

Preparing Students for a Lifetime of Success

Understanding New
Science Standards
for Grades K-2

How will we prepare students for academic success?

Our state has adopted new standards based on the *Framework for K-12 Science Education* 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 Tennessee Academic Standards for Science 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 K–2.

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 provide an equitable, high-quality science education to all of our students.



What is our vision for science education?

Tennessee's 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:

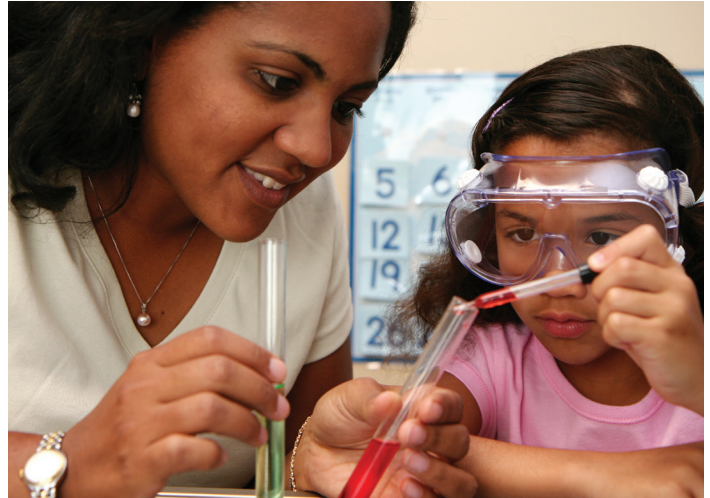
- Develop a deeper understanding of science beyond memorizing facts, and
- Experience similar scientific and engineering practices as those used by professionals in the field.

Classroom activities in Elementary School will look less like this:	And look more like this:
Students have infrequent exposure to science instruction or related activities.	Students engage with science concepts as a core part of instruction and are encouraged to connect lessons to their own personal experiences.
Students memorize the general structure and properties of matter.	Students use water and butter to investigate how some changes caused by heating or cooling can be reversed while others cannot.
Students examine insects or bugs on the playground or during special events such as science fairs.	Students observe the life cycles of beetles, butterflies, and pea plants to identify patterns that are common to all living things.
Students draw static pictures of the sun to demonstrate where it is at different times of the day.	Students support claims about the movement of the sun by identifying an outdoor object that receives direct sunlight, then tracing an outline of its shadow at three different times during the day.
Students have infrequent exposure to discussions or activities related to engineering design.	Students consider or apply engineering design principles throughout each grade level.
Student discussions and activities are disconnected from mathematics or English/Language Arts instruction.	Student discussions and activities are thoughtfully integrated with mathematics and English/Language Arts instruction.

Reshaping Science Education for All Students

To better prepare Tennessee's students for college and careers, schools need to ensure that quality science education is accessible to all students—regardless of ethnicity or zip code.

In an effort to bolster America's competitive edge in an increasingly global economy, Tennessee developed these 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.

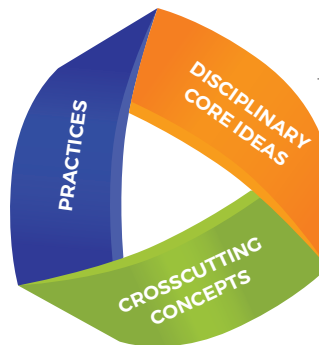


Fact: "Standards" are not "curriculum". "Standards" provide clarity about what students should know and be able to do by the end of each grade level. "Curriculum" refers to how students meet those expectations. Please contact your child's teacher or school if you have questions about their curriculum.

Three Dimensions of Science Learning

The Tennessee 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



Fundamental scientific knowledge

Frameworks for scientific thinking across disciplines

Support your child's success in the classroom!