DRAFT Tennessee Science Standards Value Statement

Tennessee possesses a citizenry known to be intelligent, knowledgeable, hard working, and creative. Tennessee's schools offer science programs that introduce a broad range of important subjects along with opportunities to explore topics ranging from nuclear energy science to breakthrough medical discoveries. The challenge of developing and sustaining a population of scientifically informed citizens requires that educational systems be guided by science curriculum standards that are academically rigorous, relevant to today's world, and attendant to what makes Tennessee a unique place to live and learn.

To achieve this end, school systems employ curriculum standards to craft meaningful local curricula that are innovative and provide myriad learning opportunities that extend beyond mastery of basic scientific principles. Tennessee science standards include the necessary qualities and conditions to support learning environments in which students can develop knowledge and skills needed for post-secondary and career pursuits, and be well-positioned to become curious, lifelong learners.

Declarations

Tennessee's K-12 science standards are intended to guide the development and delivery of educational experiences that prepare all students for the challenges of the 21st century and enable them to:

1. Develop an in-depth understanding of the major science disciplines through a series of coherent K-12 learning experiences that afford frequent interactions with the natural and man-made worlds;
2. Make pertinent connections among scientific concepts, associated mathematical principles, and skillful applications of reading, writing, listening, and speaking;
3. Recognize that certain broad concepts/big ideas foster a comprehensive and scientifically-based picture of the world and are important across all fields of science;
4. Explore scientific phenomena and build science knowledge and skills using their own linguistic and cultural experiences and/or with appropriate assistance or accommodation;
5. Identify and ask appropriate questions that can be answered through scientific investigations;
6. Design and conduct investigations independently or collaboratively to generate evidence needed to answer a variety of questions;
7. Use appropriate equipment and tools and apply safe laboratory habits and procedures;
8. Think critically and logically to analyze and interpret data, draw conclusions and develop explanations that are based on evidence and free from bias;
9. Communicate and defend results through multiple modes of representation (e. g., gestural, oral, mathematical, pictorial, graphic, and textual models).
10. Integrate science, mathematics, technology, and engineering design to solve problems and guide everyday decisions;

11. Consider trade-offs among possible solutions when making decisions about issues for which there are competing alternatives;
12. Locate, evaluate, and apply reliable sources of scientific and technological information;
13. Recognize that the principal activity of scientists is to explain the natural world and develop associated theories and laws;
14. Recognize that current scientific understanding is tentative and subject to change as experimental evidence accumulates, and/or old evidence is reexamined;
15. Demonstrate an understanding of science principles and the ability to conduct investigations through student-directed experiments, authentic performances, lab reports, portfolios, laboratory demonstrations, real world projects, interviews, and high-stakes tests.

Information from the NSTA Position Statements was adapted to compile this document.