

How will we prepare students for academic success?

Our state has adopted new science standards that are based on *A Framework for K-12 Science Education*, by National Research Council, because we understand that a robust science education in elementary school will pave the way for increased opportunities in middle school, high school, and college. The recently adopted Science TEKS are scheduled for state implementation beginning with the 2024-2025 school year.

The Science Texas Essential Knowledge and Skills (TEKS) enable our teachers to offer all students interactive science instruction that promotes analysis and interpretation of data, critical thinking, problem solving, and connections across science disciplines—with a high set of expectations for achievement in grades 6-8.

A quality science education can help expand opportunities for all our students.

These science standards complement our English/ Language Arts and mathematics standards, enabling classroom instruction to reflect a clearer picture of the real world, where solving problems often requires skills and knowledge from multiple disciplines. Further, these standards are designed to benefit and engage all students, whether they currently lack access to a quality science education or already excel in science subjects.

What is our vision for science education?

Texas' standards reflect the latest research and advances in modern science. In order to equip students to think critically, analyze information, and solve complex problems, the standards are arranged such that—from elementary through high school—students have multiple opportunities to build on the knowledge and skills gained during each grade, by revisiting important concepts and expanding their understanding of connections across scientific domains. Parents should understand that while some content might be similar to the past, it may look different from how they were taught.

As the current science standards are implemented in schools and districts, they will enable students to:

- Develop a deeper understanding of science beyond memorizing facts, and
- Experience similar scientific and engineering practices as those used by professionals in the field.



How will students learn science in the classroom?

Each year, students in Texas should be able to demonstrate greater capacity for connecting knowledge across, and between, the physical sciences, life sciences, earth and space sciences, and engineering design.

Engineering design during grades 6-8 may explore how students can refine criteria and constraints when designing engineering solutions. Such lessons will help prepare students for advanced classes- like mechanics, robotics, or engineering-enriched science courses- that they might encounter in high school and/or college.

During grades 6-8, your child will begin to form deeper connections between concepts and skills previously learned in grades 3-5, such as collecting evidence and drawing conclusions, understanding relationships between objects, and critical thinking that leads to designing effective solutions for problems.

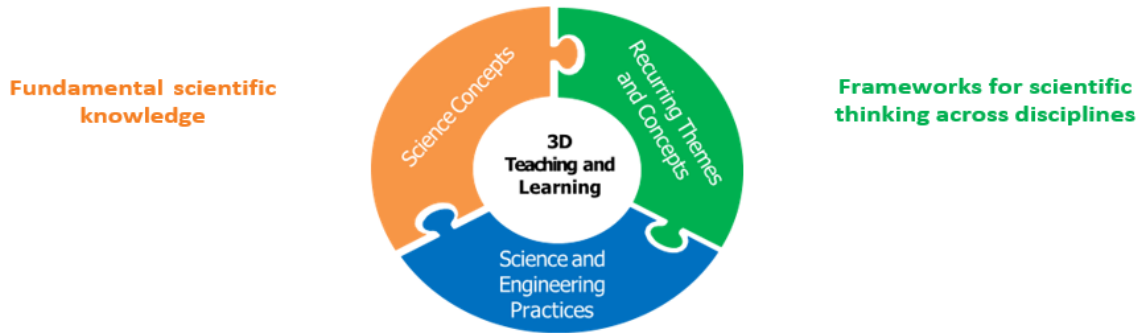
Reshaping Science Education for All Students

In an effort to bolster America's competitive edge in an increasingly global economy, Texas led the development of the standards by working with teachers, higher education, business, and practicing scientists. This collaborative process produced a set of high quality, college- and career- ready K-12 academic standards that set meaningful expectations for student performance and achievement in science. The standards are rich in both content and practice and arranged in a coherent manner across all disciplines and grades.



Three Dimensions of Science Learning

The Texas science standards emphasize three distinct, yet equally important dimensions that help students learn science. Each dimension is integrated into the standards and—combined—the three dimensions build a powerful foundation to help students build a cohesive understanding of science over time.



Standard behaviors that scientists and engineers Use to Explain the world or solve problems

Classroom activities in Middle School will look less like this:	And look more like this:
Physical Sciences 🧪	Physical Sciences 🧪
Students memorize Newton's Law of Gravity.	Students gather and analyze evidence about gravity's effect on objects with different masses.
Students follow scripted chemistry experiments.	Students use chemistry knowledge to design and explain a heat pack.
Students memorize the difference between Fahrenheit and Celsius.	Students construct arguments about the relationship between particle motion and temperature.
Life Sciences 🌿	Life Sciences 🌿
Students memorize the equation for photosynthesis.	Students explain the chemistry behind photosynthesis and how it relates to the growth of a plant.
Students build a model of a cell out of gelatin and label its parts.	Students design a new cell to optimize a particular function, such as energy production.
Students draw an ecosystem on paper.	Students conduct research to identify significant changes in local ecosystem(s).
Earth & Space Sciences 🌍	Earth & Space Sciences 🌍
Students memorize the water cycle.	Students analyze real data to determine how water moves through the cycle.
Students build a papier-mâché volcano.	Students conduct research to learn how scientists observe and monitor volcanic activity on a continuous or near-real-time basis.
Students paint and position Styrofoam balls to represent planets in the solar system.	Students give presentations describing evidence that gravity controls the motion of the planets around the sun.
Engineering Design ⚙️	Engineering Design ⚙️
Students learn engineering separately from other science disciplines.	Students consider or apply engineering design principles throughout each science course.
Engineering lessons are only offered to some students.	Engineering lessons are offered to all students and each student is encouraged to connect lessons to their own personal experiences.
Students use trial and error to build a bridge out of popsicle sticks.	Students research various bridge designs, select a design that best aligns to their scientific knowledge about forces, and finally test their selected design.

If you have any questions related to your child's science instruction, please feel free to reach out to their teacher or you may contact **Michelle Yates, Aledo ISD Science Coordinator** at myates@aledoisd.org or (817)-441-8327 ext. 1021.