

Student Expectations

Both Texas and Louisiana used the *National Science Education Standards* and Project 2061's *Benchmarks for Science Literacy* and *Science for All Americans* to develop comprehensive plans for K-12 science education. Due to these common origins, student expectations are very similar. Both states specify process skills separately from content, yet they clearly intend for both areas to be addressed simultaneously in the classroom throughout the school year. They also advise that science concepts be introduced and mastered in an interdisciplinary format.

While the Texas Educational Knowledge and Skills (TEKS) address science content in a relatively integrated fashion, the Louisiana Grade Level Expectations (GLEs) cluster expectations for each strand: Physical Science (PS), Life Science (LS), Earth and Space Science (ESS), and Science and the Environment (SE). Though Texas integrates all four content strands at Grade 8, Louisiana focuses almost exclusively on Earth and Space Science concepts, with some attention given to Physical Science and Science and the Environment. Due to this specific focus, there are no GLEs related to Life Science, however there are more expectations in the area of Earth and Space Science than in the TEKS. Some of the unmatched expectations are addressed in earlier or later grades.

Educators should particularly note that whereas unifying themes are explicitly identified and addressed separately in the TEKS, Louisiana interweaves these concepts throughout their GLEs and Benchmarks.

Assessment

Both Texas and Louisiana assess science in the eighth grade. However, the Louisiana Educational Assessment Program (LEAP) targets the 8th grade GLE's, while Texas assesses in grade 8 student expectations in grades 6 through 8. The broad Knowledge and Skills (KS) statements noted as TAKS objectives describe what students should know and be able to do for the Middle School Science TAKS.

Even though the learning expectations are very similar, there are few Texas Assessment of Knowledge and Skills (TAKS) objectives that match exactly with the Louisiana Grade Level Expectations (GLE's). For example, TAKS Objective 8.8.B requires students to identify the properties of atoms including mass and electrical charge, while Louisiana GLEs have them define ions and describe them in terms of number of protons, electrons and their charges. A careful review of the Grade 8 side-by-side analysis will provide more details about the differences of expectations.

Coding in the Side-by-Side Analysis

Due to the degree of specificity of the Louisiana standards, some of the Texas Student Expectations (SE's) are matched to more than one Louisiana GLE. For example:

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| <p>TEKS 8.2 A plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting and using equipment and technology</p> | <p>GLE 1. Generate testable questions about objects, organisms, and events that can be answered through scientific investigation (SI-M-A1)</p> <p>GLE 2. Identify problems, factors, and questions that must be considered in a scientific investigation (SI-M-A1)</p> <p>GLE 4. Design, predict outcomes, and conduct experiments to answer guiding questions (SI-M-A2)</p> <p>GLE 5. Identify independent variables, dependent variables, and variables that should be controlled in designing an experiment (SI-M-A2)</p> |
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- LS = Life Science
- ESS = Earth and Space Science
- SE = Science in the Environment

Regarding the codes and content in the middle column on the document:

- Notations regarding TAKS objectives are included in the analysis column.
- Notations are made when concepts are addressed in another grade level in Louisiana.
- *Implied* refers to components of concepts that are understood and addressed in the context of the statement.
- *Similar* means the concept is worded differently.
- *Not specifically addressed* refers to concepts that may be covered, but not necessarily addressed in all classrooms by all teachers.

The number in parentheses following each GLE statement is a reference to the Louisiana Benchmark statement. For example, SI-M-A5 refers to the Science as Inquiry Standard, Middle School A5 Substandard A, benchmark 5—developing models and predictions using the relationships between data and explanations. Benchmark statements are similar to the Texas Knowledge and Skill statements. More information about the Louisiana Benchmarks is available from the Louisiana State Department of Education: <http://www.doe.state.la.us/lde/uploads/2911.pdf>.

Louisiana groups Science as Inquiry (SI) expectations at the Middle School level (Grades 5-8) into one strand. These 40 GLEs are generally analogous to the Texas Process Standards. For Grade 8, there are an additional 53 content expectations. Note that the prefixes appearing before the GLE refer to the strand:

- SI = Science As Inquiry
- PS = Physical Science