

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). Both states identify inquiry or process skills, and emphasize that these be developed as the means for acquiring greater depth in content knowledge. For example, in the Louisiana Physical Science (PS) strand students compare physical and chemical properties of materials, and in the Earth and Space Science (ESS) strand, students demonstrate the results of constructive and destructive forces using models or illustrations.

One distinction in Louisiana's fifth-grade content standards is the large section of learning expectations on the Solar System, which Texas does not cover in such detail at this level. Other notable differences are associated with when certain concepts are introduced. For example,

Louisiana's GLE 3, concerning atomic structure, is not addressed in Texas until Grade 8. Likewise, GLEs 19 and 20, concerning cellular structures and processes, are not addressed in Texas until Grade 6.

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

Science assessment methodologies in Texas and Louisiana differ in many ways. At Grade 5, Louisiana students are tested using the Integrated Louisiana Educational Assessment Program (iLEAP). Texas fifth-graders take Texas Assessment of Knowledge and Skills (TAKS). The Louisiana test specifically targets the fifth-grade GLEs, while the Texas test is a comprehensive sampling of identified student expectations from Grades 2 through 5.

Though the Texas and Louisiana science standards are similar overall, few of the TEKS student expectations and corresponding TAKS objectives match perfectly with the Louisiana GLEs. For example, TEKS (5.6.C) has students compare the life cycles of plants and animals in general, while the corresponding Louisiana GLEs focus specifically on the life cycles of amphibians. A careful review of the Grade 5 side-by-side analysis will provide more information about such variations.

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:

<p>TEKS 5.3.C The student is expected to represent the natural world using models and identify their limitations.</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> <p>SI GLE 33. Evaluate models, identify problems in design, and make recommendations for improvement (SI-M-B4)</p>
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The number in parentheses following each GLE statement is a reference to the Louisiana Benchmark statement. In the first GLE above, 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 5, there are an additional 51 content

expectations. Note that the prefixes appearing before the GLE refer to the strand:

- SI = Science As Inquiry
- PS = Physical Science
- 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.