lead4ward

Process TEKS

Tools to Know | Ways to Show

Mathematics, Science and Social Studies Process Standards
Reading Comprehension Strategies

Tools to Know

Math	Science	Social Studies	Reading
Select Strategies to Solve Problems	Design and Conduct Investigations	Gather Information and Use Primary and Secondary Sources	Establish Purposes and Ask Questions
Use Mathematics in Everyday Situations	Use Lab Safety	Use Mathematics and Social Studies Terminology	Use Context
Use Mathematics Tools	Use Scientific Tools and Instruments	Locate Places of Significance	Monitor and Adjust Comprehension

Ways to Show

Math	Science	Social Studies	Reading
Make Generalizations, Conjectures and Justify Thinking	Collect, Record, and Analyze Information	Analyze and Interpret Information	Make Inferences
Communicate Mathematical Ideas	Use History of Science	Identify Context, Point of View, and Perspective	Retell, Summarize, Paraphrase, and Synthesize Texts
Relate Informal Language	Create Models	Create and Interpret Visuals and Organize Information	Make Connections

Math Process TEKS

TOOLS TO KNOW

	Use Mathematics in Everyday Situations	Select Strategies to Solve Problems	Use Mathematics Tools
K	K.13.A identify mathematics in everyday situations;	K.13.B solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness K.13.C select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem	K.13.D use tools such as real objects, manipulatives, and technology to solve problems.
1	1.11.A identify mathematics in everyday situations;	1.11.B solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; 1.11.C select or develop an appropriate problem-solving plan or strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem; and	1.11.D use tools such as real objects, manipulatives, and technology to solve problems.
2	2.12.A identify the mathematics in everyday situations;	2.12.Bsolve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; 2.12.Cselect or develop an appropriate problem-solving plan or strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem	2.12.D use tools such as real objects, manipulatives, and technology to solve problems.
3	3.14.A identify the mathematics in everyday situations	3.14.B solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness 3.14.C select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem	3.14.D use tools such as real objects, manipulatives, and technology to solve problems
4	4.14.A identify the mathematics in everyday situations	4.14.B solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness 4.14.C select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem	4.14.D use tools such as real objects, manipulatives, and technology to solve problems
5	5.14.A identify the mathematics in everyday situations	5.14.B solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness 5.14.C select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem	5.14.D use tools such as real objects, manipulatives, and technology to solve problems
6	6.11.A identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	6.11.B use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness 6.11.C select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem	6.11.D select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems
7	7.13.A identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	7.13.B use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness 7.13.C select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem	7.13.D select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems
8	8.14.A identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	8.14.B use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness 8.14.C select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem	8.14.D select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems
Alg I	Not identified in the TEKS		
Geom			
Alg II			

Math Process TEKS

WAYS TO SHOW

	Communicate Mathematical Ideas	Relate Informal Language	Make Generalizations, Conjectures and Justify Thinking
K	K.14.A communicate mathematical ideas using objects, words, pictures, numbers, and technology; and	K.14.B relate everyday language to mathematical language and symbols.	K.15 justify his or her thinking using objects, words, pictures, numbers, and technology.
1	1.12.A explain and record observations using objects, words, pictures, numbers, and technology; and	1.12.B relate informal language to mathematical language and symbols.	1.13 justify his or her thinking using objects, words, pictures, numbers, and technology.
2	2.13.A explain and record observations using objects, words, pictures, numbers, and technology; and	2.13.B relate informal language to mathematical language and symbols.	2.14 justify his or her thinking using objects, words, pictures, numbers, and technology.
3	3.15.A explain and record observations using objects, words, pictures, numbers, and technology	3.15.B relate informal language to mathematical language and symbols	3.16.A make generalizations from patterns or sets of examples and non-examples 3.16.B justify why an answer is reasonable and explain the solution process
4	4.15.A explain and record observations using objects, words, pictures, numbers, and technology	4.15.B relate informal language to mathematical language and symbols	4.16.A make generalizations from patterns or sets of examples and nonexamples 4.16.B justify why an answer is reasonable and explain the solution process
5	5.15.A explain and record observations using objects, words, pictures, numbers, and technology	5.15.B relate informal language to mathematical language and symbols	5.16.A make generalizations from patterns or sets of examples and nonexamples 5.16.B justify why an answer is reasonable and explain the solution process
6	6.12.A communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models		6.13.A make conjectures from patterns or sets of examples and non-examples 6.13.B validate his/her conclusions using mathematical properties and relationships
7	7.14.A communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models		7.15.A make conjectures from patterns or sets of examples and nonexamples 7.15.B validate his/her conclusions using mathematical properties and relationships
8	8.15.A communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models		8.16.A make conjectures from patterns or sets of examples and nonexamples 8.16.B validate his/her conclusions using mathematical properties and relationships
Alg I	Not identified in the TEKS		
Geom			
Alg II			

Science Process TEKS

TOOLS TO KNOW

	Use Lab Safety	Design and Conduct Investigations	Use Scientific Tools and Instruments
K	K.1A Identify and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately. K.1B Discuss the importance of safe practices to keep self and others safe and healthy. K.1 C Demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reusing or recycling paper, plastic, and metal.	K.2A Ask questions about organisms, objects, and events observed in the natural world. K.2B Plan and conduct simple descriptive investigations such as ways objects move. K.3A Identify and explain a problem such as the impact of littering on the playground and propose a solution in his/her own words.	K.4A Collect information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, and notebooks; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as terrariums and aquariums. K.4B Use senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment.
1	1.1A Recognize and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately. 1.1B Recognize the importance of safe practices to keep self and others safe and healthy. 1.1C Identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals.	1.2A Ask questions about organisms, objects, and events observed in the natural world. 1.2B Plan and conduct simple descriptive investigations such as ways objects move.	1.4A Collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as classroom demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as aquariums and terrariums. 1.4B Measure and compare organisms and objects using non-standard units.
2	2.1A Identify and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately. 2.1B Describe the importance of safe practices. 2.1C Identify and demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reuse or recycling of paper, plastic, and metal.	2.2A Ask questions about organisms, objects, and events during observations and investigations. 2.2B Plan and conduct descriptive investigations such as how organisms grow.	2.4A Collect, record, and compare information using tools, including computers, hand lenses, rulers, primary balances, plastic beakers, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and stopwatches; weather instruments such as thermometers, wind vanes, and rain gauges; and materials to support observations of habitats of organisms such as terrariums and aquariums. 2.4B Measure and compare organisms and objects using non-standard units that approximate metric units.
3	3.1A Demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including observing a schoolyard habitat. 3.1B Make informed choices in the use and conservation of natural resources by recycling or reusing materials such as paper, aluminum cans, and plastics.	3.2A Plan and implement descriptive investigations, including asking and answering questions, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world. 3.2E Demonstrate that repeated investigations may increase the reliability of results.	3.4A Collect, record, and analyze information using tools, including microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, compasses, magnets, collecting nets, notebooks, sound recorders, and Sun, Earth, and Moon system models; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums. 3.4B Use safety equipment as appropriate, including safety goggles and gloves.
4	4.1A Demonstrate safe practices and the use of safety equipment as described in the Texas Safety Standards during classroom and outdoor investigations. 4.1B Make informed choices in the use and conservation of natural resources and reusing and recycling of materials such as paper, aluminum, glass, cans, and plastic.	4.2A Plan and implement descriptive investigations, including asking well-defined questions, making inferences, and selecting and using appropriate equipment or technology to answer his/her questions. 4.2E Perform repeated investigations to increase the reliability of results.	4.4A Collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, spring scales, pan balances, triple beam balances, graduated cylinders, beakers, hot plates, meter sticks, compasses, magnets, collecting nets, and notebooks; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums 4.4B Use safety equipment as appropriate including safety goggles and gloves.
5	5.1.A Demonstrate safe practices and the use of safety equipment as described in the Texas Safety Standards during classroom and outdoor investigations; and 5.1.B Make informed choices in the conservation, disposal, and recycling of materials.	5.2.A Describe, plan, and implement simple experimental investigations testing one variable; 5.2.B Ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology; 5.2.E Demonstrate that repeated investigations may increase the reliability of results;	5.4.A Collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, prisms, mirrors, pan balances, triple beam balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices, including clocks and stopwatches; and materials to support observations of habitats or organisms such as terrariums and aquariums; and 5.4.B Use safety equipment, including safety goggles and gloves.

	Use Lab Safety	Design and Conduct Investigations	Use Scientific Tools and Instruments
6	6.1A Demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards. 6.1B Practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.	6.2A Plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology. 6.2B Design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology.	6.4A Use appropriate tools to collect, record, and analyze information, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum. 6.4B Use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/facewash, a fire blanket, and a fire extinguisher.
7	7.1A Demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards. 7.1B Practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.	7.2A Plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology. 7.2B Design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology.	7.4A Use appropriate tools to collect, record, and analyze information, including life science models, hand lens, stereoscopes, microscopes, beakers, Petri dishes, microscope slides, graduated cylinders, test tubes, meter sticks, metric rulers, metric tape measures, timing devices, hot plates, balances, thermometers, calculators, water test kits, computers, temperature and pH probes, collecting nets, insect traps, globes, digital cameras, journals/notebooks, and other equipment as needed to teach the curriculum. 7.4B Use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.
8	8.1A Demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards. 8.1B Practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.	8.2A Plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology. 8.2B Design and implement comparative and experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology.	8.4A Use appropriate tools to collect, record, and analyze information, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectroscopes, timing devices, and other equipment as needed to teach the curriculum. 8.4B Use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

	Use Lab Safety	Design and Conduct Investigations	Use Scientific Tools and Instruments
Bio	B.1.A Demonstrate safe practices during laboratory and field investigations B.1.B Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	B.2.A Know the definition of science and understand that it has limitations, as specified in chapter 112.34, subsection (b)(2) of 19 TAC B.2.B Know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories B.2.C Know scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but they may be subject to change as new areas of science and new technologies are developed; B.2.D Distinguish between scientific hypotheses and scientific theories B.2.E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology	B.2.F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, gel electrophoresis apparatuses, micropipettors, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, cameras, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures
Chem	C.1.A Safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers C.1.B Know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Material Safety Data Sheets (MSDS) C.1.C Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	C.2.A Know the definition of science and understand that it has limitations, as specified in chapter 112.35, subsection (b)(2) of 19 TAC C.2.B Know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories C.2.C Know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed; C.2.D Distinguish between scientific hypotheses and scientific theories C.2.E Plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	C.2.F Collect data and make measurements with accuracy and precision C.2.G Express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures
Phy	P.1.A Demonstrate safe practices during laboratory and field investigations P.1.B Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	P.2.A Know the definition of science and understand that it has limitations, as specified in chapter 112.39, subsection (b)(2) of 19 TAC P.2.B Know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories P.2.C Know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed P.2.D Distinguish between scientific hypotheses and scientific theories P.2.E Design and implement investigative procedures, including making observations, asking well-defined questions, formulating testable hypotheses, identifying variables, selecting appropriate equipment and technology, and evaluating numerical answers for reasonableness	P.2.F Demonstrate the use of course apparatus, equipment, techniques, and procedures, including multimeters (current, voltage, resistance), triple beam balances, batteries, clamps, dynamics demonstration equipment, collision apparatus, data acquisition probes, discharge tubes with power supply (H, He, Ne, Ar), hand-held visual spectroscopes, hot plates, slotted and hooked lab masses, bar magnets, horseshoe magnets, plane mirrors, convex lenses, pendulum support, power supply, ring clamps, ring stands, stopwatches, trajectory apparatus, tuning forks, carbon paper, graph paper, magnetic compasses, polarized film, prisms, protractors, resistors, friction blocks, mini lamps (bulbs) and sockets, electrostatics kits, 90-degree rod clamps, metric rulers, spring scales, knife blade switches, Celsius thermometers, meter sticks, scientific calculators, graphing technology, computers, cathode ray tubes with horseshoe magnets, ballistic carts or equivalent, resonance tubes, spools of nylon thread or string, containers of iron filings, rolls of white craft paper, copper wire, Periodic Table, electromagnetic spectrum charts, slinky springs, wave motion ropes, and laser pointers P.2.G Use a wide variety of additional course apparatus, equipment, techniques, materials, and procedures as appropriate such as ripple tank with wave generator, wave motion rope, micrometer, caliper, radiation monitor, computer, ballistic pendulum, electroscope, inclined plane, optics bench, optics kit, pulley with table clamp, resonance tube, ring stand screen, four-inch ring, stroboscope, graduated cylinders, and ticker timer P.2.H Make measurements with accuracy and precision and record data using scientific notation and International System (SI) units P.2.I Identify and quantify causes and effects of uncertainties in measured data

Science Process TEKS

WAYS TO SHOW

	Collect, Record, and Analyze Information	Create Models	Use History of Science
K	K.2C Collect data and make observations using simple equipment such as hand lenses, primary balances, and nonstandard measurement tools. K.2D Record and organize data and observations using pictures, numbers, and words. K.2E Communicate observations with others about simple descriptive investigations		K.3C Explore that scientists investigate different things in the natural world and use tools to help in their investigations.
1	1.2C Collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools. 1.2D Record and organize data using pictures, numbers, and words. 1.2E Communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations. 1.3A Identify and explain a problem such as finding a home for a classroom pet and propose a solution in his/her own words. 1.3B Make predictions based on observable patterns.		1.3C Describe what scientists do.
2	2.2C Collect data from observations using simple equipment such as hand lenses, primary balances, thermometers, and non-standard measurement tools. 2.2D Record and organize data using pictures, numbers, and words. 2.2E Communicate observations and justify explanations using student-generated data from simple descriptive Investigations. 2.2F Compare results of investigations with what students and scientists know about the world 2.3A Identify and explain a problem in his/.her own words and propose a task and solution for the problem such as lack of water in a habitat. 2.3B Make predictions based on observable patterns.		2.2F Compare results of investigations with what students and scientists know about the world 2.3C Identify what a scientist is and explore what different scientists do.
3	3.2B Collect data by observing and measuring using the metric system and recognize differences between observed and measured data. 3.2C Construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data. 3.2D Analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations. 3.2F Communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion. 3.3A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student. 3.3B Draw inferences and evaluate accuracy of product claims found in advertisements and labels such as for toys and food.	3.3C Represent the natural world using models such as volcanoes or Sun, Earth, and Moon system and identify their limitations, including size, properties, and materials.	3.3D Connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.

	Collect, Record, and Analyze Information	Create Models	Use History of Science
4	4.2B Collect and record data by observing and measuring, using the metric system, and using descriptive words and numerals such as labeled drawings, writing, and concept maps. 4.2C Construct simple tables, charts, bar graphs, and maps using tools and current technology to organize, examine, and evaluate data. 4.2D Analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured. 4.2F Communicate valid, oral, and written results supported by data 4.3A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student. 4.3B Draw inferences and evaluate accuracy of services and product claims found in advertisements and labels such as for toys, food, and sunscreen.	4.3C Represent the natural world using models such as rivers, stream tables, or fossils and identify their limitations, including accuracy and size.	4.3D Connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.
5	5.2.C Collect information by detailed observations and accurate measuring; 5.2.D Analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence; 5.2F Communicate valid conclusions in both written and verbal forms. 5.2G Construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information. 5.3.A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student; 5.3.B Evaluate the accuracy of the information related to promotional materials for products and services such as nutritional labels;	5.3.C Draw or develop a model that represents how something works or looks that cannot be seen such as how a soda dispensing machine works.	5.3.D Connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists. .
6	6.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. 6.2D Construct tables and graphs, using repeated trials and means, to organize data and identify patterns. 6.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. 6.3A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student.	6.3B Use models to represent aspects of the natural world such as a model of Earth's layers. 6.3C Identify advantages and limitations of models such as size, scale, properties, and materials.	6.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.
7	7.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. 7.2D Construct tables and graphs, using repeated trials and means, to organize data and identify patterns. 7.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict	7.3B Use models to represent aspects of the natural world such as human body systems and plant and animal cells. 7.3C Identify advantages and limitations of models such as size, scale, properties, and materials.	7.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.

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8	8.2C Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. 8.2D Construct tables and graphs, using repeated trials and means, to organize data and identify patterns. 8.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. 8.3A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student.	8.3B Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature. 8.3C Identify advantages and limitations of models such as size, scale, properties, and materials.	8.3D Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.
Biology	B.2.G Analyze, evaluate, make inferences, and predict trends from data B.2.H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports B.3.A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student B.3.B Communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials B.3.C Draw inferences based on data related to promotional materials for products and services	B.3.E Evaluate models according to their limitations in representing biological objects or events	B.3.D Evaluate the impact of scientific research on society and the environment B.3.F Research and describe the history of biology and contributions of scientists
Chemistry	C.2.H Organize, analyze, evaluate, make inferences, and predict trends from data C.2.I Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports C.3.A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student C.3.B Communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials C.3.C Draw inferences based on data related to promotional materials for products and services		C.3.D evaluate the impact of research on scientific thought, society, and the environment C.3.E Describe the connection between chemistry and future careers C.3.F Research and describe the history of chemistry and contributions of scientists
Physics	P.2.J Organize and evaluate data and make inferences from data, including the use of tables, charts, and graphs P.2.K Communicate valid conclusions supported by the data through various methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports P.2.L Express and manipulate relationships among physical variables quantitatively, including the use of graphs, charts, and equations P.3.A In all fields of science, analyze, evaluate, and critique		P.3.D Explain the impacts of the scientific contributions of a variety of historical and contemporary scientists on scientific thought and society P.3.E Research and describe the connections between physics and future careers

	scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student P.3.B Communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials P.3.C Draw inferences based on data related to promotional materials for products and services P.3.F Express and interpret relationships symbolically in accordance with accepted theories to make predictions and solve problems mathematically, including problems requiring proportional reasoning and graphical vector addition		

Social Studies Process TEKS

TOOLS TO KNOW

lead4ward

	Gather Information and Use Primary and Secondary Sources	Use Mathematics and Social Studies Terminology	Locate Places of Significance
K	K.14(A) obtain information about a topic using a variety of valid oral sources such as conversations, interviews, and music; K.14 (B) obtain information about a topic using a variety of valid visual sources such as pictures, symbols, electronic media, print material, and artifacts		K.4 (B) locate places on the school campus and describe their relative locations;*
1	1.17(A) obtain information about a topic using a variety of valid oral sources such as conversations, interviews, and music; 1.17(B) obtain information about a topic using a variety of valid visual sources such as pictures, symbols, electronic media, maps, literature, and artifacts;		1.4.(A) locate places using the four cardinal directions* 1.5(B) locate the community, Texas, and the United States on maps and globes.*
2	2.6(C) examine information from various sources about places and regions.* 2.18(A) obtain information about a topic using a variety of valid oral sources such as conversations, interviews, and music; 2.18(B) obtain information about a topic using a variety of valid visual sources such as pictures, maps, electronic sources, literature, reference sources, and artifacts		2.6.A identify major landforms and bodies of water, including each of the continents and each of the oceans, on maps and globes* 2.6 (B) locate places of significance, including the local community, Texas, the state capital, the U.S. capital, major cities in Texas, the coast of Texas, Canada, Mexico, and the United States on maps and globes*
3	3.17(A) research information, including historical and current events, and geographic data, about the community and world, using a variety of valid print oral, visual, and Internet resources;	3.17(F) use appropriate mathematical skills to interpret social studies information such as maps and graphs.	3.5 (A) use cardinal and intermediate directions to locate places on maps and globes such as the Rocky Mountains, the Mississippi River, and Austin, Texas, in relation to the local community;* 3.5(B) use a scale to determine the distance between places on maps and globes;* 3.5(C) identify and use the compass rose, grid system, and symbols to locate places on maps and globes; *
4	4.21(A) differentiate between, locate, and use valid primary and secondary sources such as computer software; interviews; biographies; oral, print, and visual material; documents; and artifacts to acquire information about the United States and Texas;	4.21(E) use appropriate mathematical skills to interpret social studies information such as maps and graphs. 4.22(A) use social studies terminology correctly	4.7 (B) identify, locate, and compare the geographic regions of Texas (Mountains and Basins, Great Plains, North Central Plains, Coastal Plains), including their landforms, climate, and vegetation; *
5	5.24(A) differentiate between, locate, and use valid primary and secondary sources such as computer software; interviews; biographies; oral, print, and visual material; documents; and artifacts to acquire information about the United States;	5.25 (A) use social studies terminology correctly;	5.7 (C) locate on a map important political features such as the ten largest urban areas in the United States, the 50 states and their capitals, and regions such as the Northeast, the Midwest, and the Southwest; *
6	6.21(A) differentiate between, locate, and use valid primary and secondary sources such as computer software; interviews; biographies; oral, print, and visual material; and artifacts to acquire information about various world cultures;	6.21(F) use appropriate mathematical skills to interpret social studies information such as maps and graphs. 6. 22(A) use social studies terminology correctly;	6.4(A) locate various contemporary societies on maps and globes using latitude and longitude to determine absolute location; 6.4(F) identify the location of major world countries such as Canada, Mexico, France, Germany, the United Kingdom, Italy, Spain, Norway, Sweden, Russia, South Africa, Nigeria, Iraq, Afghanistan, Israel, Iran, India, Pakistan, the People's Republic of China, the Republic of China (Taiwan), Japan, North and South Korea, Indonesia, and Australia.*
7	7.21(A) differentiate between, locate, and use valid primary and secondary sources such as computer software, databases, media and news services, biographies, interviews, and artifacts to acquire information about Texas; 7.21(G) evaluate the validity of a source based on language, corroboration with other sources, and information about the author	7.21(H) use appropriate mathematical skills to interpret social studies information such as maps and graphs. 7. 22(A) use social studies terminology correctly;	7.9(A) locate the Mountains and Basins, Great Plains, North Central Plains, and Coastal Plains regions and places of importance in Texas during the 19th, 20th, and 21st centuries such as major cities, rivers, natural and historic landmarks, political and cultural regions, and local points of interest;*
8	8.29 (A) differentiate between, locate, and use valid primary and secondary sources such as computer software, databases, media and news services, biographies, interviews, and artifacts to acquire information about the United States	8.29.H use appropriate mathematical skills to interpret social studies information such as maps and graphs 8.30.A use social studies terminology correctly	8.10.A locate places and regions of importance in the United States during the17th, 18th, and 19th centuries*
WG	WG.21.A analyze and evaluate the validity, and utility of multiple sources of geographic information such as primary and secondary sources, aerial photographs, and maps WG.23.B use case studies and GIS to identify contemporary challenges and to answer real-world questions.	WG.22.C use geographic terminology correctly	WG.21.B locate places of contemporary geopolitical significance on a map
WH	WH.29.C explain the differences between primary and secondary sources and examine those sources to analyze frame of reference, historical context, and point of view	WH.29.H use appropriate reading and mathematical skills to interpret social studies information such as maps and graphs WH.30.A use social studies terminology correctly	WH.16.A locate places and regions of historical significance directly related to major eras and turning points in world history*
USH	USH.29.A use a variety of both primary and secondary valid sources to acquire information and to analyze and answer historical questions USH.29.D use the process of historical inquiry to research, interpret, and use multiple types of sources of evidence	USH.30.B use correct social studies terminology to explain historical concepts	

* identified as content standard in the TEKS but also represents a social studies skill/process

Social Studies Process TEKS

WAYS TO SHOW

	Analyze and Interpret Information	Identify Context, Point of View, and Perspective	Create and Interpret Visuals and Organize Information
K	K.14 (C) sequence and categorize information.		K.15 (B) create and interpret visuals, including pictures and maps.
1	1.17(C) sequence and categorize information.		1.5(A) create and use simple maps such as maps of the home, classroom, school, and community* 1. 18(B) create and interpret visual and written material.
2	2.18(D) sequence and categorize information; 2.18(E) interpret oral, visual, and print material by identifying the main idea, predicting, and comparing and contrasting.		2.5.(A) interpret information on maps and globes using basic map elements such as title, orientation (north, south, east, west), and legend/map keys; * 2.5(B) create maps to show places and routes within the home, school, and community
3	3.17(B) sequence and categorize information; 3.17(C) interpret oral, visual, and print material by identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, and comparing and contrasting;		3.5 (D) create and interpret maps of places and regions that contain map elements, including a title, compass rose, legend, scale, and grid system.* 3. 17(E) interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps
4	4.21(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;	4.21(D) identify different points of view about an issue, topic, historical event, or current event;	4.6(A) apply geographic tools, including grid systems, legends, symbols, scales, and compass roses, to construct and interpret maps; * 4.6(B) translate geographic data, population distribution, and natural resources into a variety of formats such as graphs and maps.* 4.21(C) organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
5	5.24 (B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions	5.24 (E) identify the historical context of an event. 5.24 (D) identify different points of view about an issue, topic, or current event;	5.6 (A) apply geographic tools, including grid systems, legends, symbols, scales, and compass roses, to construct and interpret maps* 5.24 (C) organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps
6	5.21(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;	21(D) identify different points of view about an issue or current topic; 21(E) identify the elements of frame of reference that influenced participants in an event;	6. 3(D) create thematic maps, graphs, charts, models, and databases depicting aspects such as population, disease, and economic activities of various world regions and countries. * 6. 21(C) organize and interpret information from outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
7	7.21(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions	7.21(D) identify points of view from the historical context surrounding an event and the frame of reference that influenced the participants; 7.21(E) support a point of view on a social studies issue or event	7.8(A) create and interpret thematic maps, graphs, charts, models, and databases representing various aspects of Texas during the 19th, 20th, and 21st centuries; * 7.21(C) organize and interpret information from outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
8	8.29.B analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions	8.29.D identify points of view from the historical context surrounding an event and the frame of reference which influenced the participants 8.29.E support a point of view on a social studies issue or events	8.29.C organize and interpret information from outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps 8.29.J pose and answer questions about geographic distributions and patterns shown on maps, graphs, charts, models, and databases
WG			WG.21.C create and interpret different types of maps to answer geographic questions, infer relationships, and analyze change WG.13.A interpret maps to explain the division of land, including man-made and natural borders, into separate political units such as cities, states, or countries
WH	WH.29.F analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time		WH.15.A create and interpret thematic maps, graphs, and charts to demonstrate the relationship between geography and the historical development of a region or nation WH.15.B analyze and compare geographic distributions and patterns in world history shown on maps, graphs, charts, and models WH.16.C interpret maps, charts, and graphs to explain how geography has influenced people and events in the past WH.30.C interpret and create written, oral, and visual presentations of social studies information
USH	USH.29.B analyze information by sequencing, categorizing, identifying cause and-effect relationships, comparing and contrasting, finding the main idea, summarizing, making generalizations, making predictions, drawing inferences, and drawing conclusions	USH.29.G identify and support with historical evidence a point of view on a social studies issue or event	USH.29.H use appropriate skills to analyze and interpret social studies information such as maps, graphs, presentations, speeches, lectures, and political cartoons USH.31.B pose and answer questions about geographic distributions and patterns shown on maps, graphs, charts, and available databases

* identified as content standard in the TEKS but also represents a social studies skill/process

Reading Comprehension Strategies

TOOLS TO KNOW

	TEKS	Figure 19	
	Use Context	Establish Purposes and Ask Questions	Monitor and Adjust Comprehension
K		(A) discuss the purposes for reading and listening to various texts (e.g., to become involved in real and imagined events, settings, actions, and to enjoy language); (B) ask and respond to questions about text;	(C) monitor and adjust comprehension (e.g., using background knowledge, creating sensory images, rereading a portion aloud);.
1		(A) establish purposes for reading selected texts based upon desired outcome to enhance comprehension; (B) ask literal questions of text;	(C) monitor and adjust comprehension (e.g., using background knowledge, creating sensory images, rereading a portion aloud);
2	2.5.B use context to determine the relevant meaning of unfamiliar words or multiple-meaning words		(C) monitor and adjust comprehension (e.g., using background knowledge, creating sensory images, rereading a portion aloud, generating questions);
3	3.4.B use context to determine the relevant meaning of unfamiliar words or distinguish among multiple meaning words and homographs	(A) establish purposes for reading selected texts based upon own or others' desired outcome to enhance comprehension; (B) ask literal, interpretive, and evaluative questions of text;	
4	4.2.B use the context of the sentence (e.g., in-sentence example or definition) to determine the meaning of unfamiliar words or multiple meaning words		
5	5.2.B use context (e.g., in-sentence restatement) to determine or clarify the meaning of unfamiliar or multiple meaning words	A) establish purposes for reading selected texts based upon own or others' desired outcome to enhance comprehension; (B) ask literal, interpretive, evaluative, and universal questions of text; (A) establish purposes for reading selected texts based upon own or others' desired outcome to enhance comprehension;	
6	6.2.B use context (e.g., cause and effect or compare and contrast organizational text structures) to determine or clarify the meaning of unfamiliar or multiple meaning words		
7	7.2.B use context (within a sentence and in larger sections of text) to determine or clarify the meaning of unfamiliar or ambiguous words		(C) reflect on understanding to monitor comprehension (e.g., summarizing and synthesizing; making textual, personal, and world connections; creating sensory images);
8	8.2.B use context (within a sentence and in larger sections of text) to determine or clarify the meaning of unfamiliar or ambiguous words or words with novel meanings		
Eng 1	EI.1.B analyze textual context (within a sentence and in larger sections of text) to distinguish between the denotative and connotative meanings of words	.	(A) reflect on understanding to monitor comprehension (e. g., asking questions, summarizing and synthesizing, making connections, creating sensory images); and
Eng 2	E2.1.B analyze textual context (within a sentence and in larger sections of text) to distinguish between the denotative and connotative meanings of words		
Eng 3	E3.1.B analyze textual context (within a sentence and in larger sections of text) to draw conclusions about the nuance in word meanings		

Reading Comprehension Strategies

WAYS TO SHOW

	Figure 19		
	Make Inferences	Retell, summarize, paraphrase, and synthesize texts	Make Connections
K	(D) make inferences based on the cover, title, illustrations, and plot	(E) retell or act out important events in stories;	(F) make connections to own experiences, to ideas in other texts, and to the larger community and discuss textual evidence
1	(D) make inferences about text and use textual evidence to support understanding;	(E) retell or act out important events in stories in logical order;	
2		(E) retell important events in stories in logical order;	
3		(E) summarize information in text, maintaining meaning and logical order;	(F) make connections (e.g., thematic links, author analysis) between literary and informational texts with similar ideas and provide textual evidence.
4		(E) summarize information in text, maintaining meaning and logical order;	
5		(E) summarize and paraphrase texts in ways that maintain meaning and logical order within a text and across texts;	(F) make connections (e.g., thematic links, author analysis) between and across multiple texts of various genres and provide textual evidence.
6		(E) summarize, paraphrase, and synthesize texts in ways that maintain meaning and logical order within a text and across texts;	
7	(D) make complex inferences about text and use textual evidence to support understanding;		(F) make connections between and across texts, including other media (e.g., film, play), and provide textual evidence.
8			(F) make intertextual links among and across texts, including other media (e.g., film, play), and provide textual evidence.
Eng 1	(B) make complex inferences about text and use textual evidence to support understanding		
Eng 2			
Eng 3	(B) make complex inferences (e.g., inductive and deductive) about text and use textual evidence to support understanding		