

**Side-by-Side Comparison of the Texas Educational Knowledge and Skills (TEKS)
and Louisiana Grade Level Expectations (GLEs)**

SCIENCE: Grade 8

TEKS	Comments	Louisiana GLE
(8.1) Scientific Processes. The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.		A. The Abilities Necessary to do Scientific Inquiry (SI)
(8.1.A) demonstrate safe practices during field and laboratory investigations; and		<p>SI GLE 23. Use relevant safety procedures and equipment to conduct scientific investigations (SI-M-A8)</p> <p>SI GLE 24. Provide appropriate care and utilize safe practices and ethical treatment when animals are involved in scientific field and laboratory research (SI-M-A8)</p>
(8.1.B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	<p><i>TAKS Objective</i></p> <p><i>Not specifically addressed in LA</i></p>	
(8.2) Scientific Processes. The student uses scientific inquiry methods during field and laboratory investigations.		A. The Abilities Necessary to do Scientific Inquiry(SI)
(8.2.A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting and using equipment and technology;	<p><i>TAKS Objective</i></p> <p><i>Similar/Implied</i></p>	<p>SI GLE 1. Generate testable questions about objects, organisms, and events that can be answered through scientific investigation (SI-M-A1)</p> <p>SI GLE 2. Identify problems, factors, and questions that must be considered in a scientific investigation (SI-M-A1)</p> <p>SI GLE 4. Design, predict outcomes, and conduct experiments to answer guiding questions (SI-M-A2)</p> <p>SI GLE 5. Identify independent variables, dependent variables, and variables that should be controlled in designing an experiment (SI-M-A2)</p> <p>SI GLE 6. Select and use appropriate equipment, technology, tools, and metric system units of measurement to make observations (SI-M-A3)</p> <p>SI GLE 20. Write clear, step-by-step instructions that others can</p>

TEKS	Comments	Louisiana GLE
		<p>follow to carry out procedures or conduct investigations (SI-M-A7)</p> <p>SI GLE 37. Critique and analyze their own inquiries and the inquiries of others (SI-M-B5)</p> <p>SI GLE 26. Use and describe alternate methods for investigating different types of testable questions (SI-M-B1)</p> <p>SI GLE 28. Recognize that investigations generally begin with a review of the work of others (SI-M-B2)</p>
(8.2.B) collect data by observing and measuring;	<p><i>TAKS Objective</i></p> <p>Implied</p>	<p>SI GLE 7. Record observations using methods that complement investigations (e.g., journals, tables, charts) (SI-M-A3)</p> <p>SI GLE 8. Use consistency and precision in data collection, analysis, and reporting (SI-M-A3)</p>
(8.2.C) organize, analyze, evaluate, make inferences, and predict trends from direct and indirect evidence;	<p><i>TAKS Objective</i></p> <p>Implied</p>	<p>SI GLE 12. Use data and information gathered to develop an explanation of experimental results (SI-M-A4)</p> <p>SI GLE 13. Identify patterns in data to explain natural events (SI-M-A4)</p> <p>SI GLE 16. Use evidence to make inferences and predict trends (SI-M-A5)</p>
	<p><i>Not specifically addressed in TX</i></p>	<p>3. Use a variety of sources to answer questions (SI-M-A1)</p>
(8.2.D) communicate valid conclusions; and	<p><i>TAKS Objective</i></p> <p>Implied</p>	<p>SI GLE 19. Communicate ideas in a variety of ways (e.g., symbols, illustrations, graphs, charts, spreadsheets, concept maps, oral and written reports, equations) (SI-M-A7)</p> <p>SI GLE 22. Use evidence and observations to explain and communicate the results of investigations (SI-M-A7)</p>
(8.2.E) construct graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate data.	<p><i>TAKS Objective</i></p> <p>Implied</p>	<p>SI GLE 9. Use computers and/or calculators to analyze and interpret quantitative data (SI-M-A3)</p> <p>SI GLE 11. Construct, use, and interpret appropriate graphical representations to collect, record, and report data (e.g., tables, charts, circle graphs, bar and line graphs, diagrams, scatter plots, symbols) (SI-M-A4)</p> <p>ESS GLE 21. Read and interpret topographic maps (ESS-M-A9)</p>

TEKS	Comments	Louisiana GLE
		<p>SI GLE 31. Recognize that there is an acceptable range of variation in collected data (SI-M-B3)</p>
	<p><i>Addressed in TX in 6th 6.4 B</i></p>	<p>SI GLE 32. Explain the use of statistical methods to confirm the significance of data (e.g., mean, median, mode, range) (SI-M-B3)</p>
<p>(8.3) Scientific Processes. The student uses critical thinking and scientific problem solving to make informed decisions.</p>		<p>B. Understanding Scientific Inquiry (SI)</p>
<p>(8.3.A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;</p>	<p><i>TAKS Objective</i> Implied</p>	<p>SI GLE 10. Identify the difference between description and explanation (SI-M-A4)</p> <p>SI GLE 17. Recognize that there may be more than one way to interpret a given set of data, which can result in alternative scientific explanations and predictions (SI-M-A6)</p> <p>SI GLE 18. Identify faulty reasoning and statements that misinterpret or are not supported by the evidence (SI-M-A6)</p> <p>SI GLE 21. Distinguish between observations and inferences (SI-M-A7)</p> <p>SI GLE 25. Compare and critique scientific investigations (SI-M-B1)</p> <p>SI GLE 27. Recognize that science uses processes that involve a logical and empirical, but flexible, approach to problem solving (SI-M-B1)</p> <p>SI GLE 35. Explain how skepticism about accepted scientific explanations (i.e., hypotheses and theories) leads to new understanding (SI-M-B5)</p>
	<p><i>Addressed in TX in 5th 5.4 B, 4th 4.4 B, 3rd 3.4 B</i></p>	<p>SI GLE 36. Explain why an experiment must be verified through multiple investigations and yield consistent results before the findings are accepted (SI-M-B5)</p>
<p>(8.3.B) draw inferences based on data related to promotional materials for products and services;</p>	<p><i>TAKS Objective</i></p>	
<p>(8.3.C) represent the natural world using models and identify their limitations;</p>	<p><i>TAKS Objective</i></p>	<p>SI GLE 14. Develop models to illustrate or explain conclusions reached through investigation (SI-M-A5)</p> <p>SI GLE 15. Identify and explain the limitations of models used to represent the natural world (SI-M-A5)</p>

TEKS	Comments	Louisiana GLE
		<p>SI GLE 33 Evaluate models, identify problems in design, and make recommendations for improvement.</p>
<p>(8.3.D) evaluate the impact of research on scientific thought, society, and the environment; and</p>	<p><i>similar</i></p>	<p>SI GLE 3. Use a variety of sources to answer questions (SI-M-A1)</p> <p>SI GLE 10. Identify the difference between description and explanation (SI-M-A4)</p> <p>SI GLE 21. Distinguish between observations and inferences (SI-M-A7)</p> <p>SI GLE 26. Use and describe alternate methods for investigating different types of testable questions (SI-M-B1)</p> <p>SI GLE 28. Recognize that investigations generally begin with a review of the work of others (SI-M-B2)</p> <p>SI GLE 29. Explain how technology can expand the senses and contribute to the increase and/or modification of scientific knowledge (SI-M-B3)</p> <p>SI GLE 31. Recognize that there is an acceptable range of variation in collected data (SI-M-B3)</p> <p>SI GLE 32. Explain the use of statistical methods to confirm the significance of data (e.g., mean, median, mode, range) (SI-M-B3)</p> <p>SI GLE 34. Recognize the importance of communication among scientists about investigations in progress and the work of others (SI-M-B5)</p> <p>SI GLE 36. Explain why an experiment must be verified through multiple investigations and yield consistent results before the findings are accepted (SI-M-B5)</p> <p>SI GLE 37. Critique and analyze their own inquiries and the inquiries of others (SI-M-B5)</p> <p>SI GLE 39. Identify areas in which technology has changed human lives (e.g., transportation, communication, geographic information systems, DNA fingerprinting) (SI-M-B7)</p> <p>SI GLE 40. Evaluate the impact of research on scientific thought,</p>

TEKS	Comments	Louisiana GLE
		society, and the environment (SI-M-B7)
	<i>Not specifically addressed in TX</i>	<p>SI GLE 30. Describe why all questions cannot be answered with present technologies (SI-M-B3)</p> <p>SI GLE 34. Recognize the importance of communication among scientists about investigations in progress and the work of others (SI-M-B5)</p>
	<i>Not specifically addressed in TX</i>	SI GLE 38. Explain that, through the use of scientific processes and knowledge, people can solve problems, make decisions, and form new ideas (SI-M-B6)
(8.3.E) connect Grade 8 science concepts with the history of science and contributions of scientists.		
(8.4) The student knows how to use a variety of tools and methods to conduct science inquiry.		
(8.4.A) collect, record, and analyze information using tools including beakers, Petri dishes, meter sticks, graduated cylinders, weather instruments, hot plates, dissecting equipment, test tubes, safety goggles, spring scales, balances, microscopes, telescopes, thermometers, calculators, field equipment, computers, computer probes, water test kits, and timing devices; and	<p>TAKS Objective</p> <p>Not specifically addressed in LA</p>	
(8.4.B) extrapolate from collected information to make predictions.	<p>TAKS Objective</p> <p>Similar</p>	SI GLE 16 Use evidence to make inferences and predict trends (SI-M-A5)
(8.5) The student knows that relationships exist between science and technology.		Understanding Scientific Inquiry (SI)
(8.5.A) identify a design problem and propose a solution;	<i>Technology design is not addressed in LA</i>	
(8.5.B) design and test a model to solve the problem; and	<i>Not specifically addressed in TX</i>	
(8.5.C) evaluate the model and make recommendations for improving the model.	Similar	SI GLE 33. Evaluate models, identify problems in design, and make recommendations for improvement (SI-M-B4)
(8.6) Science Concepts. The student knows that interdependence occurs among living systems.		
(8.6.A) describe interactions among systems in the human	TAKS Objective LA	

TEKS	Comments	Louisiana GLE
organism;	<i>addresses this in 7th grade #10</i>	
(8.6.B) identify feedback mechanisms that maintain equilibrium of systems such as body temperature, turgor pressure, and chemical reactions; and	<i>TAKS Objective Not specifically addressed in LA</i>	
(8.6.C) describe interactions within ecosystems.	<i>TAKS Objective Addressed in 7th grade #27</i>	
(8.7) Science Concepts The student knows that there is a relationship between force and motion.		
(8.7.A) demonstrate how unbalanced forces cause changes in the speed or direction of an object's motion; and	<i>TAKS Objective LA introduces concept in 5th grade #9</i>	
(8.7.B) recognize that waves are generated and can travel through different media.	<i>TAKS Objective LA compares wave types and characteristics in 6th grade #31 & 32</i>	
(8.8) Science Concepts. The student knows that matter is composed of atoms.		Properties and Changes of Properties in Matter (PS)
(8.8.A) describe the structure and parts of an atom; and	<i>TAKS Objective LA addresses atomic structure in 6th grade #3</i>	
(8.8.B) identify the properties of an atom including mass and electrical charge.	<i>TAKS Objective LA addresses atomic mass in 6th grade #10</i>	PS GLE 3. Define ions and describe them in terms of the number of protons, electrons, and their charges (PS-M-A2)
(8.9) The student knows that substances have chemical and physical properties.		Properties and Changes of Properties in Matter (PS) Motions and Forces (PS) Structure of Earth (PS)
(8.9.A) demonstrate that substances may react chemically to form new substances;	<i>TAKS Objective Addressed in LA 6th grade #5</i>	
(8.9.B) interpret information on the periodic table to understand that physical properties are used to group elements;	<i>TAKS Objective Not specifically addressed in LA in grades 5-8</i>	

TEKS	Comments	Louisiana GLE
(8.9.C) recognize the importance of formulas and equations to express what happens in a chemical reaction; and	TAKS Objective Not specifically addressed in LA in grades 5-8	
(8.9.D) identify that physical and chemical properties influence the development and application of everyday materials such as cooking surfaces, insulation, adhesives, and plastics.	Not specifically addressed in LA	
	Not specifically addressed in TX	PS GLE 1. Determine that all atoms of the same element are similar to but different from atoms of other elements (PS-M-A2)
	Not specifically addressed in TX	PS GLE 2. Recognize that elements with the same number of protons may or may not have the same charge (PS-M-A2)
	Not specifically addressed in TX HS Physics 6 F	PS GLE 4. Demonstrate that Earth has a magnetic field by using magnets and compasses (PS-M-B2)
	Not specifically addressed in TX HS Physics 6 A	PS GLE 5. Define gravity and describe the relationship among the force of gravity, the mass of objects, and the distance between objects (PS-M-B2)
	Not specifically addressed in TX until HS Physics 6 A	PS GLE 6. Predict how the gravitational attraction between two masses will increase or decrease when changes are made in the masses or in the distance between the objects (PS-M-B2)
	Not specifically addressed in TX until HS IPC 4A	PS GLE 7. Explain the relationships among force, mass, and acceleration (PS-M-B5)
	Not specifically addressed in TX	ESS GLE 8. Identify and describe the four density layers of Earth (ESS-M-A1)
	Not addressed until HS GMO 6 A & B	ESS GLE 9. Explain the historical development of the theories of plate tectonics, including continental drift and sea-floor spreading (ESS-M-A2)
	Not specifically addressed in TX	ESS GLE 10. Illustrate the movement of convection currents (ESS-M-A2) & B
(8.10) Science Concepts. The student knows that complex interactions occur between matter and energy.		
(8.10.A) illustrate interactions between matter and energy including specific heat;	TAKS Objective Not specifically addressed in LA	
(8.10.B) describe interactions among solar, weather, and	TAKS Objective	ESS GLE 23. Explain the processes of evaporation, condensation,

TEKS	Comments	Louisiana GLE
ocean systems; and	<i>Implied</i>	<p>precipitation, infiltration, transpiration, and sublimation as they relate to the water cycle (ESS-M-A10)</p> <p>ESS GLE 24. Investigate and explain how given factors affect the rate of water movement in the water cycle (e.g., climate, type of rock, ground cover) (ESS-M-A10)</p> <p>ESS GLE 25. Explain and give examples of how climatic conditions on Earth are affected by the proximity of water (ESS-M-A11)</p> <p>ESS GLE 26. Describe and illustrate the layers of Earth's atmosphere (ESS-M-A11)</p> <p>ESS GLE 27. Identify different air masses, jet streams, global wind patterns, and other atmospheric phenomena and describe how they relate to weather events, such as El Niño and La Niña (ESS-M-A12)</p>
(8.10.C) identify and demonstrate that loss or gain of heat energy occurs during exothermic and endothermic chemical reactions.	<i>Addressed in LA 6th grade #40</i>	
(8.11) The student knows that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organisms.		Earth History (ESS)
(8.11.A) identify that change in environmental conditions can affect the survival of individuals and of species;	<i>TAKS Objective Addressed in LA in 7th grade # 32</i>	
	<i>Not specifically addressed in TX</i>	ESS GLE 31. Compare fossils from different geologic eras and areas of Earth to show that life changes over time (ESS-M-B1)
(8.11.B) distinguish between inherited traits and other characteristics that result from interactions with the environment; and	<i>TAKS Objective Not specifically addressed in LA</i>	
(8.11.C) make predictions about possible outcomes of various genetic combinations of inherited characteristics.	<i>TAKS Objective Addressed in LA 7th grade ESS GLE 19-21</i>	
(8.12) The student knows that cycles exist in Earth systems.		Structure of Earth (ESS)

TEKS	Comments	Louisiana GLE
(8.12.A) analyze and predict the sequence of events in the lunar and rock cycles;	<p><i>TAKS Objective</i></p> <p><i>TX emphasizes predicting events also</i></p>	<p>ESS GLE 18. Describe how sedimentary, igneous, and metamorphic rocks form and change in the rock cycle (ESS-M-A6)</p> <p>ESS GLE 40 Identify and illustrate the relative positions of earth, the Moon and the Sun during eclipses and phases of the moon (ESS-M-C4)</p>
	<p><i>Not specifically addressed in TX TEKS but commonly covered as part of 8.12 A</i></p>	<p>ESS GLE 17. Describe the properties of minerals (e.g., color, luster, hardness, streak) (ESS-M-A5)</p>
	<p><i>Addressed in 4th grade 4.10 B</i></p>	<p>ESS GLE 30. Interpret a geologic timeline (ESS-M-B1)</p>
(8.12.B) relate the role of oceans to climatic changes; and		<p>ESS GLE 25. Explain and give examples of how climatic conditions on Earth are affected by the proximity of water (ESS-M-A11)</p>
(8.12.C) predict the results of modifying the Earth's nitrogen, water, and carbon cycles.	<p><i>TAKS Objective LA addresses nitrogen cycle importance in 7th grade #41, carbon 7th grade #4; not modifying the cycles</i></p>	
	<p><i>Not specifically addressed in TX - 6.8 examines matter & energy interaction in the water cycle</i></p>	<p>ESS GLE 23. Explain the processes of evaporation, condensation, precipitation, infiltration, transpiration, and sublimation as they relate to the water cycle (ESS-M-A10)</p>
	<p><i>Not specifically addressed in TX - 6.8 examines matter & energy interaction in the water cycle</i></p>	<p>ESS GLE 24. Investigate and explain how given factors affect the rate of water movement in the water cycle (e.g., climate, type of rock, ground cover) (ESS-M-A10)</p>
	<p><i>Implied in TX 6.14 B</i></p>	<p>ESS GLE 26. Describe and illustrate the layers of Earth's atmosphere (ESS-M-A11)</p>
	<p><i>Implied in TX 6.14 B</i></p>	<p>ESS GLE 27. Identify different air masses, jet streams, global wind patterns, and other atmospheric phenomena and describe how they relate to weather events, such as El Niño and La Niña (ESS-M-A12)</p>
	<p><i>Not specifically</i></p>	<p>ESS GLE 28. Use historical data to plot the movement of</p>

TEKS	Comments	Louisiana GLE
	<i>addressed in TX</i>	hurricanes and explain events or conditions that affected their paths (ESS-M-A12)
	<i>Not specifically addressed in TX</i>	ESS GLE 29. Make predictions about future weather conditions based on collected weather data (ESS-M-A12)
(8.13) The student knows characteristics of the universe.		Earth History (ESS) Earth in the Solar System (ESS)
(8.13.A) describe characteristics of the universe such as stars and galaxies;	<i>TAKS Objective Addressed in LA HS Earth Science 24</i>	
(8.13.B) explain the use of light years to describe distances in the universe; and	<i>Not specifically addressed in LA</i>	
(8.13.C) research and describe historical scientific theories of the origin of the universe.	<i>Not specifically addressed in LA</i>	
	<i>Not specifically addressed in TX in 8th grade</i>	ESS GLE 32. Interpret a timeline starting with the birth of the solar system to the present day (ESS-M-B2) ESS GLE 36. Describe the life cycle of a star and predict the next likely stage of the Sun (ESS-M-C1)
	<i>Addressed in TX HS Astronomy 6 C</i>	ESS GLE 37. Use a Hertzsprung-Russell diagram and other data to compare the approximate mass, size, luminosity, temperature, structure, and composition of the Sun to other stars (ESS-M-C1)
	<i>Addressed in TX HS Astronomy 9 B</i>	ESS GLE 38. Use data to compare the planets in terms of orbit, size, composition, density, rotation, revolution, and atmosphere (ESS-M-C2)
	<i>Addressed in TX HS Astronomy 9 D</i>	ESS GLE 39. Relate Newton's laws of gravity to the motions of celestial bodies and objects on Earth (ESS-M-C3)
	<i>7.13 B</i>	ESS GLE 40. Identify and illustrate the relative positions of Earth, the Moon, and the Sun during eclipses and phases of the Moon (ESS-M-C4)
	<i>Addressed in TX HS Astronomy 10 C</i>	ESS GLE 41. Describe the effects of the Moon on tides (ESS-M-C4)
	<i>Implied in TX HS Astronomy 9 B</i>	ESS GLE 42. Interpret a scale model of the solar system (ESS-M-C5)
	<i>Introduced in TX 4.11 B</i>	ESS GLE 43. Identify the processes involved in the creation of

TEKS	Comments	Louisiana GLE
		land and sea breezes (ESS-M-C6)
	<i>Introduced in TX 4.11 B</i>	ESS GLE 44. Describe how unequal heating of Earth's surface affects movement of air masses and water in the atmosphere and hydrosphere (ESS-M-C6)
	7.13 A	ESS GLE 45. Explain how seasonal changes are caused by the tilt of Earth as it rotates on its axis and revolves around the Sun (ESS-M-C7)
	7.13 A	ESS GLE 46. Illustrate and explain how the angle at which sunlight strikes Earth produces changes in the seasons and length of daylight (ESS-M-C7)
	<i>Implied in 7.13 A</i>	ESS GLE 47. Compare the relative distances from Earth to the Sun on the first day of summer and the first day of winter (ESS-M-C7)
	<i>Addressed in TX HS Astronomy 7 E</i>	ESS GLE 48. Communicate ways that information from space exploration and technological research have advanced understanding about Earth, the solar system, and the universe (ESS-M-C8)
	<i>Addressed in TX HS Astronomy 7 E</i>	ESS GLE 49. Identify practical applications of technological advances resulting from space exploration and scientific and technological research (ESS-M-C8)
(8.14) The student knows that natural events and human activities can alter Earth systems.		Structure of Earth (ESS) Earth History (ESS) Science and the Environment (SE)
(8.14.A) predict land features resulting from gradual changes such as mountain building, beach erosion, land subsidence, and continental drift;	<i>TAKS Objective TX emphasizes the use of the most current theory - plate tectonics LA GLE's are implied in TX 8.14</i>	ESS GLE 11. Illustrate the movements of lithospheric plates as stated in the plate tectonics theory (ESS-M-A2). ESS GLE 12. Identify the edges of plate boundaries as likely areas of earthquakes and volcanic action (ESS-M-A3) ESS GLE 13. Describe the processes responsible for earthquakes and volcanoes and identify the effects of these processes (e.g., faulting, folding) (ESS-M-A3) ESS GLE 19. Determine the results of constructive and destructive forces upon landform development with the aid of geologic maps of Louisiana (ESS-M-A7)

TEKS	Comments	Louisiana GLE
		ESS GLE 35. Describe how processes seen today are similar to those in the past (e.g., weathering, erosion, lithospheric plate movement) (ESS-M-B3)
	Not specifically addressed in grade 8 in TX	ESS GLE 14. Distinguish between chemical and mechanical (physical) weathering and identify the role of weathering agents (e.g., wind, water, ice, gravity) (ESS-M-A4)
	Not specifically addressed in TX implied in 3.11 A	ESS GLE 15. Illustrate the role of organic processes in soil formation (ESS-M-A4)
	Not specifically addressed in TX	ESS GLE 16. Compare the physical characteristics of rock and mineral specimens to observe that a rock is a mixture of minerals (ESS-M-A5)
	Not specifically addressed in TX	ESS GLE 22. Compare ocean floor topography to continental topography by using topographic maps (ESS-M-A9)
	Not specifically addressed in TX	ESS GLE 33. Use historical data to draw conclusions about the age of Earth (e.g., half-life, rock strata) (ESS-M-B2)
	Implied in TX 5.11 B	ESS GLE 34. Apply geological principles to determine the relative ages of rock layers (e.g., original horizontality, superposition, cross-cutting relationships) (ESS-M-B3)
(8.14.B) analyze how natural or human events may have contributed to the extinction of some species; and	TAKS Objective Not specifically addressed in LA	
(8.14.C) describe how human activities have modified soil, water, and air quality.	TAKS Objective Similar-LA includes natural processes	ESS GLE 20. Describe how humans' actions and natural processes have modified coastal regions in Louisiana and other locations (ESS-M-A8)
	Not specifically addressed in TX	SE GLE 50. Illustrate possible point and non-point source contributions to pollution and natural or human-induced pathways of a pollutant in an ecosystem (SE-M-A3)
	Not specifically addressed in TX	SE GLE 51. Analyze the consequences of human activities on global Earth systems (SE-M-A4)
	Not specifically addressed in TX	SE GLE 52. Describe the relationship between plant type and soil compatibility (SE-M-A9)
	Not specifically addressed in TX	SE GLE 53. Distinguish among several examples of erosion (e.g., stream bank, topsoil, coastal) and describe common preventive measures (SE-M-A10)