Subject	Chapter 112. Science			
Course Title	§112.37. Environmental Systems, Beginning with School Year 2010-2011 (One Credit).			
TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(a) General requirements. Students shall be awarded one credit for successful completion of this course. Suggested prerequisite: one unit high school life science and one unit of high school physical science. This course is recommended for students in Grade 11 or 12.				
(b) Introduction.				
(1) Environmental Systems. In Environmental Systems, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students study a variety of topics that include: biotic and abiotic factors in habitats, ecosystems and biomes, interrelationships among resources and an environmental system, sources and flow of energy through an environmental system, relationship between carrying capacity and changes in populations and ecosystems, and changes in environments.				
(2) Nature of Science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable.				
(3) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation can be experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.				
(4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. Students should be able to distinguish between scientific decision-making methods and ethical and social decisions that involve the application of scientific information.				
(5) Scientific systems. A system is a collection of cycles, structures, and processes that interact. All systems have basic properties that can be described in terms of space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.				
(C) Knowledge and skills.				
(1) Scientific processes. The student, for at least 40% of instructional time, conducts hands-on laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including appropriate first aid responses to accidents that could occur in the field such as insect stings, animal bites, overheating, sprains, and breaks	(i) demonstrate safe practices during laboratory investigations		
(1) Scientific processes. The student, for at least 40% of instructional time, conducts hands-on laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including appropriate first aid responses to accidents that could occur in the field such as insect stings, animal bites, overheating, sprains, and breaks	(ii) demonstrate safe practices during field investigations, including appropriate first aid responses to accidents that could occur in the field		

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(1) Scientific processes. The student, for at least 40% of instructional time, conducts hands-on laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(i) demonstrate an understanding of the use of resources		
(1) Scientific processes. The student, for at least 40% of instructional time, conducts hands-on laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(ii) demonstrate an understanding of the conservation of resources		
(1) Scientific processes. The student, for at least 40% of instructional time, conducts hands-on laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(iii) demonstrate the proper disposal or recycling of materials		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section	(i) know the definition of science, as specified in subsection (b)(2) [above]		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section	(ii) understand that [science] has limitations, as specified in subsection (b)(2) [above]		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(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	(i) know that scientific hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(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	(ii) know that hypotheses are testable statements that must be capable of being supported or not supported by observational evidence		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(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	(iii) [know that] hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(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	(i) know that scientific theories are based on natural and physical phenomena		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(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	(ii) know that scientific theories are capable of being tested by multiple independent researchers		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(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	(iii) [know that], unlike hypotheses, scientific theories are well-established explanations		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(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	(iv) [know that], unlike hypotheses, scientific theories are highly-reliable explanations		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(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	(v) [know that scientific theories] may be subject to change as new areas of science are developed		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(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	(vi) [know that scientific theories] may be subject to change as new technologies are developed		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(D) distinguish between scientific hypotheses and scientific theories			
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(i) follow investigative procedures, including making observations		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(ii) follow investigative procedures, including asking questions		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(iii) follow investigative procedures, including formulating testable hypotheses		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(iv) follow investigative procedures, including selecting equipment		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(v) follow investigative procedures, including selecting technology		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(vi) plan and implement investigative procedures, including making observations		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(vii) plan and implement investigative procedures, including asking questions		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(viii) plan and implement investigative procedures, including formulating testable hypotheses		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(ix) plan and implement investigative procedures, including selecting equipment		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(E) follow or plan and implement investigative procedures, including making observations, asking questions, formulating testable hypotheses, and selecting equipment and technology	(x) plan and implement investigative procedures, including selecting technology		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(F) collect data individually or collaboratively, make measurements with precision and accuracy, record values using appropriate units, and calculate statistically relevant quantities to describe data, including mean, median, and range	(i) collect data individually or collaboratively		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(F) collect data individually or collaboratively, make measurements with precision and accuracy, record values using appropriate units, and calculate statistically relevant quantities to describe data, including mean, median, and range	(ii) make measurements with precision		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(F) collect data individually or collaboratively, make measurements with precision and accuracy, record values using appropriate units, and calculate statistically relevant quantities to describe data, including mean, median, and range	(iii) make measurements with accuracy		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(F) collect data individually or collaboratively, make measurements with precision and accuracy, record values using appropriate units, and calculate statistically relevant quantities to describe data, including mean, median, and range	(iv) record values using appropriate units		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(F) collect data individually or collaboratively, make measurements with precision and accuracy, record values using appropriate units, and calculate statistically relevant quantities to describe data, including mean, median, and range	(v) calculate statistically relevant quantities to describe data, including mean		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(F) collect data individually or collaboratively, make measurements with precision and accuracy, record values using appropriate units, and calculate statistically relevant quantities to describe data, including mean, median, and range	(vi) calculate statistically relevant quantities to describe data, including median		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(F) collect data individually or collaboratively, make measurements with precision and accuracy, record values using appropriate units, and calculate statistically relevant quantities to describe data, including mean, median, and range	(vii) calculate statistically relevant quantities to describe data, including range		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(i) demonstrate the use of course apparatuses [and] equipment, including meter sticks		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(ii) demonstrate the use of course apparatuses [and] equipment, including rulers		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(iii) demonstrate the use of course apparatuses [and] equipment, including pipettes		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(iv) demonstrate the use of course apparatuses [and] equipment, including graduated cylinders		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(v) demonstrate the use of course apparatuses [and] equipment, including triple beam balances		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(vi) demonstrate the use of course apparatuses [and] equipment, including timing devices		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(vii) demonstrate the use of course apparatuses [and] equipment, including pH meters or probes		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(viii) demonstrate the use of course apparatuses [and] equipment, including thermometers		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(ix) demonstrate the use of course apparatuses [and] equipment, including calculators		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(x) demonstrate the use of course apparatuses [and] equipment, including computers		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xi) demonstrate the use of course apparatuses [and] equipment, including turbidity testing devices		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xii) demonstrate the use of course apparatuses [and] equipment, including hand magnifiers		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xiii) demonstrate the use of course apparatuses [and] equipment, including work gloves		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xiv) demonstrate the use of course apparatuses [and] equipment, including disposable gloves		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xv) demonstrate the use of course apparatuses [and] equipment, including compasses		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xvi) demonstrate the use of course apparatuses [and] equipment, including first aid kits		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xvii) demonstrate the use of course apparatuses [and] equipment, including binoculars		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xviii) demonstrate the use of course apparatuses [and] equipment, including field guides		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xix) demonstrate the use of course apparatuses [and] equipment, including water quality test kits or probes		

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(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xx) demonstrate the use of course apparatuses [and] equipment, including soil test kits or probes		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxi) demonstrate the use of course apparatuses [and] equipment, including 100-foot appraisers tapes		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxii) demonstrate the use of course apparatuses [and] equipment, including tarps		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxiii) demonstrate the use of course apparatuses [and] equipment, including shovels		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxiv) demonstrate the use of course apparatuses [and] equipment, including trowels		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxv) demonstrate the use of course apparatuses [and] equipment, including screens		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxvi) demonstrate the use of course apparatuses [and] equipment, including buckets		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxvii) demonstrate the use of course apparatuses [and] equipment, including rock samples		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxviii) demonstrate the use of course apparatuses [and] equipment, including mineral samples		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxix) demonstrate the use of course techniques including Internet access		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(G) demonstrate the use of course apparatuses, equipment, techniques, and procedures, including meter sticks, rulers, pipettes, graduated cylinders, triple beam balances, timing devices, pH meters or probes, thermometers, calculators, computers, Internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 100-foot appraiser's tapes, tarps, shovels, trowels, screens, buckets, and rock and mineral samples	(xxx) demonstrate the use of course procedures		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(H) use a wide variety of additional course apparatuses, equipment, techniques, materials, and procedures as appropriate such as air quality testing devices, cameras, flow meters, Global Positioning System (GPS) units, Geographic Information System (GIS) software, computer models, densiometers, clinometers, and field journals	(i) use a wide variety of additional course apparatuses [and] equipment, as appropriate		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(H) use a wide variety of additional course apparatuses, equipment, techniques, materials, and procedures as appropriate such as air quality testing devices, cameras, flow meters, Global Positioning System (GPS) units, Geographic Information System (GIS) software, computer models, densiometers, clinometers, and field journals	(ii) use a wide variety of additional course techniques, as appropriate		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(H) use a wide variety of additional course apparatuses, equipment, techniques, materials, and procedures as appropriate such as air quality testing devices, cameras, flow meters, Global Positioning System (GPS) units, Geographic Information System (GIS) software, computer models, densiometers, clinometers, and field journals	(iii) use a wide variety of additional course materials, as appropriate		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(H) use a wide variety of additional course apparatuses, equipment, techniques, materials, and procedures as appropriate such as air quality testing devices, cameras, flow meters, Global Positioning System (GPS) units, Geographic Information System (GIS) software, computer models, densiometers, clinometers, and field journals	(iv) use a wide variety of additional course procedures, as appropriate		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(I) organize, analyze, evaluate, build models, make inferences, and predict trends from data	(i) organize data		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(I) organize, analyze, evaluate, build models, make inferences, and predict trends from data	(ii) analyze data		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(I) organize, analyze, evaluate, build models, make inferences, and predict trends from data	(iii) evaluate data		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(I) organize, analyze, evaluate, build models, make inferences, and predict trends from data	(iv) build models from data		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(I) organize, analyze, evaluate, build models, make inferences, and predict trends from data	(v) make inferences from data		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(I) organize, analyze, evaluate, build models, make inferences, and predict trends from data	(vi) predict trends from data		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(J) perform calculations using dimensional analysis, significant digits, and scientific notation	(i) perform calculations using dimensional analysis		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(J) perform calculations using dimensional analysis, significant digits, and scientific notation	(ii) perform calculations using significant digits		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(J) perform calculations using dimensional analysis, significant digits, and scientific notation	(iii) perform calculations using scientific notation		
(2) Scientific processes. The student uses scientific methods during laboratory and field investigations. The student is expected to:	(K) 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	(i) communicate valid conclusions supported by the data through [various] methods		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(i) in all fields of science, analyze scientific explanations by using empirical evidence		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(ii) in all fields of science, analyze scientific explanations by using logical reasoning		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(iii) in all fields of science, analyze scientific explanations by using experimental testing		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(iv) in all fields of science, analyze scientific explanations by using observational testing		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(v) in all fields of science, analyze scientific explanations, including examining all sides of scientific evidence of those scientific explanations		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(vi) in all fields of science, evaluate scientific explanations by using empirical evidence		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(vii) in all fields of science, evaluate scientific explanations by using logical reasoning		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(viii) in all fields of science, evaluate scientific explanations by using experimental testing		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(ix) in all fields of science, evaluate scientific explanations by using observational testing		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(x) in all fields of science, evaluate scientific explanations, including examining all sides of scientific evidence of those scientific explanations		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(xi) in all fields of science, critique scientific explanations by using empirical evidence		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(xii) in all fields of science, critique scientific explanations by using logical reasoning		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(xiii) in all fields of science, critique scientific explanations by using experimental testing		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(xiv) in all fields of science, critique scientific explanations by using observational testing		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(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	(xv) in all fields of science, critique scientific explanations, including examining all sides of scientific evidence of those scientific explanations		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials	(i) communicate scientific information extracted from various sources		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials	(ii) apply scientific information extracted from various sources		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(C) draw inferences based on data related to promotional materials for products and services	(i) draw inferences based on data related to promotional materials for products		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(C) draw inferences based on data related to promotional materials for products and services	(ii) draw inferences based on data related to promotional materials for services		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(i) evaluate the impact of research on scientific thought		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(ii) evaluate the impact of research on society		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(iii) evaluate the impact of research on the environment		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(E) describe the connection between environmental science and future careers			

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of environmental science and contributions of scientists	(i) research the history of environmental science		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of environmental science and contributions of scientists	(ii) research the contributions of scientists		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of environmental science and contributions of scientists	(iii) describe the history of environmental science		
(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of environmental science and contributions of scientists	(iv) describe the contributions of scientists		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(A) identify native plants and animals using a dichotomous key	(i) identify native plants using a dichotomous key		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(A) identify native plants and animals using a dichotomous key	(ii) identify native animals using a dichotomous key		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(B) assess the role of native plants and animals within a local ecosystem and compare them to plants and animals in ecosystems within four other biomes	(i) assess the role of native plants within a local ecosystem		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(B) assess the role of native plants and animals within a local ecosystem and compare them to plants and animals in ecosystems within four other biomes	(ii) assess the role of native animals within a local ecosystem		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(B) assess the role of native plants and animals within a local ecosystem and compare them to plants and animals in ecosystems within four other biomes	(iii) compare [native plants] to plants in ecosystems within four other biomes		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(B) assess the role of native plants and animals within a local ecosystem and compare them to plants and animals in ecosystems within four other biomes	(iv) compare [native animals] to animals in ecosystems within four other biomes		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(C) diagram abiotic cycles, including the rock, hydrologic, carbon, and nitrogen cycles	(i) diagram abiotic cycles, including the rock cycle		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(C) diagram abiotic cycles, including the rock, hydrologic, carbon, and nitrogen cycles	(ii) diagram abiotic cycles, including the hydrologic cycle		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(C) diagram abiotic cycles, including the rock, hydrologic, carbon, and nitrogen cycles	(iii) diagram abiotic cycles, including the carbon cycle		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(C) diagram abiotic cycles, including the rock, hydrologic, carbon, and nitrogen cycles	(iv) diagram abiotic cycles, including the nitrogen cycle		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(D) make observations and compile data about fluctuations in abiotic cycles and evaluate the effects of abiotic factors on local ecosystems and local biomes	(i) make observations about fluctuations in abiotic cycles		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(D) make observations and compile data about fluctuations in abiotic cycles and evaluate the effects of abiotic factors on local ecosystems and local biomes	(ii) compile data about fluctuations in abiotic cycles		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(D) make observations and compile data about fluctuations in abiotic cycles and evaluate the effects of abiotic factors on local ecosystems and local biomes	(iii) evaluate the effects of abiotic factors on local ecosystems		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(D) make observations and compile data about fluctuations in abiotic cycles and evaluate the effects of abiotic factors on local ecosystems and local biomes	(iv) evaluate the effects of abiotic factors on local biomes		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(E) measure the concentration of solute, solvent, and solubility of dissolved substances such as dissolved oxygen, chlorides, and nitrates and describe their impact on an ecosystem	(i) measure the concentration of solute of dissolved substances		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(E) measure the concentration of solute, solvent, and solubility of dissolved substances such as dissolved oxygen, chlorides, and nitrates and describe their impact on an ecosystem	(ii) measure the concentration of solvent of dissolved substances		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(E) measure the concentration of solute, solvent, and solubility of dissolved substances such as dissolved oxygen, chlorides, and nitrates and describe their impact on an ecosystem	(iii) measure the concentration of solubility of dissolved substances		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(E) measure the concentration of solute, solvent, and solubility of dissolved substances such as dissolved oxygen, chlorides, and nitrates and describe their impact on an ecosystem	(iv) describe [the] impact [of dissolved substances] on an ecosystem		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(F) predict how the introduction or removal of an invasive species may alter the food chain and affect existing populations in an ecosystem	(i) predict how the introduction or removal of an invasive species may alter the food chain		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(F) predict how the introduction or removal of an invasive species may alter the food chain and affect existing populations in an ecosystem	(ii) predict how the introduction or removal of an invasive species may affect existing populations in an ecosystem		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(G) predict how species extinction may alter the food chain and affect existing populations in an ecosystem	(i) predict how species extinction may alter the food chain in an ecosystem		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(G) predict how species extinction may alter the food chain and affect existing populations in an ecosystem	(ii) predict how species extinction may affect existing populations in an ecosystem		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(H) research and explain the causes of species diversity and predict changes that may occur in an ecosystem if species and genetic diversity is increased or reduced	(i) research the causes of species diversity		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(H) research and explain the causes of species diversity and predict changes that may occur in an ecosystem if species and genetic diversity is increased or reduced	(ii) explain the causes of species diversity		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(H) research and explain the causes of species diversity and predict changes that may occur in an ecosystem if species and genetic diversity is increased or reduced	(iii) predict changes that may occur in an ecosystem if species diversity is increased or reduced		
(4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:	(H) research and explain the causes of species diversity and predict changes that may occur in an ecosystem if species and genetic diversity is increased or reduced	(iv) predict changes that may occur in an ecosystem if genetic diversity is increased or reduced		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(A) summarize methods of land use and management and describe its effects on land fertility	(i) summarize methods of land use		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(A) summarize methods of land use and management and describe its effects on land fertility	(ii) summarize methods of land management		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(A) summarize methods of land use and management and describe its effects on land fertility	(iii) describe effects [of land use] on land fertility		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(A) summarize methods of land use and management and describe its effects on land fertility	(iv) describe effects [of land management] on land fertility		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(B) identify source, use, quality, management, and conservation of water	(i) identify source of water		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(B) identify source, use, quality, management, and conservation of water	(ii) identify use of water		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(B) identify source, use, quality, management, and conservation of water	(iii) identify quality of water		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(B) identify source, use, quality, management, and conservation of water	(iv) identify management of water		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(B) identify source, use, quality, management, and conservation of water	(v) identify conservation of water		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(C) document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability	(i) document the use of renewable resources as they pertain to sustainability		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(C) document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability	(ii) document the use of non-renewable resources as they pertain to sustainability		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(C) document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability	(iii) document the conservation of renewable resources as they pertain to sustainability		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(C) document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability	(iv) document the conservation of non-renewable resources as they pertain to sustainability		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(D) identify renewable and non-renewable resources that must come from outside an ecosystem such as food, water, lumber, and energy	(i) identify renewable resources that must come from outside an ecosystem		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(D) identify renewable and non-renewable resources that must come from outside an ecosystem such as food, water, lumber, and energy	(ii) identify non-renewable resources that must come from outside an ecosystem		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(E) analyze and evaluate the economic significance and interdependence of resources within the environmental system	(i) analyze the economic significance of resources within the environmental system		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(E) analyze and evaluate the economic significance and interdependence of resources within the environmental system	(ii) evaluate the economic significance of resources within the environmental system		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(E) analyze and evaluate the economic significance and interdependence of resources within the environmental system	(iii) analyze the interdependence of resources within the environmental system		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(E) analyze and evaluate the economic significance and interdependence of resources within the environmental system	(iv) evaluate the interdependence of resources within the environmental system		
(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:	(F) evaluate the impact of waste management methods such as reduction, reuse, recycling, and composting on resource availability	(i) evaluate the impact of waste management methods on resource availability		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(i) define the geosphere		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(ii) define the hydrosphere		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(iii) define the cryosphere		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(iv) define the atmosphere		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(v) define the biosphere		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(vi) identify the components of the geosphere		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(vii) identify the components of the hydrosphere		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(viii) identify the components of the cryosphere		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(ix) identify the components of the atmosphere		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(x) identify the components of the biosphere		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(A) define and identify the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere and the interactions among them	(xi) identify interactions among [the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere]		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(B) describe and compare renewable and non-renewable energy derived from natural and alternative sources such as oil, natural gas, coal, nuclear, solar, geothermal, hydroelectric, and wind	(i) describe renewable energy derived from natural and alternative sources		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(B) describe and compare renewable and non-renewable energy derived from natural and alternative sources such as oil, natural gas, coal, nuclear, solar, geothermal, hydroelectric, and wind	(ii) describe non-renewable energy derived from natural and alternative sources		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(B) describe and compare renewable and non-renewable energy derived from natural and alternative sources such as oil, natural gas, coal, nuclear, solar, geothermal, hydroelectric, and wind	(iii) compare renewable and non-renewable energy derived from natural and alternative sources		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(C) explain the flow of energy in an ecosystem, including conduction, convection, and radiation	(i) explain the flow of energy in an ecosystem, including conduction		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(C) explain the flow of energy in an ecosystem, including conduction, convection, and radiation	(ii) explain the flow of energy in an ecosystem, including convection		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(C) explain the flow of energy in an ecosystem, including conduction, convection, and radiation	(iii) explain the flow of energy in an ecosystem, including radiation		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(D) investigate and explain the effects of energy transformations in terms of the laws of thermodynamics within an ecosystem	(i) investigate the effects of energy transformations in terms of the laws of thermodynamics within an ecosystem		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(D) investigate and explain the effects of energy transformations in terms of the laws of thermodynamics within an ecosystem	(ii) explain the effects of energy transformations in terms of the laws of thermodynamics within an ecosystem		
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(E) investigate and identify energy interactions in an ecosystem	(i) investigate energy interactions in an ecosystem		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(6) Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:	(E) investigate and identify energy interactions in an ecosystem	(ii) identify energy interactions in an ecosystem		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(A) relate carrying capacity to population dynamics			
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(B) calculate birth rates and exponential growth of populations	(i) calculate birth rates of populations		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(B) calculate birth rates and exponential growth of populations	(ii) calculate exponential growth of populations		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(C) analyze and predict the effects of non-renewable resource depletion	(i) analyze the effects of non-renewable resource depletion		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(C) analyze and predict the effects of non-renewable resource depletion	(ii) predict the effects of non-renewable resource depletion		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(i) analyze the impact on populations of geographic locales due to diseases		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(ii) analyze the impact on populations of geographic locales due to birth rates		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(iii) analyze the impact on populations of geographic locales due to death rates		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(iv) analyze the impact on populations of geographic locales due to urbanization		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(v) analyze the impact on populations of geographic locales due to natural events		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(vi) make predictions about the impact on populations of geographic locales due to diseases		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(vii) make predictions about the impact on populations of geographic locales due to birth rates		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(viii) make predictions about the impact on populations of geographic locales due to death rates		
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(ix) make predictions about the impact on populations of geographic locales due to urbanization		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(7) Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:	(D) analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes	(x) make predictions about the impact on populations of geographic locales due to natural events		
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(A) analyze and describe the effects on areas impacted by natural events such as tectonic movement, volcanic events, fires, tornadoes, hurricanes, flooding, tsunamis, and population growth	(i) analyze the effects on areas impacted by natural events		
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(A) analyze and describe the effects on areas impacted by natural events such as tectonic movement, volcanic events, fires, tornadoes, hurricanes, flooding, tsunamis, and population growth	(ii) describe the effects on areas impacted by natural events		
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(B) explain how regional changes in the environment may have a global effect			
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(C) examine how natural processes such as succession and feedback loops restore habitats and ecosystems	(i) examine how natural processes restore habitats		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(C) examine how natural processes such as succession and feedback loops restore habitats and ecosystems	(ii) examine how natural processes restore ecosystems		
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(D) describe how temperature inversions impact weather conditions, including El Niño and La Niña oscillations	(i) describe how temperature inversions impact weather conditions, including El Niño oscillations		
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(D) describe how temperature inversions impact weather conditions, including El Niño and La Niña oscillations	(ii) describe how temperature inversions impact weather conditions, including La Niña oscillations		
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(E) analyze the impact of temperature inversions on global warming, ice cap and glacial melting, and changes in ocean currents and surface temperatures	(i) analyze the impact of temperature inversions on global warming		
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(E) analyze the impact of temperature inversions on global warming, ice cap and glacial melting, and changes in ocean currents and surface temperatures	(ii) analyze the impact of temperature inversions on ice cap melting		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(E) analyze the impact of temperature inversions on global warming, ice cap and glacial melting, and changes in ocean currents and surface temperatures	(iii) analyze the impact of temperature inversions on glacial melting		
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(E) analyze the impact of temperature inversions on global warming, ice cap and glacial melting, and changes in ocean currents and surface temperatures	(iv) analyze the impact of temperature inversions on changes in ocean currents		
(8) Science concepts. The student knows that environments change naturally. The student is expected to:	(E) analyze the impact of temperature inversions on global warming, ice cap and glacial melting, and changes in ocean currents and surface temperatures	(v) analyze the impact of temperature inversions on changes in surface temperatures		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(A) identify causes of air, soil, and water pollution, including point and nonpoint sources	(i) identify causes of air pollution		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(A) identify causes of air, soil, and water pollution, including point and nonpoint sources	(ii) identify causes of soil pollution		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(A) identify causes of air, soil, and water pollution, including point and nonpoint sources	(iii) identify causes of water pollution, including point sources		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(A) identify causes of air, soil, and water pollution, including point and nonpoint sources	(iv) identify causes of water pollution, including nonpoint sources		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(B) investigate the types of air, soil, and water pollution such as chlorofluorocarbons, carbon dioxide, pH, pesticide runoff, thermal variations, metallic ions, heavy metals, and nuclear waste	(i) investigate the types of air pollution		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(B) investigate the types of air, soil, and water pollution such as chlorofluorocarbons, carbon dioxide, pH, pesticide runoff, thermal variations, metallic ions, heavy metals, and nuclear waste	(ii) investigate the types of soil pollution		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(B) investigate the types of air, soil, and water pollution such as chlorofluorocarbons, carbon dioxide, pH, pesticide runoff, thermal variations, metallic ions, heavy metals, and nuclear waste	(iii) investigate the types of water pollution		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(C) examine the concentrations of air, soil, and water pollutants using appropriate units	(i) examine the concentrations of air pollutants using appropriate units		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(C) examine the concentrations of air, soil, and water pollutants using appropriate units	(ii) examine the concentrations of soil pollutants using appropriate units		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(C) examine the concentrations of air, soil, and water pollutants using appropriate units	(iii) examine the concentrations of water pollutants using appropriate units		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(D) describe the effect of pollution on global warming, glacial and ice cap melting, greenhouse effect, ozone layer, and aquatic viability	(i) describe the effect of pollution on global warming		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(D) describe the effect of pollution on global warming, glacial and ice cap melting, greenhouse effect, ozone layer, and aquatic viability	(ii) describe the effect of pollution on glacial melting		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(D) describe the effect of pollution on global warming, glacial and ice cap melting, greenhouse effect, ozone layer, and aquatic viability	(iii) describe the effect of pollution on ice cap melting		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(D) describe the effect of pollution on global warming, glacial and ice cap melting, greenhouse effect, ozone layer, and aquatic viability	(iv) describe the effect of pollution on greenhouse effect		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(D) describe the effect of pollution on global warming, glacial and ice cap melting, greenhouse effect, ozone layer, and aquatic viability	(v) describe the effect of pollution on ozone layer		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(D) describe the effect of pollution on global warming, glacial and ice cap melting, greenhouse effect, ozone layer, and aquatic viability	(vi) describe the effect of pollution on aquatic viability		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(E) evaluate the effect of human activities, including habitat restoration projects, species preservation efforts, nature conservancy groups, hunting, fishing, ecotourism, all terrain vehicles, and small personal watercraft, on the environment	(i) evaluate the effect of human activities, including habitat restoration projects, on the environment		

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TEKS (Knowledge and Skills)	Student Expectation	Breakout	Element	Subelement
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(E) evaluate the effect of human activities, including habitat restoration projects, species preservation efforts, nature conservancy groups, hunting, fishing, ecotourism, all terrain vehicles, and small personal watercraft, on the environment	(ii) evaluate the effect of human activities, including species preservation efforts, on the environment		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(E) evaluate the effect of human activities, including habitat restoration projects, species preservation efforts, nature conservancy groups, hunting, fishing, ecotourism, all terrain vehicles, and small personal watercraft, on the environment	(iii) evaluate the effect of human activities, including nature conservancy groups, on the environment		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(E) evaluate the effect of human activities, including habitat restoration projects, species preservation efforts, nature conservancy groups, hunting, fishing, ecotourism, all terrain vehicles, and small personal watercraft, on the environment	(iv) evaluate the effect of human activities, including hunting, on the environment		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(E) evaluate the effect of human activities, including habitat restoration projects, species preservation efforts, nature conservancy groups, hunting, fishing, ecotourism, all terrain vehicles, and small personal watercraft, on the environment	(v) evaluate the effect of human activities, including fishing, on the environment		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(E) evaluate the effect of human activities, including habitat restoration projects, species preservation efforts, nature conservancy groups, hunting, fishing, ecotourism, all terrain vehicles, and small personal watercraft, on the environment	(vi) evaluate the effect of human activities, including ecotourism, on the environment		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(E) evaluate the effect of human activities, including habitat restoration projects, species preservation efforts, nature conservancy groups, hunting, fishing, ecotourism, all terrain vehicles, and small personal watercraft, on the environment	(vii) evaluate the effect of human activities, including all terrain vehicles, on the environment		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(E) evaluate the effect of human activities, including habitat restoration projects, species preservation efforts, nature conservancy groups, hunting, fishing, ecotourism, all terrain vehicles, and small personal watercraft, on the environment	(viii) evaluate the effect of human activities, including small personal watercraft, on the environment		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(F) evaluate cost-benefit trade-offs of commercial activities such as municipal development, farming, deforestation, over-harvesting, and mining	(i) evaluate cost-benefit trade-offs of commercial activities		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(G) analyze how ethical beliefs can be used to influence scientific practices such as methods for increasing food production	(i) analyze how ethical beliefs can be used to influence scientific practices		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(H) analyze and evaluate different views on the existence of global warming	(i) analyze different views on the existence of global warming		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(H) analyze and evaluate different views on the existence of global warming	(ii) evaluate different views on the existence of global warming		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(I) discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards	(i) discuss the impact of research on social ethics in [various] situations		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(I) discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards	(ii) discuss the impact of technology on social ethics in [various] situations		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(I) discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards	(iii) discuss the impact of research on legal practices in [various] situations		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(I) discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards	(iv) discuss the impact of technology on legal practices in [various] situations		

Subject	Chapter 112. Science			
Course Title	**§112.37. Environmental Systems, Beginning with School Year 2010-2011 (One Credit).**			
TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(J) research the advantages and disadvantages of "going green" such as organic gardening and farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars	(i) research the advantages of "going green"		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(J) research the advantages and disadvantages of "going green" such as organic gardening and farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars	(ii) research the disadvantages of "going green"		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(i) analyze past local legislation		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(ii) analyze present local legislation		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(iii) analyze past state legislation		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(iv) analyze present state legislation, including Texas automobile emissions regulations		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(v) analyze past national legislation, including the National Park Service Act		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(vi) analyze past national legislation, including the Clean Air Act		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(vii) analyze past national legislation, including the Clean Water Act		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(viii) analyze past national legislation, including the Soil and Water Resources Conservation Act		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(ix) analyze past national legislation, including the Endangered Species Act		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(K) analyze past and present local, state, and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act	(x) analyze present national legislation		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(L) analyze past and present international treaties and protocols such as the environmental Antarctic Treaty System, Montreal Protocol, and Kyoto Protocol	(i) analyze past international treaties		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(L) analyze past and present international treaties and protocols such as the environmental Antarctic Treaty System, Montreal Protocol, and Kyoto Protocol	(ii) analyze past international protocols		
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(L) analyze past and present international treaties and protocols such as the environmental Antarctic Treaty System, Montreal Protocol, and Kyoto Protocol	(iii) analyze present international treaties		

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TEKS (Knowledge and Skills)	**Student Expectation**	**Breakout**	**Element**	**Subelement**
(9) Science concepts. The student knows the impact of human activities on the environment. The student is expected to:	(L) analyze past and present international treaties and protocols such as the environmental Antarctic Treaty System, Montreal Protocol, and Kyoto Protocol	(iv) analyze present international protocols		