



A Correlation of the
**Texas Essential Knowledge
and Skills (TEKS)**

with the
**Science and Technology
for Children™ Curriculum**

Prepared by

 **Carolina Biological Supply Company**

Working Together To Be The Most Valued
Teammate Of Every Science Educator

Correlation to Texas Essential Knowledge and Skills Science (English and Spanish)

Publisher: Carolina Biological Supply Company

Program Title: Science and Technology for Children™

Key to STC Unit Abbreviations

O Organisms	PGD Plant Growth and Development	Mw Microworlds
W Weather	RM Rocks and Minerals	E Ecosystems
SL Solids and Liquids	CT Chemical Tests	FC Food Chemistry
CM Comparing and Measuring	So Sound	FS Floating and Sinking
LCB The Life Cycle of Butterflies	AS Animal Studies	EP Experiments with Plants
S Soils	LW Land and Water	MT Measuring Time
C Changes	EC Electric Circuits	MM Magnets and Motors
BW Balancing and Weighing	MD Motion and Design	TP The Technology of Paper
		DD Discovery Deck

Recommended Grade Levels for STC Units

1st				2nd				3rd			
O	W	SL	CM	LCB	S	C	BW	PGD	RM	CT	So

4th				5th				6th			
AS	LW	EC	MD	Mw	E	FC	FS	EP	MT	MM	TP

Any STC unit may be used one grade level above or below that for which it was designed. However, the National Science Resources Center (NSRC), developer of STC, recommends that a unit not be moved up or down more than one grade level from these recommendations. To see how a unit might correlate to the TEKS at the next higher or lower grade level, view the correlations at that grade level as well.

**Correlation to Texas Essential Knowledge and Skills
Science, Grade 1
(English and Spanish)**

Any STC unit may be used one grade level above or below that for which it was designed. To see how a unit might correlate to the TEKS at the next higher or lower level, view the correlation at that grade level as well.

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Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	O: L-2; L-10 W: L-5 SL: L-4, L-10 CM: L-2	27; 126-7 54 46, 96 25	Do not taste things in science class; use of protective gloves. Safety in the use of a thermometer. Sanitation. Safety with liquids. Safety with scissors and procedures.
(B) learn how to use and conserve resources and materials.	O: L-2; L-11; L-12	25; 133-145	Plants to be conserved for they are essential to life on earth; plants and animals have different needs which must be met by their habitats.
(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;	O: L-1; L-2; L-4 through L-16 W: L-1; L-2; L-7 SL: L-8; L-9; L-15 CM: L-11; L-14	20; 27-9; 55-7; 72; 80-1; 92-4; 104-8; 113-5; 123-9; 134-6; 143-4; 152-3; 165-6; 171-3; 185 15-6; 24; 73; 78-80; 84-6; 137-8 88; 106	Questions about plants and animals. Questions about weather features including temperature. Students test their knowledge of the properties of solids and liquids. Students ask questions about how to measure objects and find answers.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(B) plan and conduct simple descriptive investigations;	O: L-3 through L-15 W: L-7; L-8; L-12; L-16 SL: L-8; L-9; L-15 CM: L-11; L-14	35-173 73; 80-2; 123-4; 150-2 78-80; 84-6; 137-8 88; 106	Inquiry into the characteristics and needs of plants and animals. Recording outside temperature. Recording water temperatures and predicting. Evaluating water-resistance of fabrics. Evaluating data. Students test their knowledge of the properties of solids and liquids. Students plan ways to measure objects and make measurements.
(C) gather information using simple equipment and tools to extend the senses;	O: L-2; L-4 through L-16 W: L-4; L-7; L-8; L-9; L-10 SL: L-11; L-15 CM: L-2 through L-16	26-7; 52; 68; 80; 91; 102; 112; 122; 134; 142; 150; 164; 170; 184 42-4; 73-4; 80-4; 92-4; 101-2 104; 135 25; 31; 38-9; 45-6; 56-7; 63-4; 72-4; 78-80; 84; 88-9; 94-5; 100-1; 106-7; 112-3; 125-6	Hand lenses, cups, spoons, plant misters, planter trays, terraria, aquaria. Observe and record wind speed, temperature, and rainfall using a wind flag, thermometer, and rain gauge, respectively. Hand lens to observe liquids. Students use a variety of tools and procedures for measuring length, etc.
(D) construct reasonable explanations and draw conclusions; and	O: L-4; L-6; L-8; L-10; L-13; L-14; L-15; L-16 W: L-9; L-12; L-16 SL: L-3; L-4; L-6; L-7; L-8; L-12; L-13; L-14; L-16 CM: L-2 through L-16	57; 79; 106; 128; 150-2; 164-6; 170-3; 183-5 92-4; 123-4; 151-2 36, 46; 65; 73; 78-80; 110; 117; 126-7; 147 25; 31; 38-9; 45-6; 56-7; 63-4; 72-4; 78-80; 84; 88-9; 94-5; 100-1; 106-7; 112-3; 125-6	Conclusions re: "What is a plant?" "What is an animal?" "How are plants and animals alike/different?" and related conclusions. Relationship of color and temperature. Water resistance properties of fabrics. Patterns of local weather. Students make generalizations about the properties of solids and liquids. Students compare and measure objects in various ways and draw conclusions about the best procedures to use and why.

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(E) communicate explanations about investigations.	<p>O: L-1; L-2; L-4 through L-16</p> <p>W: L-8; L-9; L-15; L-16</p> <p>SL: L-1; L-8; L-9; L-10; L-15; L-16</p> <p>CM: L-2 through L-16</p>	<p>19-20; 29; 57; 72; 81; 93-4; 105-6; 114-5; 124-8; 136; 144; 152; 165-6; 171-2; 185</p> <p>82; 94; 145; 151-2</p> <p>21; 80; 86; 98; 138; 147-8</p> <p>25; 31; 38-9; 45-6; 56-7; 63-4; 72-4; 78-80; 84; 88-9; 94-5; 100-1; 106-7; 112-3; 125-6</p>	<p>Communications re: “What is a plant?” “What is an animal?” “How are plants and animals alike/different?” and related conclusions.</p> <p>Comparisons of temperatures and other weather features observed.</p> <p>Students communicate their discoveries of the properties of solids and liquids.</p> <p>Students communicate their results and conclusions from measuring and comparing objects. [Student communication is a part of each STC lesson. It is usually included in the Final Activities section of the lesson.]</p>
(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;	<p>O: L-2; L-6; L-8; L-10 through L-16</p> <p>W: L-9; L-12; L-16</p> <p>SL: L-8; L-9; L-15; L-16</p> <p>CM: L-7; L-8; L-11; L-16</p>	<p>29; 80; 106; 128; 136; 144; 152; 165-6; 171-2; 184-5</p> <p>94; 124; 152</p> <p>78-80; 84-6; 137-8</p> <p>63, 72; 88; 125</p>	<p>Decisions on the similarities and differences of plants and animals.</p> <p>Color of clothes to wear on a hot/cold day. Best fabric for a raincoat. Identify local weather patterns.</p> <p>Select properties to identify sets of objects. Select tests to identify properties of new objects. Compare and contrast solids and liquids.</p> <p>Based on prior unit experiences, students decide how best to measure objects.</p>

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(B) discuss and justify the merits of decisions; and	O: L-2; L-6; L-8; L-10 through L-16 W: L-9; L-12; L-16 SL: L-8 CM: L-7; L-8; L-11; L-16	29; 80; 106; 128; 136; 144; 152; 165-6; 171-2; 184-5 94; 124; 152 78-80 63, 72; 88; 125	Decisions on the similarities and differences of plants and animals. Color of clothes to wear on a hot/cold day. Best fabric for a raincoat. Identify local weather patterns. Student pairs sort solids by properties and identify reasons. Students discuss and decide on procedures to be used.
(C) explain a problem in his/her own words and identify a task and solution related to the problem.	O: L-2; L-6; L-8; L-10 through L-16 W: L-9; L-12; L-16 SL: L-8; L-9; L-15; L-16 CM: L-2 through L-16	29; 80; 106; 128; 136; 144; 152; 165-6; 171-2; 184-5 94; 124; 152 78-80; 84-6; 137-8 25; 31; 38-9; 45-6; 56-7; 63-4; 72-4; 78-80; 84; 88-9; 94-5; 100-1; 106-7; 112-3; 125-6	Decisions on the similarities and differences of plants and animals. Color of clothes to wear on a hot/cold day. Best fabric for a raincoat. Identify local weather patterns. Select properties to identify sets of objects. Select tests to identify properties of new objects. Compare and contrast solids and liquids. Students discuss ways to compare and measure objects.
(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:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) collect information using tools including hand lenses, clocks, computers, thermometers, and balances;	<p>O: L-2; L-4 through L-16</p> <p>W: L-4; L-7; L-8; L-9; L-10</p> <p>SL: L-1 through L-16</p> <p>CM: L-2 through L-16</p>	<p>26-7; 52; 68; 80; 91; 102; 112; 122; 134; 142; 150; 164; 170; 184</p> <p>42-4; 73-4; 80-4; 92-4; 101-2</p> <p>19; 27; 34; 44; 56; 62; 70; 78; 84; 96; 102; 109; 115; 124; 135; 140; 154; 164; 174</p> <p>25; 31; 38-9; 45-6; 56-7; 63-4; 72-4; 78-80; 84; 88-9; 94-5; 100-1; 106-7; 112-3; 125-6</p>	<p>Use of hand lens for observations.</p> <p>Record wind speed, temperature, and rainfall using a wind flag, thermometer, and rain gauge, respectively.</p> <p>Hand lenses, wooden stirrers, spoons, cups. [Balances can be used to determine mass of the solids. Timers can be used for the drop races.]</p> <p>Students use various tools to measure objects.</p> <p>[For all units: computers can be used to collect and analyze data, create tables, and write reports of investigations, but specific directions for computer use are not included.]</p>
(B) record and compare collected information; and	<p>O: L-2; L-4 through L-16</p> <p>W: L-4; L-7; L-8; L-9; L-10; L-15; L-16</p> <p>SL: L-1 through L-7; L-9 through L-16</p> <p>CM: L-2 through L-16</p>	<p>26-7; 52; 68; 80; 91; 102; 112; 122; 134; 142; 150; 164; 170; 184</p> <p>42-4; 73-4; 80-4; 92-4; 101-2; 144-5; 151-2</p> <p>21; 27-9; 35-6; 44-47; 62-4; 71-3; 84-7; 97-9; 104-5; 110-1; 116-8; 125-8; 137-8; 147</p> <p>25; 31; 38-9; 45-6; 56-7; 63-4; 72-4; 78-80; 84; 88-9; 94-5; 100-1; 106-7; 112-3; 125-6</p>	<p>Recording and comparing of data about plants and animals.</p> <p>Record wind speed, temperature, and rainfall. Compare observations to daily forecasts. Summarize collected data.</p> <p>Students record and compare data on solids and liquids.</p> <p>Students measure objects and distances and compare their results.</p>
(C) measure organisms and objects and parts of organisms and objects, using non-standard units such as paper clips, hands, and pencils.	CM: L-2 through L-16	<p>25; 31; 38-9; 45-6; 56-7; 63-4; 72-4; 78-80; 84; 88-9; 94-5; 100-1; 106-7; 112-3; 125-6</p>	Students use various tools to measure objects.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	O: L-2 W: L-14 SL: L-2 CM: L-2; L-3; L-4; L-5; L-7; L-9; L-11; L-14; L-16	29 139 28 25; 31; 38-9; 45-6; 63-4; 79-80; 88-9; 106-7; 125-6	Sort seeds. Sort cloud photographs. Sort a set of 20 solids. Objects are placed in order by length, etc.
(B) identify, predict, and create patterns including those seen in charts, graphs, and numbers.	O: L-2; L-4 through L-16 W: L-16 SL: L-2; L-11; L-16 CM: L-2; L-3; L-4; L-5; L-7; L-9; L-11; L-14; L-16	26-7; 52; 68; 80; 91; 102; 112; 122; 134; 142; 150; 164; 170; 184 151-2 26-7; 102-3; 147 25; 31; 38-9; 45-6; 63-4; 79-80; 88-9; 106-7; 125-6	Use Venn diagrams and other charts to identify relationships. Tally weather observations to identify local weather patterns. Students create charts of the properties of solids and liquids and use a Venn diagram to compare and contrast the properties. Use collected data to produce graphs, etc. Make predictions and identify patterns.
(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;	O: L-2; L-4 through L-16 W: L-14 SL: L-2 CM: L-2; L-3; L-4; L-5; L-7; L-9; L-11; L-14; L-16	26-7; 52; 68; 80; 91; 102; 112; 122; 134; 142; 150; 164; 170; 184 151-2 28 25; 31; 38-9; 45-6; 63-4; 79-80; 88-9; 106-7; 125-6	Sort seeds. Use Venn diagrams and other charts to identify relationships. Sort cloud photographs. Sort a set of 20 solids. Objects and parts of objects are placed in order by length, etc.

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(B) observe and describe the parts of plants and animals;	O: L-2; L-4 through L-16	26-7; 52; 68; 80; 91; 102; 112; 122; 134; 142; 150; 164; 170; 184	Students observe and make lists of the characteristics of plants and animals.
(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			
(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.	O: L-6; W: L-4; L-6; L-10 CM: L-8 through L-16	80-1 44-7; 64; 101-2 72-4; 78-80; 84; 88-9; 94-5; 100-1; 106-7; 112-3; 125-6	Things needed for seeds to germinate and grow. Parts of a model thermometer, a rain gauge, and wind flag. Students find that by putting together or linking things such as stirring sticks and Unifix Cubes™ they can measure objects of greater length.
(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;	O: L-2; L-6; L-7; L-8; L-9; L-10 W: L-2; L-3; L-4; L-7 through L-10 SL: L-3; L-4; L-14 CM: L-6; L-16 S: L-3 C: L-1	39-43; 80-1; 93; 105; 114; 124-7 21-31; 34-6; 42-4; 73-4; 80-4; 92-4; 101-2 35-6; 44-6; 125-6 56-7; 125-6 45 17-32	Plant seeds and observe growth. Observe the movements of animals. Students use their senses to observe the weather. They measure and record changes in wind speed, temperature, cloud cover, and rainfall. Determine the properties of solids that roll and investigate the ease with which solids roll; students can observe and record changes in color. Students measure change in position. Observe and record the sound of soil samples in cups. Students may observe a sound change when tablet is added to water (p. 23); Extension 1 (p. 24).
(B) identify and test ways that heat may cause change such as when ice melts;	W: L-8; L-9	80-2; 92-4	Heat causes change in a thermometer.
(C) observe and record changes in weather from day to day and over seasons; and	W: L-1 through L-16	13-153	Each day over a period of weeks, students record wind speed, temperature, cloud cover, and precipitation and summarize weather characteristics over a long period of time.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(D) observe and record changes in the life cycle of organisms.	O: L-2; L-6; L-11; L-12	39-43; 80-1; 134-6; 142-4	Germination and growth of seeds. Growth and possible reproduction of animals.
(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	O: L-10; L-13; L-14; L-15; L-16 SL: L-8 CM: L-2; L-3; L-4; L-5; L-7; L-9; L-11; L-14; L-16	128; 150; 164-5; 170-2; 184-5 78-80 25; 31; 38-9; 45-6; 63-4; 79-80; 88-9; 106-7; 125-6	Group animals together, group plants together, and decide that humans group closer to animals than to plants. Students group a set of 20 solids. Objects are measured and their lengths sequenced.
(B) compare living organisms and nonliving objects.	O: L-3; L-6	39-43; 80-1	Identify seedlings as alive and list the materials needed for their growth.
(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	O: L-2; L-4 through L-16	26-7; 52; 68; 80; 91; 102; 112; 122; 134; 142; 150; 164; 170; 184	Use Venn diagrams and other charts to list characteristics.
(B) compare and give examples of the ways living organisms depend on each other for their basic needs.	O: L-2; L-4 through L-16	26-7; 52; 68; 80; 91; 102; 112; 122; 134; 142; 150; 164; 170; 184	Identify plants as food sources for animals.
(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;			
(B) observe and describe differences in rocks and soil samples; and	S: L-1 through L-16	17-181	Observe and describe differences in soil samples. [Rocks are not addressed.]
(C) identify how rocks, soil, and water are used and how they can be recycled.	O: L-1 through L-16 S: L-2 through L-13	17-190 31-38; 139-150	Identify water as a basic need of organisms. Identify how soil is used and recycled in compost. Identify how water is used for seeds and plants. [Rocks are not addressed; students do not identify how water can be recycled.]

**Correlation to Texas Essential Knowledge and Skills
Science, Grade 2
(English and Spanish)**

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Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	LCB: L-2 S: Teaching <i>Soils</i> C: Teaching <i>Changes</i> ; L-1 BW: L-12	17 8 8; 22 113	Do not taste things in science class. Use materials as directed. Use materials as directed. Correct procedure for sampling by smell. Do not taste things in science class.
(B) learn how to use and conserve resources and materials.	S: L-2; L-10; L-13	34-6; 114-20; 140-2	Composting activity. Also studies of plant roots in soil and reading selection on earthworms.
(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;	LCB: L-1; L-2; L-8 S: L-1 C: L-14	10; 18; 53 21 145	Students ask questions about the stages of the butterfly life cycle. Questions about soil. Questions about rust.

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(B) plan and conduct simple descriptive investigations;	LCB: L-7 S: L-8; L-14 through L-16 C: L-11; L-15; L-16 BW: L-16	46 90-2; 155-6; 166-7; 175-8 119-20; 154-6; 163-5 141-2	Investigation of chrysalis formation. Analyze mystery mixture and local soil samples. Separation of mystery mixture. Writing and carrying out a formula for change. Solving a mystery by weighing.
(C) compare results of investigations with what students and scientists know about the world;	LCB: L-14; L-15; Appendix B S: L-1 C: L-1 BW: L-2	88-9; 93-5; 101-4 25 19 21	Compare observations to other insects, other life cycles. History of silk. Knowledge of soil. (Built on throughout unit.) Knowledge of change. (Built on throughout unit.) Ways we balance and weigh. (Built on throughout unit.)
(D) gather information using simple equipment and tools to extend the senses;	LCB: L-2 through L-7 BW: L-7 through L-10; L-14; L-15; L-16	17; 24; 30; 35; 40; 46 66-7; 73-4; 84-5; 91-3; 127; 134-5	Use hand lens. Equal-arm balance.
(E) construct reasonable explanations and draw conclusions using information and prior knowledge; and	LCB: L-13; L-14; L-15 S: L-8; L-15 C: L-11 BW: L-15	84; 88-9; 93-5 92; 167 120 135-6	Analyze data, make predictions, make comparisons and generalizations. Conclusions and reasons regarding analysis of mystery mixture and local soil. Analysis of a mystery mixture. Students reach conclusions about volume and density.
(F) communicate explanations about investigations.	LCB: L-9 S: L-16 C: L-8 BW: L-15	59 177 96 135	Communicate findings to family. Students share discoveries about local soil. Discoveries about dissolving. Students communicate findings about volume and density. [Student communication is a part of each STC lesson. It is usually included in the Final Activities section of the lesson.]

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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;	LCB: L-13; L-14; L-15 S: L-8; L-14; L-15 C: L-11 BW: L-16	84; 88-9; 93-5 90-2; 155-7; 166-7 119-20 141-2	Make decisions about the relationships of the butterfly and its life cycle to other organisms. Make plans and test mystery mixtures and local soil samples. Students analyze a mixture. Students decide how to solve a problem.
(B) discuss and justify the merits of decisions; and	LCB: L-13; L-14; L-15 S: L-15 C: L-16 BW: L-8	84; 88-9; 93-5 166 164 73-4	Assemble evidence. Give evidence for a butterfly being an insect. Make connections to other life cycles. Results of soil tests and reasons. Students present recipes for change. Students decide how to sequence objects with a balance.
(C) explain a problem in his/her own words and identify a task and solution related to the problem.	LCB: L-15 S: L-15 C: L-3 BW: L-16	93 166-7 47-8 141-2	"Think-pair-share" technique. Testing local soils. Concept of evaporation. Students develop a plan to solve a problem.
(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:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) collect information using tools including rulers, meter sticks, measuring cups, clocks, hand lenses, computers, thermometers, and balances;	W: L-5 through L-9 SL: L-4 LCB: L-2 through L-7 S: L-1; L-2; L-3; L-4 C: L-1; L-2; L-4 through L-9; L-11 through L-16 BW: L-7 through L-10; L-14; L-15; L-16	51-97 43-7 17; 24; 30; 35; 40; 46 23; 34; 45; 53-4 23; 37-8; 58; 70; 78; 87; 94; 101; 120; 127; 134; 146; 153; 162 66-7; 73-4; 84-5; 91-3; 127; 134-5	Use thermometer and meter stick. Use ruler. Use hand lens. Use hand lens. Use clock and hand lens. Use equal-arm balance. [For all units: computers can be used to collect analyze data, create tables, and write reports of investigations, but specific directions for computer use are not included. Measuring cups are not used.]
(B) measure and compare organisms and objects and parts of organisms and objects, using standard and non-standard units.	O: L-3 CM: L-2 through L-16 LCB: L-2 S: L-16 BW: L-7 through L-10; L-13 through L-16	43 23-127 18 173-82 66-7; 73-4; 84-5; 91-3; 127; 134-5	Measure plants with Unifix Cubes or strips of paper. Measure with a variety of standard and non-standard units. Measure length of caterpillars. Measure plants with craft sticks or strips of cardboard. Use of equal-arm balance. [No activity compares organisms and parts of organisms using non-standard units of measurement.]
(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	LCB: L-9 BW: L-8; L-9; L-14; L-15	59 73-4; 84-5; 128; 135	Sequence stages of butterfly life cycle. Sequence by weight.
(B) identify, predict, and create patterns including those seen in charts, graphs, and numbers.	LCB: L-2 and following; L-9 BW: L-6 through L-11; L-14	18; 59 60-1; 69; 76; 85; 90-4; 101-4; 130	Continuing activity: use of calendar to record butterfly stages. Creation of life cycle wheels, etc. Making and interpreting charts and graphs.

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(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;	BW: L-5; L-6	48-50; 58-62	Parts of a mobile and an equal-arm balance and their functions.
(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;	S: L-6; L-10; L-11; L-12 C: L-4; L-6 BW: L-2 through L-7	73-6; 114-5; 124-5; 131 60; 79 20-1; 28-9; 38-9; 48-50; 57-60; 66-8	Assembly and use of materials to perform soil tests. Materials used to separate mixtures. Balance beams, mobiles, and equal-arm balances.
(C) observe and record the functions of plant parts; and	S: L-9; L-10; L-16	103-6; 114-5; 175-7	Observe plant roots and plant growth in different soils.
(D) observe and record the functions of animal parts.	LCB: L-4; L-11	27-30; 73-5	Body parts of caterpillar and butterfly and their functions.
(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;	LCB: L-2 through L-11 C: L-10 BW: L-3; L-4; L-6	15-75 111-2 28-9; 38-9; 59	Growth and developmental stages of the butterfly. Chemical and physical changes are studied throughout the unit. Balance, fulcrum positions. Movement of balance arm.
(B) identify, predict, and test uses of heat to cause change such as melting and evaporation;	C: L-2; L-3; L-9	37-9; 47-9; 51-4; 103-4	Melting of ice. Evaporation and condensation of water.
(C) demonstrate a change in the motion of an object by giving the object a push or a pull; and	BW: L-6	59	Arm of an equal-arm balance.
(D) observe, measure, and record changes in weather, the night sky, and seasons.	W: L-2 through L-16	21-155	Each day students observe, measure, and record changes in the weather. [Students do not observe, measure, and record changes in the night sky and seasons.]

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	LCB: L-3	24	Characteristics of living organisms.
(B) identify characteristics of nonliving objects.	S: all lessons C: all lessons BW: all lessons	17-179 17-172 13-143	Characteristics of soil components. Composition of soils. Chemical and physical properties and their changes. Weight (mass), volume, and density.
(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	LCB: L-2; L-4; L-10	18; 24-5; 29-30; 68-9	Parts of the caterpillar. Feeding of the caterpillar and butterfly.
(B) compare and give examples of the ways living organisms depend on each other and on their environments.	LCB: L-2; L-10 S: L-2; L-13	15-9; 68-70 33-5; 140-3; 146-9	Food for caterpillars. Food for butterflies. Earthworms and decomposition.
(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	C: L-2; L-3	37-9; 47-9; 51-4	Melting, evaporation, and condensation.
(B) identify uses of natural resources.	LCB: Appendix B S: L-9; L-10; L-16	101-4 103-6; 114-6; 175-7	Silk-making. Plant growth and soil.

**Correlation to Texas Essential Knowledge and Skills
Science, Grade 3
(English and Spanish)**

Any STC unit may be used one grade level above or below that for which it was designed. To see how a unit might correlate to the TEKS at the next higher or lower grade level, view the correlation at that grade level as well.

Publisher: Carolina Biological Supply Company
Program Title: Science and Technology for Children™

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	PGD: Teaching Strategies and Classroom Management Tips RM: Teaching <i>Rocks and Minerals</i> ; L-4; L-10; L-12 CT: Teaching <i>Chemical Tests</i> ; L-1; L-2; L-8; L-10; L-15 So: Teaching <i>Sound</i> ; L-1; L-6	5-6 7-8; 40; 85; 100 8; 17; 21; 29; 94; 110 6; 17; 51	Standard safe practices with equipment, handling of copper sulfate squares, flowering plants produce pollen, a possible allergen. Safe practice in handling galena and common nails. Adult-supervised activity—growing salt crystals. Standard safe practices. Do not use sense of taste with this unit. Wear safety goggles as needed. Handling talc. Handling iodine. Heat test safety requirements. Safety procedures for handling chemicals. Standard safe practices. Review safety rules. Safe practice to prevent spread of germs.
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	RM: L-3; L-16 CT: L-2 through L-10; L-13 through L-16	31-6; 125-6 27-35; 129-167	Rocks and minerals are resources for common uses in our everyday lives. Developing proper lab techniques to ensure safety and avoid contamination.
(3.2) Scientific processes. The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;	PGD: L-7; L-16 Extensions RM: L-6; Additional Assessments, Assessment 2 CT: L-11; L-16 So: L-15; L-16	45-7; 100 55-61; 146 115-9; 121-4; 163-7 113-6; 123-6	Applying observation and prediction skills to analyze outcomes of growth spurts with plants using appropriate equipment. Applying knowledge to compare rocks and minerals. Testing minerals. Applying skills/knowledge to test, predict, analyze, and report through testing and summary of test results. Reflecting, sharing, and applying knowledge about sound to construct, test, and report on instruments made.
(B) collect information by observing and measuring;	PGD: L-1; L-2; L-3; L-5; L-6; L-7; L-9; L-10; L-12 RM: L-2; L-3; L-4; L-5; L-6; L-7; L-8; L-9 CT: L-1 through L-10; Appendix E So: L-1 through L-9	9-13; 15-7; 19-24; 35-7; 39-42; 45-7; 53-6; 59-62; 71-3 25-7; 31-4; 39-44; 47-52; 55-9; 63-5; 69-72; 75-6 17; 27; 37; 49; 59; 71; 83; 93; 99; 107; 205 13; 21; 27; 33; 43; 59; 67; 77	Observation and measurement of a plant life cycle. Using the senses to observe and describe rocks and minerals. Observing and describing by testing unknown solids, solids and water, mixtures, solids with chemicals and solids with heat. Objects have many observable properties by sight, touch, and hearing. Some include size, shape, and the ability to react with others. Properties such as pitch, tone, and tension can be measured using simple instruments, such as a hand lens, ruler, straw, or with string and cup.
(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;	PGD: L-7; L-15 RM: L-5 through L-10 CT: L-2 through L-10 So: L-1 through L-14	45-7; 93-5 47-84 17-163 13-111	Students graph plant height to create reasonable explanations in the plant growth cycle. Comparison of growth patterns. Students record and discuss observations after testing and comparisons of color, luster, hardness, opacity of minerals. Analyzing and drawing conclusions from a range of test results to define properties of powders and household chemicals. Students investigate and validate basic principles of how sound is produced through a variety of methods beginning with tuning forks and how sound travels through a variety of objects.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(D) communicate valid conclusions; and	PGD: L-1 through L-16 RM: L-5 through L-10 CT: L-2 through L-13 So: L-2 through L-15	9-101 47-84 27; 37; 49; 59; 71; 83; 93; 99; 121; 129 21-3; 27-30; 33-7; 43-6; 49-52; 59-61; 67-71; 77-81; 83-5; 105-9	Predicting and communicating results and reflecting on experiences through writing, drawing, and discussion. Testing, recording, and discussing observations of rocks and minerals. Predicting and communicating valid results after testing unknown solids with liquids. Creating sound models with nails, rulers, a straw reed whistle, slide whistle, and the eardrum, to clarify and validate how sound is produced by vibrating objects.
(E) construct simple graphs, tables, maps, and charts to organize, examine and evaluate information.	PGD: L-1; L-7; L-15 RM: L-1; L-4; L-5; L-6; L-10, L-13, L-15 CT: L-3; L-4; L-5; L-6; So: L-1; L-3; L-4; L-5; L-6; L-15	14; 45-7; 93-5 22; 42; 45; 51; 84; 89; 105; 115 40; 42; 51; 57; 62; 73; 95 15; 36; 40; 46; 56; 117	Charting ideas. Creating graphs from observations of growth spurts and growth patterns. Interpreting graphing results. Brainstorming chart. Venn diagrams and record sheets to organize data to compare similarities/differences of rocks and minerals. Simple tables and graphs are created when testing unknown solids with liquids/chemicals to review evidence and to formulate conclusions about the unknown solids. Charts, tables, and graphs are used to record and measure pitch, vibration, using a variety of sound-producing equipment to plan and create a musical instrument.
(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;	PGD: L-3 through L-7 CT: L-16 So: L-16	19-48 163-7 123-6	Predicting, charting, and critiquing the growth of Wisconsin Fast Plants™ until the point of the growth spurt of this seed-to-seed plant within a 42-day life cycle. Using predictions and exploration, lesson assesses what the student has learned through the application of skills and the understanding of concepts included in the unit. Students reflect on skills/knowledge learned in previous lessons to build, test, and improve a sound-producing instrument/device.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(B) draw inferences based on information related to promotional materials for products and services;			
(C) represent the natural world using models and identify their limitations;	PGD: L-9; L-13 RM: L-12; L-16 CT: L-1 through L-16 So: L-8	53-62; 75-82; 83-92 100; 125-6 17-167 67-72	A bee model for pollination, <i>Brassica</i> plant model. These activities draw on what students have learned about bees and plants through observation and using them as tools for pollination. Growing Salt Crystals model. Rock and mineral samples of natural formations and current common uses are addressed in this unit. Lesson activities model a process to test unknown solids in a controlled environment. Constructing a model eardrum helps students discover a related aspect of sound. Vibrations in the air in turn can cause objects they strike to vibrate.
(D) evaluate the impact of research on scientific thought, society, and the environment; and	RM: L-11 Reading Selection CT: L-12 Reading Selection	94-5 125	Students learn about the development of the magnetic compass and its historical importance to society. Development and use of chemicals in everyday society.
(E) connect Grade 3 science concepts with the history of science and contributions of scientists.	PGD: L-3 Reading Selection RM: L-3, L-8, L-9, and L-12 Reading Selections CT: L-6 and L-15 Reading Selections So: L-4 Reading Selection	25 35; 73; 79; 101 76-7; 158 38-9	Development of the Wisconsin Fast Plant™ by Dr. Paul Williams. Historical background information on various rocks and minerals. Historical information on crystals, scientists Roger Bacon and Robert Boyle. Research on sound by Katharine Payne. [All units contain background information on each topic, which may be shared with students.]
(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:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) collect and analyze information using tools including calculators, microscopes, cameras, safety goggles, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, magnets, and compasses; and	PGD: L-1; L-2; L-3; L-4; L-6; L-9; L-10; L-11; L-12 RM: L-1 through L-16 CT: L-1 through L-9; L-13 through L-15 So: L-1; L-2; L-5; L-6	9; 15; 19; 31; 35; 39; 65; 71 18; 26; 32; 41; 48; 56; 83; 91; 98 9; 28; 38; 49; 61; 93; 96; 108; 130; 139; 164 16; 23; 44; 50	Hand lenses, forceps, rulers. Hand lenses, magnets, streak plates. Safety goggles, hand lenses, microscopes, graduated cylinders. Tuning forks, ruler-centimeter scale, meter sticks. [For all units: computers can be used to collect and analyze information, create tables, and write reports of investigations, but specific directions for computer use are not included. Other tools not included in directions: calculators and compasses to collect and analyze information; microscopes to analyze information.]
(B) demonstrate that repeated investigations may increase the reliability of results.	PGD: L-1 through L-16 RM: L-1 through L-16 CT: L-1 through L-16 So: L-1 through L-16	9-99 15-125 17-163 13-123	All units: Investigating properties through repeated testing supports the conclusions drawn in group settings and allows the learner to apply these supported conclusions to new investigations.
(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	PGD: L-1 through L-5	9-42	What's inside a seed. Observing characteristics of seeds and plants.
(B) observe a simple system and describe the role of various parts such as a yo-yo and string.	So: L-7; L-9	59-66; 77-81	Students make, observe, and describe straw reed instruments, and make observations about creating sound with a string and cup.
(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	So: L-4	33-5	Plucking ruler to see and measure vibrations.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(B) identify that the surface of the Earth can be changed by forces such as earthquakes and glaciers.	RM: L-3	31-2; 35-6	Heat or pressure can be violent and dramatic, as in volcanic eruptions and earthquakes, and can create changes in rocks.
(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	RM: L-1 through L-16	15-125	Students perform tests on rocks and minerals (e.g., streak, transparency, luster, etc.) using appropriate tools and interpret the results.
(B) identify matter as liquids, solids, and gases.	CT: L-1 through L-16	17-167	Through investigations of solids and liquids including a heat test, students define properties to analyze and draw conclusions from the results.
(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;	E: L-1 through L-16	27-195	[<i>Ecosystems</i> was developed for 5th grade but can be used at 4th and 6th grades, and with teacher adaptation at 3rd grade.] Students create a miniature ecosystem and observe and describe the organisms in it and their habitat throughout the unit.
(B) observe and identify organisms with similar needs that compete with one another for resources such as oxygen, water, food, or space;	E: L-1 through L-16	27-195	[<i>Ecosystems</i> was developed for 5th grade but can be used at 4th and 6th grades, and with teacher adaptation at 3rd grade.] Students make observations about organisms and their competition for resources by studying their miniature ecosystem, through reading selections, and in-class discussion.
(C) describe environmental changes in which some organisms would thrive, become ill, or perish; and	E: L-1 through L-16	27-195	[<i>Ecosystems</i> was developed for 5th grade but can be used at 4th and 6th grades, and with teacher adaptation at 3rd grade.] Students observe, describe, discuss, and draw conclusions about environmental changes based on in-class pollution experiments and reading selections.
(D) describe how living organisms modify their physical environment to meet their needs such as beavers building a dam or humans building a home.	E: L-1 through L-16	27-195	[<i>Ecosystems</i> was developed for 5th grade but can be used at 4th and 6th grades, and with teacher adaptation at 3rd grade.] Reading selections and lesson activities provide information about how humans have modified their physical environment, which has caused changes to various ecosystems.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	PGD: L-9 through L-12	59-68	Characteristics of honeybees and <i>Brassica</i> .
(B) analyze how adaptive characteristics help individuals within a species to survive and reproduce.	PGD: L-9; L-11	53-56; 68	Honeybees, interdependence of <i>Brassica</i> and bees.
(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	PGD: L-1 through L-16	9-99	Investigated throughout the unit.
(B) identify some inherited traits of animals.	PGD: L-9	53-56	Traits of honeybees are identified.
(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;	PGD: L-3 RM: L-1 through L-16	19-25 15-125	Soil and water components. Senses are used to observe and describe rocks and minerals. Properties of rocks reflect the way they were formed and the minerals in them. The properties determine how they are used.
(B) identify and record properties of soils such as color and texture, capacity to retain water, and ability to support the growth of plants;	PGD: L-3	19-25	Soil support for plant growth. [See also S for grade 2.]
(C) identify the planets in our solar system and their position in relation to the Sun; and			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(D) describe the characteristics of the Sun.			

**Correlation to Texas Essential Knowledge and Skills
Science, Grade 4
(English and Spanish)**

Any STC unit may be used one grade level above or below that for which it was designed. To see how a unit might correlate to the TEKS at the next higher or lower level, view the correlation at that grade level as well.

Publisher: Carolina Biological Supply Company
Program Title: Science and Technology for Children™

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	AS: Teaching <i>Animal Studies</i> LW: Important Information on Materials EC: L-2; L-7; L-8 MD: Teaching <i>Motion and Design</i>	9-10 8 15; 47; 50 8	Do not taste materials in science class, etc. Use of diatomaceous earth. Electrical safety, etc. Use of safety goggles.
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	AS: Appendix A LW: L-9; L-12; L-14; L-15; L-16 EC: L-15; L-16 MD: L-5; L-13 through L-16	216 87-9; 149-55; 173; 184; 192-3 83; 86 65-6; 134-6; 143-52; 157-8; 162-4	Not to release animals into the wild. Water supplies. Dams and their uses. Plants and erosion control. Planning for land use. Use and control of electricity in a home. Designing to meet specifications. Cost analysis.
(4.2) Scientific processes. The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) plan and implement descriptive investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;	AS: L-10; L-12; L-16 LW: L-12; L-15; L-16 EC: L-15; L-16 MD: L-14; L-15; L-16	123-6; 140-7; 158-68; 180-1 149-55; 184; 192-3 83; 86-7 134-6; 143-52; 157-8; 162-4	Investigations into animal behavior. Uses of dams. Planning land use. Designing complex circuits to meet specifications. Designing a vehicle to meet specifications.
(B) collect information by observing and measuring;	AS: L-4; L-6; L-7; L-9; L-10; L-11; L-13 LW: L-2 through L-14 EC: L-2 through L-14 MD: L-3 through L-12	53-8; 81-2; 91; 112-5; 123; 130-2; 140-2; 150-2 29-179 11-79 41-129	Studies of animal behavior. Interactions of land and water. Components, designs of, and functions of electric circuits. Studies of motion and ways to produce and oppose motion.
(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;	AS: L-10; L-11; L-13; L-14; L-16 LW: L-2 through L-14 EC: L-2 through L-12; L-14 MD: L-3 through L-11	123-6; 130-5; 141-7; 150-4; 158-63; 180-1 29-179 11-72; 79 41-131	Studies of animal behavior. Analysis and interpretation of interactions of land and water. Operation of electrical devices and design of circuits Force and its effects on motion
(D) communicate valid conclusions; and	AS: L-10; L-11; L-14; L-16 LW: L-16 EC: L-7 MD: L-16	123; 131-2; 158; 180 193 45-6 162-4	Reports and discussions of investigations. Discussion of results of testing landscape designs. Characteristics of conductors and insulators. Summation of knowledge of motion and forces. [Student communication is a part of each STC lesson. It is usually included in the Final Activities section of the lesson.]

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(E) construct simple graphs, tables, maps, and charts to organize, examine, and evaluate information.	AS: L-4; L-5; L-6; L-9; L-11; L-12; L-13; L-14 LW: L-2; L-4; L-5; L-8; L-9; L-11 EC: L-10 through L-16 MD: L-2; L-4; L-5; L-7; L-10; L-13; L-14	59; 69-70; 84; 117; 134-5; 141; 154; 161-3; 44; 64-5; 77; 107; 119; 140 57-87 33; 61, 66; 85; 111; 123; 138; 143-4	Observations of animals and habitats chart. Data charts and aerial drawings. Students learn to construct circuit diagrams. Line plots, data tables, and technical drawings.
(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;	AS: L-10; L-14 LW: L-16 EC: L-11 MD: L-4	123; 158 193 66-7 56	Students analyze their studies of animals. Students critique their landscape designs. Students give explanations for the operation of parallel and series circuits. Force vs. mass.
(B) draw inferences based on information related to promotional materials for products and services;	E: L-8 through L-16 FC: L-1 through L-16	110-192 15-166	Researching, reporting, and experimenting with pollutants. Reviewing real life pollution problems and role playing to determine possible solutions. Investigating nutrients in foods.
(C) represent the natural world using models and identify their limitations;	AS: L-3; L-5; L-8 LW: L-2 through L-4; L-6 through L-16 EC: L-8; L-13; L-15; L-16 MD: L-1 through L-16	47-8; 73-4; 106-7 29-64; 81-193 50-1; 74; 82-3; 86 19-172	Aquaria and terraria are used to model natural habitats. Stream tables are used to model the interactions of land and water. Nichrome wire is used to model a light-bulb filament. Students make a model flashlight. Students wire a model house. Students build model wheeled vehicles and use them to discover facts about force, motion, and mass.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(D) evaluate the impact of research on scientific thought, society, and the environment; and	AS: DD LW: L-14; L-15; L-16; DD EC: DD MD: DD	3; 5; 12; 19; 23; 28 171-3; 184-5; 192-3; 25 5; 7; 23; 25; 26; 27 3; 6; 7; 12; 15; 18; 22; 23; 29; 30	Various researchers, their work, and its impact. Land use. Origins of geology. Aspects of science and technology. Scientific knowledge and its applications.
(E) connect Grade 4 science concepts with the history of science and contributions of scientists.	AS: DD LW: DD EC: DD MD: DD	3; 5; 6; 12; 19; 23; 28 5; 11; 13; 25 5, 7, 8, 9; 26; 27 1; 2; 3; 4; 7; 15; 24; 30	Scientists and their work. Scientists and their work. Scientists and their work. Scientists and their work.
(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	AS: L-3 through L-9; L-12; L-13; Bibliography LW: L-4; L-5; L-6; L-10; L-13 EC: L-13 MD: L-2; L-4 through L-16 FS: L-3	39; 44; 52; 55; 67; 80; 90; 105; 112; 142; 143; 150; 211 65; 71; 83 74 32; 54; 64; 74; 82; 90; 98; 108; 119; 126; 134; 143; 156; 162 33	Hand lenses, thermometers, sound recorders, cameras, computers. Hand lenses, rulers. [Microscopes can be used to observe soil particles. Compasses can be used to determine magnetic north.] Cameras. Rulers, timers (stopwatch), metric tapes, safety goggles, calculators. [Balances can be used to weigh blocks and washers.] Balances.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(B) demonstrate that repeated investigations may increase the reliability of results.	AS: L-2 through L-15 LW: L-2 through L-16 EC: L-1 through L-14 MD: L-3 through L-12	35-6; 51; 60; 73-4; 85; 96; 108-9; 119; 129 140; 150; 164; 173; 184 7-79 41-128	Addressed by having student work groups compare their observations and data. This is usually done in the Final Activities section of each lesson.
(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	AS: complete unit LW: complete unit EC: complete unit MD: complete unit	17-185 21-198 7-87 19-172	This standard is developed throughout the study of the units and is not localized to a particular page or pages in a unit.
(B) predict and draw conclusions about what happens when part of a system is removed.	AS: L-11; L-12; L-16 LW: L-14 EC: L-6 MD: L-13	130-1; 141; 180-1 177 39-40 134	Analyze an animal's needs in relationship to its habitat. Make a change to the habitat. Effects on erosion when plants are removed. Troubleshooting a circuit. Determine the minimum parts required for a system to operate. [Most STC lessons involve adding something to a system and observing the change produced.]
(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;	AS: L-7 LW: L-2 through L-4; L-6 through L-16	94-5 29-64; 81-193	Life cycles. Change in landforms.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	EC: L-3 MD: L-2; L-11	22 34-5; 121-2	Rotation does not change an electric circuit. Interpretation of a technical drawing.
(C) use reflections to verify that a natural object has symmetry.			
(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	LW: L-2	31	Evaporation and condensation in relation to the water cycle.
(B) conduct tests, compare data, and draw conclusions about physical properties of matter including states of matter, conduction, density, and buoyancy.	EC: L-7 MD: L-3; L-4	45-6 47-8; 54-6	Electrical conductors and insulators. Inertia, mass, and force.
(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;	AS: L-3 through L-14	51-163	Observations of animals, parts of animals and their functions. Animals' needs and animals' habitats.
(B) compare adaptive characteristics of various species; and	AS: L-3 through L-14	51-163	Observations of animals, parts of animals and their functions. Animals' needs and animals' habitats.
(C) identify the kinds of species that lived in the past and compare them to existing species.			
(4.9) Science concepts. The student knows that many likenesses between offspring and parents are inherited or learned. The student is expected to:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) distinguish between inherited traits and learned characteristics; and	AS: L-10	123-4	Inherited vs. learned behavior.
(B) identify and provide examples of inherited traits and learned characteristics.	AS: L-10	123-4	Inherited vs. learned behavior.
(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	LW: complete unit	21-184	Erosion, weathering, dissolving, flow. [See PGD at grade 3 for growth.]
(B) draw conclusions about “what happened before” using fossils or charts and tables.	LW: L-1; L-8	24; 109	Students interpret photographs of landscape features.
(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;	LW: L-5; L-6	72-74; 84-9	Texture, capacity to retain water. [See S at grade 2 for ability to support life.]
(B) summarize the effects of the oceans on land; and	LW: L-2	31	Water cycle.
(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.	LW: L-2	31	Water cycle. [See also PGD at grade 3 and E at grade 5.]

**Correlation to Texas Essential Knowledge and Skills
Science, Grade 5
(English and Spanish)**

Any STC unit may be used one grade level above or below that for which it was designed. To see how a unit might correlate to the TEKS at the next higher or lower level, view the correlation at that that grade level as well.

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Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	Mw: L-11; L-15; L-16 E: Appendix A; Appendix C FC: Teaching <i>Food Chemistry</i> ; L-4; L-7; L-10; L-13 FS: L-12; L-13; L-15; L-16 EP: Teaching Strategies and Classroom Management Tips MT: Teaching <i>Measuring Time</i> MM: Teaching Strategies and Classroom Management Tips TP: Teaching <i>The Technology of Paper</i>	70; 88; 91 216; 223 6; 56; 85; 111; 133 110; 115; 116; 134; 142 5-6 6 8 8	Washing hands to avoid eye irritation and ingestion of bacteria. Advisory on releasing organisms. Cleaning bottles to maintain safe environment for organisms. Basic material safety information. Safety practices to eliminate test food contamination. Selecting materials for extension activity. Warning about prolonged saltwater contact with skin. Selecting materials for extension activities. General science class safety instructions. General science class safety instructions. Electrical safety. General science class safety instructions.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	E: Appendix A; Appendix C EP: DD TP: L-2; L-6; L-8; L-10	216; 223 22 41-6; 91-5; 117-9; 143-6	Advisory on releasing organisms. Using bottles for habitats. Restoration of resources. Recycling paper.
(5.2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:			
(A) plan and implement descriptive and simple experimental investigations including asking well-defined questions, formulating testable hypotheses, and selecting and using equipment and technology;	Mw: L-3 through L-16 E: L-1 through L-13 FC: L-2 through L-14 FS: L-1 through L-16 EP: L-1 through L-15 MT: L-8; L-11 MM: L-9; L-10 TP: L-15; L-16	21-91 27-154 23-141 13-144 9-117 77-84; 97-105 57-65; 67-9 185-95; 197-204	Making and testing predictions. Using appropriate equipment and techniques to prepare microscope slides for viewing. Using magnifiers to observe living and nonliving specimens. Making and testing predictions. Using equipment appropriately. Using equipment and techniques to perform investigations. Predicting the nutrient content of foods. Applying previous experiences to make predictions. Students design and conduct experiments on plant growth and seed germination. Experiments with water clocks and pendulums. Experiments with an electromagnet. Designing to specifications.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(B) collect information by observing and measuring;	Mw: L-1 through L-16	9-91	Observing specimens and communicating observations through writing, drawing, and discussion.
	E: L-2 through L-13	37-154	Observing organisms and habitats and communicating observations through writing, drawing, and discussion.
	FC: L-2 through L-16	23-166	Conducting, recording, and organizing observations and test results.
	FS: L-1 through L-16	13-144	Measuring force with spring scales.
	EP: L-3; L-12; L-14	36-7; 95, 100; 109, 113	Students make daily records of observations and measurements.
	MT: L-2; L-3; L-5; L-9; L-10; L-11; L-12; L-15	24; 26; 32-4; 54; 89-90; 97-8; 110-2; 116-7; 140-1	Students record moving sun shadows, observe lunar phases, etc.
	MM: L-4; L-7; L-9; L-10; L-12; L-13; L-14; L-15; L-16	21-4; 45; 50-5; 57-65; 67-9; 78-9; 84-5; 91-2; 97-8; 100-2	Students measure the strength of magnet combinations, observe characteristics of an electric circuit, test the strength of an electromagnet, observe the inner workings of an electric motor.
TP: L-2; L-3; L-4	38-40; 52-3; 56-8; 64-73	Students use magnifying devices to observe various types of paper and test their properties.	

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence;	Mw: L-2; L-3; L-6; L-7; L-8; L-9; L-11	17; 23; 38-40; 44-6; 51-3; 55-9; 70	Interpreting observations to identify specimens. Characteristics of a magnifier. How magnification changes what we see. Cells as building blocks.
	E: L-10 through L-16	123-92	Analyzing information to suggest solutions to a problem.
	FC: L-4; L-5; L-7; L-8; L-10; L-11; L-13; L-14; L-16	51-9; 61-7; 81-8; 91-5; 107-11; 113-7; 129-34; 137-41; 161-6	Interpreting test results to draw conclusions.
	FS: L-3; L-5; L-7; L-8; L-11; L-12; L-14; L-16	31-8; 49-56; 65-8; 71-7; 97-103; 105-11; 123-6; 139-44	Creating and analyzing graphs. Interpreting data to solve problems.
	EP: L-9; L-10; L-13; L-15	76-9; 82-3; 102-3; 116-7	Students analyze data from experiments.
	MT: L-8; L-11	77-84; 97-105	Students analyze data from experiments.
	MM: L-4; L-7; L-9; L-10; L-12; L-13; L-14; L-15; L-16	21-4; 45; 50-5; 57-65; 67-9; 78-9; 84-5; 91-2; 97-8; 100-2	Magnetism and its effects. Relationship of magnetism to electricity. How to use magnetism to produce movement.
	TP: L-5	78-9	Properties of papers vs. intended uses.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(D) communicate valid conclusions; and	Mw: L-3; L-6; L-7; L-8; L-9; L-11	22-3; 39; 45; 53; 58; 70	Analyzing information to suggest solutions to a problem.
	E: L-10 through L-16	123-92	Communicating results and applying learned concepts and skills to solve problems.
	FC: L-3 through L-16	35-166	Communicating results and using concepts and skills previously learned to solve problems.
	FS: L-1 through L-16	13-144	Results of experiments.
	EP: L-11; L-13; L-15	86; 102-3; 116-7	Results of experiments.
	MT: L-2; L-3; L-5; L-9; L-10; L-11; L-12; L-15	24; 26; 32-4; 54; 89-90; 97-8; 110-2; 116-7; 140-1	Identify constant changes, patterns of change, etc.
	MM: L-11	71-4	Students communicate the results of their experiments.
	TP: L-5; L-17	78-9; 207-10	Analysis of properties of papers tested and made.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(E) construct simple graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate information.	Mw: L-2; L-3 E: L-2; L-3; L-4; L-6; L-11; L-12 FC: L-1 through L-4; L-6 through L-16 FS: L-3; L-5; L-11; L-12; L-14 EP: L-9; L-10; L-12; L-14 MT: L-3; L-4; L-5; L-8; L-9; L-10; L-12; L-15 MM: L-4; L-9 TP: L-2; L-3; L-4; L-5	17-20; 25 46; 59; 73-4; 95-6; 139; 146-7 21; 32; 48-9; 58-9; 77-8; 87-8; 93; 99-102; 108-9; 114; 122-5; 131-2; 138-9; 149; 163-5 36-8; 51; 55-6; 102-3; 111; 126 79; 81-2; 100; 113 32; 44-5; 56-7; 78-80; 90; 98-101; 116; 140 24; 61 39-40; 53; 58; 70-2; 80	Using and creating tables to organize observations and test results. Using and creating tables to organize observations and test results. Using and creating tables to organize observations and test results. Creating and analyzing graphs. Data sheets and presentation charts for student experiments. Charts, graphs, etc. Data tables. Graphs and tables.
(5.3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	Mw: L-3; L-12; L-13; L-14; L-15 E: L-1 through L-13 FC: L-2 through L-14; L-16 FS: L-1 through L-16 EP: L-9; L-10; L-11; L-13; L-15 MT: L-8; L-11 MM: L-9; L-10	21-5; 73-6; 77-80; 81-4; 85-8 27-154 23-139; 161-5 13-144 36-7; 86; 95, 100; 109, 113 77-84; 97-105 57-65; 67-9	Making and testing predictions. Making and testing predictions. Predicting, conducting investigations, and interpreting data on the nutrient content of foods. Applying previous experiences to make and test predictions. Students analyze, review, and critique their experiments. Analysis and critique of experiments. Students analyze and critique their experiments.
(B) draw inferences based on information related to promotional materials for products and services;	E: L-8 through L-16 FC: L-1 through L-16 TP: L-5	110-192 15-166 79	Researching, reporting, and experimenting with pollutants. Reviewing real life pollution problems and role playing to determine possible solutions. Investigating nutrients in foods. Students analyze results of tests on various papers and decide if the paper's properties suit the intended uses.
(C) represent the natural world using models and identify their limitations;	Mw: L-8 through L-16 E: L-1 through L-16 FS: L-1 through L-16 MT: L-6	49-91 27-192 13-144 62-3	Making sketches of specimens being observed. Investigating, analyzing, and experimenting with ecosystems through models and role playing. Investigating buoyancy of materials and applying information to real world situations. Modeling moon phases.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(D) evaluate the impact of research on scientific thought, society, and the environment; and	Mw: L-5; L-6; L-12; L-13; L-14; DD E: L-8 through L-16 FC: L-5; L-8; L-11; L-14; L-15; DD FS: L-8; L-10; L-15; DD MT: DD MM: DD	32; 38-41; 73-4; 77-8; 81-2; 1-30 110-192 61-7; 91-5; 113-7; 137-41; 143-59; 1-30 75-6; 94-5; 135-6; 1-30 7; 14; 15 7; 8; 13; 14; 20; 22; 24	Reading selections on scientific inventions and knowledge relevant to student investigations. Researching and reporting on pollutants and role playing to determine possible solutions to real life pollution problems. Reading selections containing information on food nutrients. Reading selections containing knowledge relevant to student investigations. Reading selections containing knowledge relevant to student investigations. Development and applications of scientific knowledge.
(E) connect Grade 5 science concepts with the history of science and contributions of scientists.	Mw: L-5; L-11 through L-14; Appendix D; DD E: L 8-16 FC: L-5; L-8; L-11; L-14; L-15; DD FS: L-8; L-10; L-15; DD EP: DD MT: L-2; L-4; L-7; L-12; DD MM: L-9; DD TP: DD	32; 70-4; 77-8; 81-2; 122; 1-30 110-192 61-7; 91-5; 113-7; 137-41; 143-59; 1-30 71-7; 89-95; 129-36; 1-30 1; 4; 10; 12; 14; 15; 20; 22 27-8; 46-7; 71; 119; 5; 6; 7; 8; 11; 13; 14; 15; 19; 22; 27 63; 7; 8; 13; 14; 20; 22; 24 2; 3; 4; 5; 15; 20; 26	Reading selections on scientific inventions and knowledge relevant to student investigations. Researching and reporting on pollutants and real life pollution problems. Reading selections containing information on food nutrients. Reading selections containing knowledge relevant to student investigations. Researchers and their work. Development of timekeeping in various cultures. Modern discoveries. Connections to applied science (technology). Connections to applied science (technology).

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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 sticks, timing devices, magnets, collecting nets, and safety goggles; and	MD: L-6 through L-13 Mw: L-1 through L-16; DD E: L-2 through L-12; L-15 FC: L-2; L-3; L-4; L-6; L-7; L-9 through L-13; L-16 FS: L-3; L-4 through L-6; L-9 through L-13; L-16 EP: L-5; L-6; L-7; L-12; L-14 MT: L-7; L-9; L-10; L-11; L-12; L-13; L-15; L-16 MM: L-1 through L-16 TP: L-2; L-3; L-4; L-6; L-7; L-9; L-10; L-11; L-13	73-138 9-92; 2; 12; 19; 28; 30 37-147; 171 23-59; 69-78; 81-8; 97-134; 161-6 33; 41-62; 79-120; 139-44 52; 59; 66; 93; 106 68; 88; 96-7; 110; 116; 135; 140-1; 145 7-102 32; 51; 63; 95; 109; 130; 138; 151; 166	Safety goggles. Using magnifiers, including hand lenses and microscopes, to observe living and nonliving specimens. Using appropriate equipment to prepare microscope slides for viewing. Using hand lens, pH paper, measuring devices; dip nets; camera and sound recorder. Using appropriate tools to test the nutrients in foods. Balances; calibrating a spring scale and use it to measure the magnitude of force. Hand lens, thermometer, rulers (for measuring plant growth), and protractors. Clock, metric tape, protractor, calculator. Magnets, compasses. Hand lens, microscope, ruler. [For all units: computers can be used to collect and analyze data, create tables, and write reports of investigations, but specific directions for computer use are not included. Hot plates are not used to collect information; cameras and hot plates are not used to analyze information.]

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(B) demonstrate that repeated investigations may increase the reliability of results.	Mw: L-1; L-15 through L-16 E: L-8; L-10 through L-14 FC: L-3 through L-16 FS: L-2 through L-16 EP: L-12; L-15 MT: L-8; L-10 MM: L-11 TP: L-5	11-12; 85-92 107-11; 123-66 35-166 23-144 94; 116 80-1; 98-101 74 75, 78-9	Viewing hay infusions for organisms previously studied. Recognizing the importance of repeating a test or measurement and comparing the results. Recognizing the importance of repeating a test or measurement and comparing the results. Recognizing the importance of repeating a test or measurement and comparing the results. Students discover this through their own investigations and critiques. Students repeat experimental tests and determine an “average” using either the mode, median, or mean. Variation in results and the need to repeat experimental tests. Students pool their results to obtain a more accurate table of paper properties.
(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:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) describe some cycles, structures, and processes that are found in a simple system; and	Mw: L-5; L-11 through L-16 E: L-1 through L-16 FC: L-1; L-2; L-5; L-8; L-11; L-14; L-16 FS: L-4; L-5; L-6; L-9 through L-13; L-16 EP: L-2; L-3 MT: L5; L-6 MM: L-3; L-6; L-8; L-12; L-13; L-15	31-5; 67-92 27-192 15-32; 61-7; 91-5; 113-7; 137-41; 161-6 41-62; 79-120; 139-44 25-7; 34-5 49-50; 59-61 18; 38; 51; 78-9; 84; 97-8	Investigating the workings of microscopes and microscopic organisms. Investigating ecosystems. Investigating the relationship of nutrients to human health. Investigating the workings of a spring scale in measuring force. Life cycle of Wisconsin Fast Plants™. Possible independent and dependent variables in plant growth. Lunar phases. Structures and processes involving magnetism.
(B) describe some interactions that occur in a simple system.	Mw: L-5; L-11 through L-16 E: L-1 through L-16 FC: L-1; L-2; L-5; L-8; L-11; L-14; L-16 FS: L-4; L-5; L-6; L-9 through L-13; L-16 EP: L-3 MT: L-8; L-9; L-10; L-11 MM: L-3; L-6; L-8; L-12; L-13; L-15	31-35; 67-92 27-192 15-32; 61-7; 91-5; 113-7; 137-41; 161-6 41-62; 79-120; 139-44 34-5 77-81; 88-90; 97-101; 110-2 18; 38; 51; 78-9; 84; 98	Investigating the workings of microscopes and microscopic organisms. Investigating ecosystems. Investigating the relationship of nutrients to human health. Investigating the workings of a spring scale in measuring force. Variables and possible outcomes in different aspects of plant growth. Variables in simple systems. Magnetic interactions.
(5.6) Science concepts. The student knows that some change occurs in cycles. The student is expected to:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) identify events and describe changes that occur on a regular basis such as in daily, weekly, lunar, and seasonal cycles;	Mw: L-12 through L-16 E: L-1 through L-14 EP: L-2 MT: L-2; L-4; L-5	73-92 27-166 25-7 21-6; 43-5; 49-54	Observing life cycles of organisms. Observing life cycles of organisms in ecosystems. Life cycle of Wisconsin Fast Plants™. Daily, weekly, lunar cycles.
(B) identify the significance of the water, carbon, and nitrogen cycles; and	E: L-1 through L-14	27-166	Investigating components of ecosystems.
(C) describe and compare life cycles of plants and animals.	Mw: L-15; L-16 E: L-1 through L-14 EP: L-2	85-8; 89-90 27-166 25-7	Microbes in a hay infusion. Observing life cycles of organisms in ecosystems. Life cycle of Wisconsin Fast Plants™.
(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;	FS: L-1 through L-16 MM: L-3 TP: L-2; L-3; L-4	13-144 16-8 38-40; 52-3, 56-8; 64-73	Investigating buoyancy of objects. Magnetism. Properties of papers. [Ability to conduct or insulate heat and sound not addressed.]
(B) demonstrate that some mixtures maintain the physical properties of their ingredients;	FC: L-3 through L-15	35-159	Investigating nutrients in foods.
(C) identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving sugar in water; and	E: L-8 through L-16 FC: L-3; L-4; L-6; L-7; L-9; L-12; L-13; L-16 FS: L-13 through L-16	107-192 35-59; 69-88; 97-104; 119-34; 161-6 113-44	Interaction of pollutants in ecosystems. Using solutions to investigate nutrients in foods. Investigating properties of saltwater.
(D) observe and measure characteristic properties of substances that remain constant such as boiling points and melting points.	FS: L-4 through L-8; L-10 through L-14	41-77; 89-126	Observing and measuring the weight of objects.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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;	E: L-1 through L-14 FC: L-1; L-2; L-5; L-8; L-11; L-14; L-16	27-166 15-32; 61-7; 91-5; 113-7; 137-41; 161-6	Investigate factors affecting growth and reproduction of organisms in ecosystems. Discovering how nutrients are essential to human health.
(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;	Mw: L-1 through L-16; DD	9-92; 1; 3; 4	Exploring properties of magnifiers.
(C) demonstrate that electricity can flow in a circuit and can produce heat, light, sound, and magnetic effects; and	MM: L-7 through L-16; DD	43-102; 11; 12; 29	Investigating electrical circuits.
(D) verify that vibrating an object can produce sound.			
(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;	Mw: L-12 through L-16; DD E: L-1 through L-16	73-92; 7; 8; 9; 11; 21; 24; 25 27-192	Investigating organisms. Observing the interaction of organisms in an ecosystem.
(B) analyze and describe adaptive characteristics that result in an organism's unique niche in an ecosystem; and	Mw: L-12 through L-16; DD E: L-1 through L-16	73-92; 7; 8; 9; 11; 21; 24; 25 27-192	Investigating organisms. Observing the interaction of organisms in an ecosystem.
(C) predict some adaptive characteristics required for survival and reproduction by an organism in an ecosystem.	E: L-1 through L-16	27-192	Observing the interaction of organisms in an ecosystem.

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(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	Mw: L-12 through L-14 E: L-1 through L-7	73-84 27-104	Observing organisms. Observing organisms in ecosystems.
(B) give examples of learned characteristics that result from the influence of the environment.	E: L-1 through L-7	27-104	Observing organisms in ecosystems.
(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;	Mw: L-15; L-16 E: L-1 through L-14 FC: L-12; L-13 EP: L-2 MT: L-2; L-4; L-5	85-8; 89-90 27-166 119-134 25-7 21-6; 43-5; 49-54	Growth of microorganisms. Observing ecosystems. Observing change in protein test strips. Life cycle of Wisconsin Fast Plants™. Daily, weekly, lunar cycles.
(B) draw conclusions about “what happened before” using data such as from tree-growth rings and sedimentary rock sequences; and	MT: L-4	44-5	Calendars and past events.
(C) identify past events that led to the formation of the Earth’s renewable, non-renewable, and inexhaustible resources.	E: DD TP: DD	4; 18 16; 25	Forest resources of the tropics. Forest resources. [Formation of non-renewable and inexhaustible resources not addressed.]
(5.12) Science concepts. The student knows that the natural world includes earth materials and objects in the sky. The student is expected to:			

Proclamation 1997 Texas Essential Knowledge and Skills Element	Component Unit/Lesson/Section	Page Number(s)	Detail Information listed here should be directly related to the specific element.
(A) interpret how land forms are the result of a combination of constructive and destructive forces such as deposition of sediment and weathering;			
(B) describe processes responsible for the formation of coal, oil, gas, and minerals;			
(C) identify the physical characteristics of the Earth and compare them to the physical characteristics of the moon; and			
(D) identify gravity as the force that keeps planets in orbit around the Sun and the moon in orbit around the Earth.			