation 2, Part 3	 Pages 8-23 Pages 8-24 Pages 20-25
(4.8) ***Science concepts.*** *The student knows that adaptations may increase the survival of members of a species. The student is expected to:*		
(A) identify characteristics that allow members within a species to survive and reproduce;	FOSS Science Stories Structures of Life FOSS Science Stories Structures of Life	Pages 22-34 Pages 35-36
(B) compare adaptive characteristics of various species; and	FOSS Science Stories Structures of Life FOSS Science Stories Structures of Life FOSS Science Stories Structures of Life FOSS Science Stories Structures of Life	Pages 1-3 Pages 17-19 Pages 22-34 Pages 41-42
(C) identify the kinds of species that lived in the past and compare them to existing species.	FOSS Science Stories Human Body FOSS Science Stories Earth Materials	Pages 21-24 Page 4
(4.9) ***Science concepts.*** *The student knows that many likenesses between offspring and parents are inherited or learned. The student is expected to:*		
(A) distinguish between inherited traits and learned characteristics; and	Structures of Life, Investigation 3, Part 1	 Pages 12-14

	Structures of Life, Investigation 3, Part 2	Pages 18-30
(B) identify and provide examples of inherited traits and learned characteristics.	Structures of Life, Investigation 3, Part 1 Structures of Life, Investigation 3, Part 2	Pages 12-14 Pages 18-30
(4.10) ***Science concepts.*** *The student knows that certain past events affect present and future events. The student is expected to:*		
(A) identify and observe effects of events that require time for changes to be noticeable including growth, erosion, dissolving, weathering, and flow; and	Structures of Life, Investigation 1, Part 2 Structures of Life, Investigation 2, Part 1-3 Water, Investigation 1, Part 3	Pages 22-27 Pages 11-24 Pages 21-27
(B) draw conclusions about "what happened before" using fossils or charts and tables.	FOSS Science Stories Human Body FOSS Web Site FOSS Science Stories Structures of Life	Pages 21-24 WWW.FOSSWEB.com Earth Materials, Pictures Pages 45-48
(4.11) ***Science concepts.*** *The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:*		
(A) test properties of soils including texture, capacity to retain water, and ability to support life;	Water, Investigation 4, Part 1 Water, Investigation 4, Part 4/Student Sheet #19	Pages 10-12 Pages 27-28
(B) summarize the effects of the oceans on land; and	FOSS Website Models and Designs FOSS Science Stories Landforms*	WWW.FOSSWEB Pages 25-26
(C) identify the Sun as the major source of energy for the Earth and understand its role in the growth of plants, in the creation of winds, and in the water cycle.	FOSS Science Stories Water FOSS Science Stories Structures of Life FOSS Science Stories Solar Energy* Matter and Energy, Science Resources	Pages 14-15 Page 43 Pages 22-24 Pages 1, 5, 19

*This module was developed for use in either grade five or six.

Grade Five

TEXAS ESSENTIAL KNOWLEDGE AND SKILL ELEMENT	*FOSS INVESTIGATION/ ACTIVITY*	*PAGE NUMBER (S)*
(5.1) ***Scientific processes.*** *The student conducts field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:*		
(A) demonstrate safe practices during field and laboratory investigations; and	All FOSS modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included as in: Mixtures and Solutions, Investigation 1, Part 1 Environments, Overview Landforms, Investigation 1, Part 1 Water Planet, Investigation 1	 Page 11 Page 17 Page 9 Page 62
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	FOSS Science Stories Solar Energy Solar Energy, Overview/Science Background Environments, Investigation 5, Parts 1 –3 Mixtures and Solutions, Investigation 1, Part 1	Pages 35-39 Pages 3-7 Pages 1 – 23 Page 11
(5.2) ***Scientific processes.*** *The student uses scientific methods during field and laboratory investigations. The student is expected to:*		
(A) plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;	Variables, Investigation 3, Part 2 Environments, Investigation 6, Part 3 Water Planet, Investigation 2, Parts 2-3 Living Systems, Investigation 3, Parts 2-3	Pages 17 - 19 Pages 19-22 Pages 86-100 Pages 126-141
(B) collect information by observing and measuring;	Mixtures and Solutions, Investigation 2, Part 2 Food and Nutrition, Investigation 1, Parts 1-2 Food and Nutrition, Investigation 4, Part 1 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 2, Part 1	Pages 18 – 20 Pages 8-20 Pages 8-15 Pages 125-135 Pages 85-98
(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;	Environments, Investigation 2, Part 3 Solar Energy, Investigation 2, Part 2 Water Planet, Investigation 2, Parts 2-3 Living Systems, Investigation 3, Part 3	Pages 24 – 27 Pages 16-24 Pages 86-100 Pages 136-141
(D) communicate valid conclusions; and	Food and Nutrition, Investigation 1, Part 2	Pages 16 – 23

	Solar Energy, Investigation 3, Part 1 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 2, Part 1	Pages 8-16 Pages 125-135 Pages 85-98
(E) construct simple graphs, tables, maps, and charts to organize, examine and evaluate information.	Variables, Investigation 1, Part 3 Variables, Investigation 2, Part 2 Landforms, Investigation 1, Part 3 Landforms, Investigation 3, Part 1 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 2, Part 1	Pages 23 – 26 Pages 14 –19 Pages 20 – 28 Pages 11-13 Pages 125-135 Pages 85-98
(5.3) ***Scientific processes.*** *The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:*		
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Variables, Investigation 3, Part 2 Food and Nutrition, Investigation 1, Part 2 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 3, Part 3	Pages 14 -19 Pages 18-21 Pages 125-135 Pages 136-141
(B) draw inferences based on information related to promotional materials for products and services;	Food and Nutrition, Investigation 2, Part 2 Food and Nutrition, Investigation 3, Part 3	Pages 1 - 21 Pages 23-24
(C) represent the natural world using models and identify their limitations;	Landforms, Investigation 1, Part 1 Models and Designs, Investigation 1, Part 1 FOSS Science Stories Models and Designs Water Planet, Investigation 1, Part 1	Pages 8 – 15 Pages 12-16 Pages 1-10 Pages 50-58
(D) evaluate the impact of research on scientific thought, society, and the environment; and	Environments, Investigation 5, Parts 1-3 FOSS Science Stories Environments FOSS Science Stories Models and Designs	Pages 8 – 23 Page 36 Pages 25-36
(E) connect Grade 5 science concepts with the history of science and contributions of scientists.	FOSS Science Stories Mixtures and Solutions FOSS Science Stories Variables Water Planet, Science Resources	Pages 7-10, 11-13, 26-33 Pages 21-28 Pages 15, 18-19
(5.4) ***Scientific processes.*** *The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:*		
(A) collect and analyze information using tools including calculators, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, compasses, balances, hot plates, meter	FOSS Website Food and Nutrition, Investigation 4, Math	Top of the FOSSWEB Student Home Page

sticks, timing devices, magnets, collecting nets, and safety goggles; and	Extensions Mixtures and Solutions, Investigation 1, Part 3 Landforms, Investigation 3, Part 3, Science Extension FOSS Website Mixtures and Solutions, Investigation 1, Part 3 Variables, Investigation 1, Part 1 Levers and Pulleys, Investigation 4, Part 2 Solar Energy, Investigation 1, Part 2 Food and Nutrition, Investigation 2, Part 2 Solar Energy, Investigation 2, Part 2 Food and Nutrition, Investigation 1, Part 1 Levers and Pulleys, Investigation 1, Part 1 Variables, Investigation 1, Part 1 Models and Designs, Investigation 1, Science Extension Environments, Investigation 4, Part 1 Mixtures and Solutions, Investigation 4, Part 1 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 3, Parts 2-3	Pages 21-23 Pages 23-24 Page 27 Pages 23-24 Pages 12-15 Pages 15-20 Pages 15-21 Pages 8-15 Pages 19-23 Pages 12-15 Pages 13-17 Pages 12-15 Page 28 Page 10 Page 10 Pages 125-135 Pages 126-141
(B) demonstrate that repeated investigations may increase the reliability of results.	Food and Nutrition, Investigation 1, Part 2 Food and Nutrition, Investigation 2, Part 2 Variables, Activity 1, Part 1 Water Planet, Investigation 2, Parts 2-3 Living Systems, Investigation 2, Part 1	Pages 18-20 Pages 20-21 Pages 12-15 Pages 86-100 Pages 85-98
(5.5) ***Science concepts.*** *The student knows that a system is a collection of cycles, structures, and processes that interact. The student is expected to:*		
(A) describe some cycles, structures, and processes that are found in a simple system; and	Environments, Investigation 5, Part 3 Environments, Investigation 3, Part 1 Levers and Pulleys, Investigation 3, Part 1 Water Planet, Investigation 4, Part 1 Science Resources Living Systems, Investigation 1, Parts 1-2 Science Resources	Pages 20-22 Pages 11-13 Pages 11-13 Pages 184-197 Pages 67-70 Pages 51-65 Pages 2-13

(B) describe some interactions that occur in a simple system.	Levers and Pulleys, Investigation 3, Part 1 Variables, Investigation 1, Part 2 Living Systems, Investigation 3, Part 1 Science Resources	Pages 11-13 Pages 18-22 Pages 118-125 Pages 31-34, 47-48
(5.6) ***Science concepts.*** *The student knows that some change occurs in cycles. The student is expected to:*		
(A) identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles;	Solar Energy, Investigation 1, Part 2 Variables, Investigation 1, Part 1 Science Stories, Solar Energy	Pages 17-21 Pages 12-15 Pages 8-11
(B) identify the significance of the water, carbon, and nitrogen cycles; and	Science Stories, Solar Energy Science Stories, Solar Energy FOSS Website Water Planet, Investigation 4, Part 1 Science Resources	Pages 22-24 Pages 2 WWW.FOSSWEB.com Water & Environments Portions Pages 184-197 Pages 67-70
(C) describe and compare life cycles of plants and animals.	Environments, Investigations 1-6 Environments, Investigation 1, Part 1 Environments, Investigation 2, Part 2 FOSS Website	All Parts Page 12-15 Pages 18-21 WWW.FOSSWEB.com Structures of Life
(5.7) ***Science concepts.*** *The student knows that matter has physical properties. The student is expected to:*		
(A) classify matter based on its physical properties including magnetism, physical state, and the ability to conduct or insulate heat, electricity, and sound;	Mixture and Solutions, Investigation 1, Part 1 Solar Energy, Investigation 1, Part 2 Solar Energy, Investigation 3, Part 1 Models and Designs, Investigation 2, Part 1 FOSS Website	Pages 12-13 Pages 17-20 Pages 11-15 Pages 12-15 WWW.FOSSWEB.com Physics of Sound Location
(B) demonstrate that some mixtures maintain the physical properties of their ingredients;	Mixtures and Solutions, Investigation 1, Parts 1-2 Mixtures and Solutions, Investigation 1, Part 3	Pages 12-19 Pages 23-24
(C) identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving sugar in water; and	Mixtures and Solutions, Investigation 1, Part 2 Mixtures and Solutions, Investigation 1, Part 3	Pages 18-20 Pages 23-24
(D) observe and measure characteristic properties of substances that remain	Mixtures and Solutions, Investigation 2, Part 1-2	Pages 10-20

constant such as boiling points and melting points.	FOSS Science Stories Variables	Pages 10-11
(5.8) ***Science concepts.*** *The student knows that energy occurs in many forms. The student is expected to:*		
(A) differentiate among forms of energy including light, heat, electrical, and solar energy;	Solar Energy, Investigation 4 Solar Energy, Investigation 4, Background FOSS Science Stories Solar Energy Water Planet, Investigation 3, Parts 1-2 Science Resources	Student Sheet #27 & #28 Pages 6-7 Pages 1-5, 29-39 Pages 125-144 Pages 42-51
(B) identify and demonstrate everyday examples of how light is reflected, such as from tinted windows, and refracted, such as in cameras, telescopes, and eyeglasses;	Solar Energy, Investigation 3, Part 1 FOSS Website	Pages 11-16 WWW.FOSSWEB.com Solar Energy Location
(C) demonstrate that electricity can flow in a circuit and can produce heat, light, sound, and magnetic effects; and	Models and Designs, Investigation 2, Part 1 & 2 FOSS Website	Pages 12-20 WWW.FOSSWEB.com Magnetism and Electricity Location
(D) verify that vibrating an object can produce sound.	Models and Designs, Investigation 2, Part 1	Pages 12-15
(5.9) ***Science concepts.*** *The student knows that adaptations may increase the survival of members of a species. The student is expected to:*		
(A) compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem;	Environments, Investigation 5, Parts 1-3	Pages 11-21
(B) analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem; and	FOSS Science Stories Environments Environments, Investigation 5, Parts 1-3	Pages 1-7, 11-17 Pages 11-21
(C) predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem.	Environments, Science Stories Section	Page 5, 11-17
(5.10) ***Science concepts.*** *The student knows that likenesses between offspring and parents can be inherited or learned. The student is expected to:*		
(A) identify traits that are inherited from parent to offspring in plants and animals; and	FOSS Science Stories Environments FOSS Science Stories Food and Nutrition	Pages 18-20, 47-48 Page 16
(B) give examples of learned characteristics that result from the influence of the environment.	FOSS Science Stories Food and Nutrition	Pages 24-25
(5.11) ***Science concepts.*** *The student knows that certain past events affect present and future events. The student is expected to:*		
(A) identify and observe actions that require time for changes to be measurable, including growth, erosion, dissolving, weathering, and flow;	Landforms, Investigation 2-3 Mixtures and Solution, Investigation 2, Part 1 Water Planet, Investigation 2, Parts 1-4	Pages 11-22 Pages 10-13 Pages 80-100

	Living Systems, Investigation 2, Part 1	 Pages 85-98
(B) draw conclusions about "what happened before" using data such as from tree-growth rings and sedimentary rock sequences; and	FOSS Science Stories Models and Designs	Pages 11-16
(C) identify past events that led to the formation of the Earth's renewable, non-renewable, and inexhaustible resources.	FOSS Science Stories Solar Energy FOSS Website	Pages 1-2 WWW.FOSSWEB.com Water, Resources Simulation
(5.12) ***Science concepts.*** *The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:*		
(A) interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering;	Landforms, Investigation 2, Parts 1-2 Landforms, Investigation 3, Parts 1-2	 Pages 8-22 Pages 8-19
(B) describe processes responsible for the formation of coal, oil, gas, and minerals;	FOSS Website FOSS Science Stories Solar Energy Landforms, Overview	WWW.FOSSWEB.com Landforms Location Pages 1-3 Pages 3-7
(C) identify the physical characteristics of the Earth and compare them to the physical characteristics of the moon; and	FOSS Website Water Planet, Science Resources	WWW.FOSSWEB.com Solar Energy Location Page 6
(D) identify gravity as the force that keeps planets in orbit around the Sun and the moon in orbit around the Earth.	FOSS Science Stories Solar Energy FOSS Website Water Planet, Investigation 1, Part 2 Science Resources	Pages 3- 4, 43-44 WWW.FOSSWEB.com Solar Energy Location Pages 59-66 Pages 16-17

Grade Six

TEXAS ESSENTIAL KNOWLEDGE AND SKILL ELEMENT	*FOSS INVESTIGATION/ ACTIVITY*	*PAGE NUMBER (S)*
(6.1) ***Scientific processes.*** *The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:*		
(A) demonstrate safe practices during field and laboratory investigations; and	All FOSS modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included as in: Levers and Pulleys, Overview Water Planet, Investigation 1 Variables, Investigation 1, Part 1 Electronics Overview Investigation 4	 Page 17 Page 62 Page 12 Page 25 Page 145
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	FOSS Science Stories, Solar Energy Solar Energy, Overview/Science Background Environments, Investigation 5, Parts 1 –3 Mixtures and Solutions, Investigation 1, Part 1 Electronics, Materials Section Diversity of Life, Materials Section	Pages 35-39 Pages 3-7 Pages 1 – 23 Page 11 Page 38 Page 32
(6.2) ***Scientific processes.*** *The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:*		
(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting and using equipment and technology;	Food and Nutrition, Investigation 3, Parts 1-2 Solar Energy, Investigation 4, Parts 1-3 Water Planet, Investigation 2, Parts 2-3 Living Systems, Investigation 3, Parts 2-3 Planetary Science, Investigation 5, Parts 2-3 Diversity of Life, Investigation 9, Part 2 Force and Motion Investigation 2, Part 3	 Pages 8-20 Pages 8-28 Pages 86-100 Pages 126-141 Pages 154-167 Pages 244-252 Pages 89-99
(B) collect data by observing and measuring;	Landforms, Investigation 4, Part 1 Levers and Pulleys, Investigation 4, Part 2 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 2, Part 1 Earth History, Investigation 5,	 Pages 8-15 Pages 14-20 Pages 125-135 Pages 85-98

	Parts 1-2 Human Brain and Senses, Investigation 7, Part 2 Chemical Interactions Investigation 5, Parts 1-3	Pages 175-182 Pages 219-225 Pages 153-171
(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;	Models and Designs, Investigation 1, Parts 1-2 Levers and Pulleys, Investigation 1, Parts 1-3 Water Planet, Investigation 2, Parts 2-3 Living Systems, Investigation 3, Part 3 Weather and Water, Investigation 5, Parts 1-3 Populations and Ecosystems, Investigation 6, Parts 2-3	 Pages 8-21 Pages 8-28 Pages 86-100 Pages 136-141 Pages 152-174 Pages 187-197
(D) communicate valid conclusions; and	Variables, Investigation 1, Parts 1-3 Environments, Investigation 5, Parts 1 –3 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 2, Part 1 Planetary Science, Investigation 5, Parts 2-3 Human Brain and Senses, Investigation 7, Part 2 Force and Motion Investigation 6, Part 2	 Pages 8-27 Pages 8-22 Pages 125-135 Pages 85-98 Pages 154-167 Pages 219-225 Pages 229-235
(E) construct graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate data.	Levers and Pulleys, Investigation 1, Parts 2-3 Environments, Investigation 1, Parts 1–2 Solar Energy, Investigation 4, Parts 1-3 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 2, Part 1 Weather and Water, Investigation 4, Part 1 Electronics, Investigation 3, Part 2	 Pages 18-28 Pages 8-19 Pages 8-28 Pages 125-135 Pages 85-98 Pages 121-130 Pages 124-127
(6.3) ***Scientific processes.*** *The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:*		
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Environments, Investigation 5, Parts 1 –3 Models and Designs, Investigation 1, Parts 1-2 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 3, Part 3 Planetary Science, Investigation 5, Parts 1-4 Populations and Ecosystems, Investigation 6, Parts 2-3	 Pages 8-22 Pages 8-21 Pages 125-135 Pages 136-141 Pages 154-173 Pages 187-197

(B) draw inferences based on data related to promotional materials for products and services;	Food and Nutrition, Investigation 2, Part 2 Food and Nutrition, Investigation 3, Part 3	Pages 1 - 21 Pages 23-24
(C) represent the natural world using models and identify their limitations;	Models and Designs, Investigation 3, Parts 1-3 Variables, Investigation 2, Parts 1-3 Water Planet, Investigation 1, Part 1 Weather and Water, Investigation 3, Part 2 Human Brain and Senses, Investigation 3, Part 3 Force and Motion Investigation 8, Part 2	Pages 8-23 Pages 8-23 Pages 50-58 Pages 97-102 Pages 106-110 Pages 294-301
(D) evaluate the impact of research on scientific thought, society, and the environment; and	Food and Nutrition, Investigation 4, Parts 1-2 FOSS Science Stories Solar Energy Electronics, Resources Planetary Science, Resources	Pages 8-20 Pages 29-39 Pages 18-21, 23-25, 34-36 Pages 52-53, 67-68, 74-82
(E) connect Grade 6 science concepts with the history of science and contributions of scientists.	FOSS Science Stories Mixtures and Solutions FOSS Science Stories Models and Designs Water Planet, Science Resources Earth History, Resources Populations and Ecosystems, Resources	Pages 7-10, 32-36 Pages 5-10 Pages 15, 18-19 Pages 83-88 Pages 46-55, 59-61
(6.4) ***Scientific processes.*** *The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:*		
(A) collect, analyze, and record information using tools including beakers, petri dishes, meter sticks, graduated cylinders, weather instruments, timing devices, hot plates, test tubes, safety goggles, spring scales, magnets, balances, microscopes, telescopes, thermometers, calculators, field equipment, compasses, computers, and computer probes; and	Models and Designs, Investigation 1, Part 3 Levers and Pulleys, Investigation 4, Parts 1-2 Variables, Investigation 2, Part 1 Solar Energy, Investigation 2, Parts 1-2 Variables, Investigation 1, Part 1 Water Planet, Investigation 3, Part 1 Living Systems, Investigation 3, Parts 2-3 Mixtures and Solutions, Investigation 2, Science Extensions Mixtures and Solutions, Investigation 4, Part 1 Levers and Pulleys, Investigation 1, Parts 1-3 Models and Designs, Investigation 1, Part 1	Pages 22-25 Pages 8-20 Pages 8-13 Pages 8-24 Pages 8-15 Pages 125-135 Pages 126-141 Page 31 Page 10 Pages 8-28 Page 16

	Mixtures and Solutions, Investigation 2, Part 1 Electronics, Investigation 3, Parts 1-3 Diversity of Life, Investigation 3, Parts 1-3	Pages 8-14 Pages 119-123 Pages 102-122
(B) identify patterns in collected information using percent, average, range, and frequency.	Food And Nutrition, Investigation 1, Part 2 Variables, Investigation 4, Part 3 Environments, Investigation 3, Part 3 Variables, Investigation 1, Parts 1-3 Human Brain And Senses, Investigation 4, Parts 1-2 Weather And Water, Investigation 3, Part 1	Page 20 Page 22 Pages 18-22 Pages 8-28 Pages 120-135 Pages 93-96
(6.5) ***Scientific concepts.*** *The student knows that systems may combine with other systems to form a larger system. The student is expected to:*		
(A) identify and describe a system that results from the combination of two or more systems such as in the solar system; and	Foss Science Stories, Solar Energy Levers and Pulleys, Investigation 3, Part 2 Water Planet, Investigation 4, Part 1 Science Resources Electronics, Investigation 1, Parts 1-3 Human Brain and Senses, Investigation 2, Parts 1-3 Resources CD: Vision	Pages 22-24, 41-44 Pages 16-20 Pages 184-197 Pages 67-70 Pages 55-70 Pages 67-83 Pages 29-30, 36-38
(B) describe how the properties of a system are different from the properties of its parts.	FOSS Science Stories, Food and Nutrition Levers and Pulleys, Investigation 3, Part 2 Electronics, Investigation 1, Parts 1-3 Human Brain and Senses, Investigation 2, Parts 1-3 Resources CD: Vision	Pages 6-9, 41-50 Pages 16-20 Pages 55-70 Pages 67-83 Pages 29-30, 36-38
(6.6) ***Science concepts.*** *The student knows that there is a relationship between force and motion. The student is expected to:*		
(A) identify and describe the changes in position, direction of motion, and speed of an object when acted upon by force;	Levers and Pulleys, Investigation 1, Part 1 Levers and Pulleys, Investigation 2, Part 3 Models and Designs, Investigation 3, Parts 2-3 Force and Motion Investigation 6, Parts1-4 Investigation 8, Part 1	Pages 8-17 Pages 18-22 Pages 13-23 Pages 218-241 Pages 284-293
(B) demonstrate that changes in motion can be measured and graphically represented; and	Levers and Pulleys, Investigation 4, Part 2 Levers and Pulleys, Investigation 1, Parts 2-3 Solar Energy, Investigation 1,	Pages 14-20 Pages 18-28

	Part 2 Force and Motion Investigation 1, Parts 1-3 Investigation 2, Part 3	Pages 14-22 Pages 47-66 Pages 89-99
(C) identify forces that shape features of the Earth including uplifting, movement of water, and volcanic activity.	FOSS Science Stories, Landforms Earth History, Investigation 4, Parts 3-4 Resources CD, Geology Lab; Earth Processes	Pages 22-29 Pages 138-149 Pages 100-105
(6.7) ***Science concepts.*** *The student knows that substances have physical and chemical properties. The student is expected to:*		
(A) demonstrate that new substances can be made when two or more substances are chemically combined and compare the properties of the new substances to the original substances; and	Mixtures and Solutions, Investigation 4, Parts 1-3 Chemical Interactions Investigation 9, Parts 1-4 Investigation 10, Parts 1-2	Pages 8-24 Pages 280-312 Pages 323-336
(B) classify substances by their physical and chemical properties.	Mixtures and Solutions, Investigation 1, Part 1 Mixtures and Solutions, Investigation 2, Part 3 Food and Nutrition, Investigation 1, Parts 1-2 Chemical Interactions Investigation 1, Parts 1-2 Investigation 2, Part 1	Pages 8-15 Pages 20-24 Pages 8-20 Pages 41-58 Pages 70-74
(6.8) ***Science concepts.*** *The student knows that complex interactions occur between matter and energy. The student is expected to:*		
(A) define matter and energy;	Food and Nutrition, Investigation 4, Part 1	Page 13
(B) explain and illustrate the interactions between matter and energy in the water cycle and in the decay of biomass such as in a compost bin; and	FOSS Science Stories, Solar Energy Water Planet, Investigation 4, Part 1 Science Resources Weather and Water, Investigation 7, Parts 1-2 CD, Cycles: Water Cycle	Pages 1-3, 22-23 Pages 184-197 Pages 67-70 Pages 232-243
(C) describe energy flow in living systems including food chains and food webs.	FOSS Science Stories, Environments Living Systems, Investigation 2, Parts 1-2 Science Resources Populations and Ecosystems, investigation 5, Parts 1-4 Resources	Pages 39-41 Pages 118-135 Pages 31-36, 47-48 Pages 142-169 Pages 17-21
(6.9) ***Science concepts.*** *The student knows that obtaining, transforming, and distributing energy affects the environment. The student is expected to:*		
(A) identify energy transformations occurring during the production of energy for human use such as electrical energy to heat energy or heat energy to electrical energy;	FOSS Science Stories, Solar Energy Solar Energy, Investigation 3, Home/School Extension Electronics, Resources	Pages 29-39 Page 28 Pages 12-13
(B) compare methods used for transforming energy in devices such as water heaters, cooling systems, or hydroelectric and wind power plants; and	FOSS Science Stories, Solar Energy Solar Energy, Investigation 3, Parts 1-2 Solar Energy, Investigation 4,	Pages 29-39 Pages 8-24

	Parts 1-3 Electronics, Resources	Pages 8-28 Pages 12-13
(C) research and describe energy types from their source to their use and determine if the type is renewable, non-renewable, or inexhaustible.	Solar Energy, Investigation 4, Part 1 FOSS Web Site or CDROM	Pages 8-19 Solar Energy Portion, Resource ID Simulation
(6.10) ***Science concepts.*** *The student knows the relationship between structure and function in living systems. The student is expected to:*		
(A) differentiate between structure and function;	FOSS Science Stories Ideas and Inventions FOSS Science Stories Environments Living Systems, Investigation 3, Parts 1-3 Science Resources Diversity of Life, Investigation 6, Part 2 Resources Populations and Ecosystems, Resources Human Brain and Senses, Investigation 2, Parts 2-3 Resources	Pages 6-8, 44-50 Pages 18-19, 20, 21, 22 Pages 51-70 Pages 2-13 Pages 193-197 Pages 24-59 Pages 42-45 Pages 73-83 Pages 40-42, 60-61, 65-74
(B) determine that all organisms are composed of cells that carry on functions to sustain life; and	FOSS Science Stories Food and Nutrition Living Systems, Investigation 1, Part 1 Science Resources Diversity of Life, Investigation 4, Parts 1-2 Resources CD, Cells and the Ribbon of Life	Pages 41-46 Pages 51-59 Pages 2-13 Pages 133-141 Pages 24-26
(C) identify how structure complements function at different levels of organization including organs, organ systems, organisms, and populations.	FOSS Science Stories Food and Nutrition FOSS Science Stories, Environments FOSS Science Stories, Environments Living Systems, Investigation 1, Parts 1-3 Science Resources Diversity of Life, Investigation 6, Part 2 Resources Populations and Ecosystems, Resources Human Brain and Senses, Investigation 2, Parts 2-3 Resources	Pages 6-8, 42, 44-50 Pages 18-19, 20, 21, 22 Pages 9-17 Pages 51-70 Pages 2-13 Pages 193-197 Pages 24-59 Pages 42-45 Pages 73-83 Pages 40-42, 60-61, 65-74
(6.11) ***Science concepts.*** *The student knows that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organisms. The student is expected to:*		
(A) identify some changes in traits that can occur over several generations through	FOSS Science Stories Environments	Pages 47-48

natural occurrence and selective breeding;	Populations and Ecosystems, Investigation 10, Parts 1-3 Resources	 Pages 302-317 Pages 58-61
(B) identify cells as structures containing genetic material; and	FOSS Science Stories Models and Designs Populations and Ecosystems, Investigation 9, Part 2 Resources	Page 4 Pages 267-273 Pages 50-55
(C) interpret the role of genes in inheritance.	FOSS Science Stories Models and Designs Populations and Ecosystems, Investigation 9, Parts 2-4 Resources	Page 4 Pages 267-292 Pages 50-55
(6.12) ***Science concepts.*** *The student knows that the responses of organisms are caused by internal or external stimuli. The student is expected to:*		
(A) identify responses in organisms to internal stimuli such as hunger or thirst;	Environments, Investigation 4, Part 1-3 Diversity of Life, Investigation 6, Part 2 Resources	 Pages 1-22 Pages 193-197 Pages 37-39
(B) identify responses in organisms to external stimuli such as the presence or absence of heat or light; and	Environments, Investigation 2, Part 1-4 Diversity of Life, Investigation 5, Part 2 Resources Human Brain and Senses, Investigation 2, Part 1	 Pages 10-30 Pages 157-164 Pages 63-64 Pages 67-72
(C) identify components of an ecosystem to which organisms may respond.	Environments, Investigation 1, Parts 1-2 Environments, Investigation 4, Part 1-3 Populations and Ecosystems, Investigation 6, Parts 2-3 Diversity of Life, Investigation 8, Part 2	 Pages 8-19 Pages 1-22 Pages 187-197 Pages 244-252
(6.13) ***Science concepts.*** *The student knows components of our solar system. The student is expected to:*		
(A) identify characteristics of objects in our solar system including the Sun, planets, meteorites, comets, asteroids, and moons; and	FOSS Science Stories, Solar Energy FOSS Web Site or CDROM Water Planet, Investigation 1, Part 1 Science Resources Planetary Science, Investigation 9, Parts 1-4 Investigation 10, Parts 1-3 Resources CD, Notebooks: Solar System; Sun; Moon	Pages 40-44 WWW.FOSSWEB.com Pictures & diagrams of Solar System Pages 50-58 Pages 1-13 Pages 250-270 Pages 312-324 Pages 80-89, 101-103
(B) describe types of equipment and transportation needed for space travel.	FOSS Science Stories, Models and Design Water Planet, Science Resources Planetary Science, Investigation 7, Parts 2-3	Pages 17-20 Pages 18-19 Pages 222-231

	Resources CD, Notebooks: Space Exploration	Pages 74-77, 90-97
(6.14) ***Science concepts.*** *The student knows the structures and functions of Earth systems. The student is expected to:*		
(A) summarize the rock cycle;	Earth History, Investigation 8, Part 1 Resources CD, Geology Lab: Rock Database; Formation of Metamorphic, Sedimentary, and Igneous Rocks	Pages 254-258 Pages 93-97
(B) identify relationships between groundwater and surface water in a watershed; and	FOSS Science Stories Landforms	Pages 15-21, 28-29
(C) describe components of the atmosphere, including oxygen, nitrogen, and water vapor, and identify the role of atmospheric movement in weather change.	FOSS Science Stories, Solar Energy Water Planet, Investigation 4, Parts 1-3 Science Resources Weather and Water, Investigation 2, Part 2 Investigation 6, Part 1 Investigation 8, Parts 2-3 Investigation 9, Parts 1-2 Resources CD, Elevator to Space	Pages 18-20, 22-25 Pages 184-211 Pages 67-88 Pages 76-80 Pages 190-193 Pages 271-279 Pages 296-310 Pages 6-7, 33, 53-62

Grade Seven

TEXAS ESSENTIAL KNOWLEDGE AND SKILL ELEMENT	*FOSS INVESTIGATION/ ACTIVITY*	*PAGE NUMBER (S)*
(7.1) ***Scientific processes.*** *The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:*		
(A) demonstrate safe practices during field and laboratory investigations; and	All FOSS modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included as in: Electronics, Investigation 4 Overview Diversity of Life, Overview Materials Section	 Page 145 Page 25 Page 17 Page 32
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	Electronics, Materials Section Diversity of Life Materials Section Populations and Ecosystems Materials Section	 Page 38 Page 32 Page 31
(7.2) ***Scientific processes.*** *The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:*		
(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting and using equipment and technology;	Planetary Science, Investigation 5, Parts 2-3 Diversity of Life, Investigation 9, Part 2 Weather and Water, Investigation 4, Part 1 Force and Motion Investigation 2, Part 3	 Pages 154-57 Pages 244-252 Pages 121-130 Pages 89-99
(B) collect data by observing and measuring;	Earth History, Investigation 5, Parts 1-2 Human Brain and Senses, Investigation 7, Part 2 Electronics, Investigation 3, Parts 1-3 Chemical Interactions Investigation 5, Part 3	 Pages 175-182 Pages 219-225 Pages 119-132 Pages 165-171
(C) organize, analyze, make inferences and predict trends from direct and indirect evidence;	Weather and Water, Investigation 5, Parts 1-3 Populations and Ecosystems, Investigation 6, Parts 2-3 Diversity of Life, Investigation 9, Part 2	 Pages 152-174 Pages 187-197 Pages 244-252
(D) communicate valid conclusions; and	Planetary Science, Investigation 5, Parts 2-3 Human Brain and Senses, Investigation 7, Part 2 Diversity of Life, Investigation 9, Part 2 Chemical Interactions Investigation 7, Parts 3-4	 Pages 154-167 Pages 219-225 Pages 244-252 Pages 215-228
(E) construct graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate data.	Weather and Water, Investigation 4, Part 1 Electronics, Investigation 3, Part 2	 Pages 121-138 Pages 124-127

	Human Brain and Senses, Investigation 7, Part 1 Force and Motion Investigation 1, Part 2	Pages 210-218 Pages 57-62
(7.3) ***Scientific processes.*** *The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:*		
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Planetary Science, Investigation 5, Parts 1-4 Populations and Ecosystems, Investigation 6, Parts 2-3 Weather and Water, Investigation 3, Parts 1-3	Pages 154-173 Pages 187-197 Pages 93-110
(B) draw inferences based on data related to promotional materials for products and services;		
(C) represent the natural world using models and identify their limitations;	Weather and Water, Investigation 3, Part 2 Human Brain and Senses, Investigation 3, Part 3 Earth History, Investigation 4, Parts 3, 5-6	Pages 97-102 Pages 106-110 Pages 138-146, 150-162
(D) evaluate the impact of research on scientific thought, society, and the environment; and	Electronics, Investigation 4, Part 2 Resources Populations and Ecosystems Resources Planetary Science Resources	Pages 150-151 Pages 18-21, 23-25, 34-36 Pages 46-55, 59-61 Pages 52-53, 67-68, 74-82
(E) connect Grade 7 science concepts with the history of science and contributions of scientists.	Populations and Ecosystems Resources Planetary Science Resources Earth History, Resources Force and Motion Resources	Pages 46-55, 59-61 Pages 52-53, 71-73, 101-103 Pages 83-88 Pages 50-52
(7.4) ***Scientific processes.*** *The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:*		
(A) collect, analyze, and record information to explain a phenomenon using tools including beakers, petri dishes, meter sticks, graduated cylinders, weather instruments, hot plates, dissecting equipment, test tubes, safety goggles, spring scales, balances, microscopes, telescopes, thermometers, calculators, field equipment, computers, computer probes timing devices, magnets, and compasses; and	Electronics, Investigation 3, Parts 1-3 Diversity of Life, Investigation 3, Parts 1-3 Weather and Water, Investigation 5, Parts 1-2 Planetary Science, Investigation 5, Parts 2-3	Pages 119-123 Pages 102-122 Pages 152-168 Pages 154-167
(B) collect and analyze information to recognize patterns such as rates of change.	Weather and Water, Investigation 3, Part 3 Electronics, Investigation 3, Parts 2-3 Planetary Science, Investigation 5, Parts 2-3	Pages 103-110 Pages 124-132 Pages 158-167

(7.5) ***Scientific concepts.*** *The student knows that an equilibrium of a system may change. The student is expected to:*		
(A) describe how systems may reach an equilibrium such as when a volcano erupts; and	Weather and Water, Resources Earth History, Resources Populations and Ecosystems, Resources	 Pages 25-26 Pages 100-103 Pages 8-13
(B) observe and describe the role of ecological succession in maintaining an equilibrium in an ecosystem.		
(7.6) ***Science concepts.*** *The student knows that there is a relationship between force and motion. The student is expected to:*		
(A) demonstrate basic relationships between force and motion using simple machines including pulleys and levers;	See grade six module Levers and Pulleys	
(B) demonstrate that an object will remain at rest or move at a constant speed and in a straight line if it is not being subjected to an unbalanced force; and	Force and Motion Investigation 1, Parts 1-2 Investigation 2, Part 3 Investigation 6, Parts 1-4	 Pages 47-62 Pages 89-99 Pages 218-245
(C) relate forces to basic processes in living organisms including the flow of blood and the emergence of seedlings.	Diversity of Life, Resources	Page 32
(7.7) ***Science concepts.*** *The student knows that substances have physical and chemical properties. The student is expected to:*		
(A) identify and demonstrate everyday examples of chemical phenomena such as rusting and tarnishing of metals and burning of wood;	Chemical Interactions Investigation 10, Parts 1-12	 Pages 323-336
(B) describe physical properties of elements and identify how they are used to position an element on the periodic table; and	Chemical Interactions Investigation 2, Parts 1-2 Resources	 Pages 70-80 Pages 3-6
(C) recognize that compounds are composed of elements.	Chemical Interactions Investigation 9, Parts 1-2 Resources	 Pages 280-297 Pages 63-67
(7.8) ***Science concepts.*** *The student knows that complex interactions occur between matter and energy. The student is expected to:*		
(A) illustrate examples of potential and kinetic energy in everyday life such as objects at rest, movement of geologic faults, and falling water; and	Electronics, Resources Weather and Water, Resources Earth History, Resources Force and Motion Investigation 1, Part 1-2 Investigation 2, Part 3	Pages 12-13 Pages 71-74 Pages 64-65 Pages 47-62 Pages 89-99
(B) identify that radiant energy from the Sun is transferred into chemical energy through the process of photosynthesis.	Diversity of Life, Resources Populations and Ecosystems, Investigation 5, Part 2 Resources	Pages 36-37 Pages 151-155 Pages 14-15
(7.9) ***Science concepts.*** *The student knows the relationship between structure and function in living systems. The student is expected to:*		
(A) identify the systems of the human organism and describe their functions; and		
(B) describe how organisms maintain stable internal conditions while living in changing external environments.	Diversity of Life, Resources	Pages 38-39

(7.10) ***Science concepts.*** *The student knows that species can change through generations and that the instructions for traits are contained in the genetic material of the organisms. The student is expected to:*		
(A) identify that sexual reproduction results in more diverse offspring and asexual reproduction results in more uniform offspring;	Populations and Ecosystems, Resources	Pages 53-54
(B) compare traits of organisms of different species that enhance their survival and reproduction; and	Populations and Ecosystems, Investigation 10, Parts 1-3 Resources	Pages 302-317 Pages 59-63
(C) distinguish between dominant and recessive traits and recognize that inherited traits of an individual are contained in genetic material.	Populations and Ecosystems, Investigation 9, Parts 2-4 Resources	Pages 267-291 Pages 46-53
(7.11) ***Science concepts.*** *The student knows that the responses of organisms are caused by internal or external stimuli. The student is expected to:*		
(A) analyze changes in organisms such as fever or vomiting that may result from internal stimuli; and	Diversity of Life, Investigation 6, Part 2 Resources	Pages 193-197 Pages 37-39
(B) identify responses in organisms to external stimuli found in the environment such as the presence or absence of light.	Diversity of Life, Investigation 5, Part 2 Resources Human Brain and Senses, Investigation 2, Part 1	Pages 157-164 Pages 63-64 Pages 67-72
(7.12) ***Science concepts.*** *The student knows that there is a relationship between organisms and the environment. The student is expected to:*		
(A) identify components of an ecosystem;	Populations and Ecosystems, Investigation 2, Part 2 Investigation 3, Parts 1-3 Investigation 4, Parts 1-2 Resources	Pages 70-79 Pages 90-107 Pages 119-129 Pages 8-41
(B) observe and describe how organisms including producers, consumers, and decomposers live together in an environment and use existing resources;	Populations and Ecosystems, Investigation 3, Parts 1-3 Investigation 4, Part 2 Resources	Pages 90-107 Pages 122-129 Pages 14-21
(C) describe how different environments support different varieties of organisms; and	Populations and Ecosystems, Investigation 7 Resources	Pages 210-215 Pages 25-41
(D) observe and describe the role of ecological succession in ecosystems.		
(7.13) ***Science concepts.*** *The student knows components of our solar system. The student is expected to:*		
(A) identify and illustrate how the tilt of the Earth on its axis as it rotates and revolves around the Sun causes changes in seasons and the length of a day; and	Planetary Science, Investigation 3, Parts 1-2 CD, Day/Night Simulation Weather and Water, Investigation 3, Parts 1-2 Resources CD, Cycles: Seasons	Pages 89-98 Pages 93-102 Pages 12-19
(B) relate the Earth's movement and the moon's orbit to the observed cyclical phases of the moon.	Planetary Science, Investigation 9, Parts 1-4 CD, Phases of the Moon; Lunar Calendar	Pages 283-301
(7.14) ***Science concepts.*** *The student that natural events and human activity can alter Earth systems. The student is expected to:*		
(A) describe and predict the impact of different catastrophic events on the Earth;	Planetary Science, Resources	Pages 67-68
(B) analyze effects of regional erosional	Earth History, Investigation 3,	

deposition and weathering; and	Part 4 Investigation 4, Parts 3-4 Video, Weathering and Erosion	Pages 108-111 Pages 138-149
(C) make inferences and draw conclusions about effects of human activity on Earth's renewable, nonrenewable, and inexhaustible resources.	Weather and Water, Investigation 9, Part 4 Resources Earth History, Resources	 Pages 315-318 Pages 63-65 Pages 64-67

Grade Eight

TEXAS ESSENTIAL KNOWLEDGE AND SKILL ELEMENT	*FOSS INVESTIGATION/ ACTIVITY*	*PAGE NUMBER (S)*
(8.1) ***Scientific processes.*** *The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:*		
(A) demonstrate safe practices during field and laboratory investigations; and	All FOSS modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included as in: Electronics, Investigation 4 Overview Diversity of Life, Overview Materials Section	 Page 145 Page 25 Page 17 Page 32
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	Electronics, Materials Section Diversity of Life Materials Section Populations and Ecosystems Materials Section	 Page 38 Page 32 Page 31
(8.2) ***Scientific processes.*** *The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:*		
(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting and using equipment and technology;	Planetary Science, Investigation 5, Parts 2-3 Diversity of Life, Investigation 9, Part 2 Weather and Water, Investigation 4, Part 1 Chemical Interactions Investigation 8, Parts 1-3	 Pages 154-167 Pages 244-252 Pages 121-130 Pages 248-268
(B) collect data by observing and measuring;	Earth History, Investigation 5, Parts 1-2 Human Brain and Senses, Investigation 7, Part 2 Electronics, Investigation 3, Parts 1-3 Force and Motion Investigation 1, Part 2	 Pages 175-182 Pages 219-225 Pages 119-132 Pages 57-62
(C) organize, analyze, evaluate, make inferences, and predict trends from direct and indirect evidence;	Weather and Water, Investigation 5, Parts 1-3 Populations and Ecosystems, Investigation 6, Parts 2-3 Diversity of Life, Investigation 9, Part 2 Force and Motion Investigation 2, Part 2	 Pages 152-174 Pages 187-197 Pages 244-252 Pages 57-62
(D) communicate valid conclusions; and	Planetary Science, Investigation 5, Parts 2-3 Human Brain and Senses, Investigation 7, Part 2 Diversity of Life, Investigation 9, Part 2 Chemical Interactions Investigation 5, Part 3	 Pages 154-167 Pages 219-225 Pages 244-252 Pages 165-171
(E) construct graphs, tables, maps, and charts using tools including computers to	Weather and Water, Investigation 4, Part 1	 Pages 121-138

organize, examine, and evaluate data.	Electronics, Investigation 3, Part 2 Human Brain and Senses, Investigation 7, Part 1 Force and Motion Investigation 2, Part 2	Pages 124-127 Pages 210-218 Pages 57-62
(8.3) ***Scientific processes.*** *The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:*		
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Planetary Science, Investigation 5, Parts 1-4 Populations and Ecosystems, Investigation 6, Parts 2-3 Weather and Water, Investigation 3, Parts 1-3	Pages 154-173 Pages 187-197 Pages 93-110
(B) draw inferences based on data related to promotional materials for products and services;		
(C) represent the natural world using models and identify their limitations;	Weather and Water, Investigation 3, Part 2 Human Brain and Senses, Investigation 3, Part 3 Earth History, Investigation 4, Parts 3, 5-6	Pages 97-102 Pages 106-110 Pages 138-146, 150-162
(D) evaluate the impact of research on scientific thought, society, and the environment; and	Electronics, Investigation 4, Part 2 Resources Populations and Ecosystems Resources Planetary Science Resources	Pages 150-151 Pages 18-21, 23-25, 34-36 Pages 46-55, 59-61 Pages 52-53, 67-68, 74-82
(E) connect Grade 8 science concepts with the history of science and contributions of scientists.	Populations and Ecosystems Resources Planetary Science Resources Earth History, Resources Forces and Motion Resources	Pages 46-55, 59-61 Pages 52-53, 71-73, 101-103 Pages 83-88 Pages 50-52
(8.4) ***Scientific processes.*** *The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:*		
(A) collect, record, and analyze information using tools including beakers, petri dishes, meter sticks, graduated cylinders, weather instruments, hot plates, dissecting equipment, test tubes, safety goggles, spring scales, balances, microscopes, telescopes, thermometers, calculators, field equipment, computers, computer probes, water test kits, and timing devices; and	Electronics, Investigation 3, Parts 1-3 Diversity of Life, Investigation 3, Parts 1-3 Weather and Water, Investigation 5, Parts 1-2 Planetary Science, Investigation 5, Parts 2-3	Pages 119-123 Pages 102-122 Pages 152-168 Pages 154-167
(B) extrapolate from collected information to make predictions.	Planetary Science, Investigation 5, Parts 2-4 Earth History, Investigation 4, Part 3 Electronics, Investigation 3, Parts 2-3	Pages 158-173 Pages 138-146 Pages 124-132

(8.5) ***Scientific processes.*** *The student knows that relationships exist between science and technology. The student is expected to:*		
(A) identify a design problem and propose a solution;	Electronics, Investigation 9, Part 2 Force and Motion Investigation 8, Part 2	 Pages 290-297 Pages 294-301
(B) design and test a model to solve the problem; and	Electronics, Investigation 9, Part 2 Force and Motion Investigation 8, Part 2	 Pages 290-297 Pages 294-301
(C) evaluate the model and make recommendations for improving the model.	Electronics, Investigation 9, Part 2 Force and Motion Investigation 8, Part 2	 Pages 290-297 Pages 294-301
(8.6) ***Science concepts.*** *The student knows that interdependence occurs among living systems. The student is expected to:*		
(A) describe interactions among systems in the human organism;	Human Brain and Senses, Investigation 8, Parts 1-2 Resources	 Pages 240-252 Pages 29-30, 36-38, 43-46, 63-74
(B) identify feedback mechanisms that maintain equilibrium of systems such as body temperature, turgor pressure, and chemical reactions; and	Diversity of Life, Investigation 6, Part 2 Resources	 Pages 193-197 Pages 38-39
(C) describe interactions within ecosystems.	Populations and Ecosystems, Investigation 3, Part 3 Investigation 4, Parts 1-2 Investigation 5, Part 4	 Pages 103-107 Pages 119-129 Pages 161-169
(8.7) ***Science concepts.*** *The student knows that there is a relationship between force and motion. The student is expected to:*		
(A) demonstrate how unbalanced forces cause changes in the speed or direction of an object's motion; and	Force and Motion Investigation 6, Parts 1-4 Investigation 8, Part 1	 Pages 218-245 Pages 284-293
(B) recognize that waves are generated and can travel through different media.		
(8.8) ***Science concepts.*** *The student knows that matter is composed of atoms. The student is expected to:*		
(A) describe the structure and parts of an atom; and		
(B) identify the properties of an atom including mass and electrical charge.		
(8.9) ***Science concepts.*** *The student knows that substances have chemical and physical properties. The student is expected to:*		
(A) demonstrate that substances may react chemically to form new substances;	Chemical Interaction Investigation 9, Parts 1-4 Investigation 10, Parts 1-2 Resources	 Pages 280-312 Pages 323-336 Pages 63-67
(B) interpret information on the periodic table to understand that physical properties are used to group elements;	Chemical Interaction Investigation 2, Part 1 Resources	 Pages 70-74 Pages 3-6, 90-91
(C) recognize the importance of formulas and equations to express what happens in a chemical reaction; and	Chemical Interaction Investigation 9, Parts 1-2 Resources	 Pages 280-297 Pages 63-67
(D) identify that physical and chemical properties influence the development and application of everyday materials such as cooking surfaces, insulation, adhesives, and plastics.		

(8.10) ***Science concepts.*** *The student knows that complex interactions occur between matter and energy. The student is expected to:*		
(A) illustrate interactions between matter and energy including specific heat;	Electronics, Investigation 1, Parts 1-3 Resources Weather and Water, Investigation 4, Parts 1-2 Investigation 5, Parts 2-3 CD, Matter and Energy: Heat Energy	Pages 55-70 Pages 1-2 Pages 121-139 Pages 163-174
(B) describe interactions among solar, weather, and ocean systems; and	Weather and Water, Investigation 7, Parts 1-2 Investigation 9, Parts 1 and 4 Resources	Pages 232-243 Pages 296-302, 315-318 Pages 53-76
(C) identify and demonstrate that loss or gain of heat energy occurs during exothermic and endothermic chemical reactions.		
(8.11) ***Science concepts.*** *The student knows that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organisms. The student is expected to:*		
(A) identify that change in environmental conditions can affect the survival of individuals and of species;	Populations and Ecosystems, Investigation 10, Parts 1-3 Resources	Pages 302-317 Pages 59-61
(B) distinguish between inherited traits and other characteristics that result from interactions with the environment; and	Populations and Ecosystems, Resources	Pages 60-63
(C) make predictions about possible outcomes of various genetic combinations of inherited characteristics.	Populations and Ecosystems, Investigation 9, Parts 3-4 Resources	Pages 274-292 Pages 48-49
(8.12) ***Science concepts.*** *The student knows that cycles exist in Earth systems. The student is expected to:*		
(A) analyze and predict the sequence of events in the lunar and rock cycles;	Planetary Science, Investigation 8, Parts 1-2 Earth History, Investigation 8, Part 1 Resources	Pages 250-259 Pages 254-258 Pages 93-97
(B) relate the role of oceans to climatic changes; and	Weather and Water, Resources	Pages 54-55
(C) predict the results of modifying the Earth's nitrogen, water, and carbon cycles.	Weather and Water, Investigation 9, Part 4 Resources	Pages 315-318 Pages 63-65
(8.13) ***Science concepts.*** *The student knows characteristics of the universe. The student is expected to:*		
(A) describe characteristics of the universe such as stars and galaxies;	Planetary Science, Resource	Page 100
(B) explain the use of light years to describe distances in the universe; and	Planetary Science, Resource	Page 100
(C) research and describe historical scientific theories of the origin of the universe.		
(8.14) ***Science concepts.*** *The student that natural events and human activities can alter Earth systems. The student is expected to:*		
(A) predict land features resulting from gradual changes such as mountain building, beach erosion, land subsidence, and continental drift;	Earth History, Investigation 4, Parts 3-4 Resources CD, Earth Processes	Pages 138-149 Pages 100-105

(B) analyze how natural or human events may have contributed to the extinction of some species; and	Planetary Science, Resources Populations and Ecosystems, Resources	Pages 67-68 Pages 59-61
(C) describe how human activities have modified soil, water, and air quality.	Earth History, Resources Weather and Water, Investigation 9, Part 4 Resources	Pages 64-67 Pages 315-318 Pages 63-65