STEM Education in Oklahoma

What Is STEM in Oklahoma?

STEM stands for Science, Technology, Engineering, and Mathematics. STEM education in Oklahoma includes instruction in science, technology & computer science, engineering, and mathematics, as well as learning experiences that bring two or more of these areas together.

STEM helps students understand the world, connect learning to real-world applications and careers (e.g., engineering, computer science, health sciences, and advanced manufacturing), and see themselves as capable of success in STEM fields.

Goals for Oklahoma STEM Education

Aligned to the United States Department of Education's YOU Belong in STEM initiative, Oklahoma's goals are to:

1. Ensure all students, from pre-kindergarten through high school, can engage in and excel at rigorous, relevant, and joyful STEM learning.
2. Develop and support STEM educators to join, grow, and stay in the STEM teaching profession.
3. Invest strategically and sufficiently in STEM education.

Goal 1

Ensure all students, from pre-kindergarten through high school, can engage in and excel at rigorous, relevant, and joyful STEM learning.

Oklahoma schools and districts are encouraged to:

- **Provide a strong foundation in STEM subjects.**
  Devote dedicated instructional time to science, mathematics, engineering, technology, and computer science aligned to the Oklahoma Academic Standards, balancing integrated STEM with deep learning in each discipline.
- **Ensure access and engaging experiences.**
  Adopt high-quality instructional materials, support research-based and discipline-specific instructional practices, and offer a range of appropriate and advanced STEM courses and experiences, including play-based, project-based, and authentic problem solving.
- **Connect STEM to future pathways and families.**
  Connect STEM experiences to students' Individual Career Academic Plans (ICAPs) and communicate with families about course sequences and career connections.

Goal 2

Develop and support STEM educators to join, grow, and stay in the STEM teaching profession.

Oklahoma schools and districts are encouraged to:

- **Recruit and retain STEM educators.**
  Promote STEM teaching as a valued profession and develop multiple pathways into STEM teaching, including traditional, alternative, and grow-your-own programs.
- **Provide ongoing, collaborative professional learning.**
  Offer professional learning aligned to standards, instructional materials, and local needs, and support collaboration through professional learning communities, networks, mentoring, and leadership opportunities.

Goal 3

Invest strategically and sufficiently in STEM education.

Oklahoma schools, districts, and the Oklahoma State Department of Education (OSDE) are encouraged to:

- **Align funding with clear STEM priorities**, such as academic standards, high-quality instructional materials and curriculum frameworks, and competitive grants and programs that expand STEM opportunities and supports.
- **Strengthen statewide STEM supports and partnerships**, including professional learning cohorts, networked improvement communities, regional or virtual professional learning, and partnerships with higher education, CareerTech, business and industry, tribal nations, and community organizations.

What Success Looks Like

Oklahoma will know that the goals for STEM education are being achieved when there is:

- Increased STEM coursework and participation across PK–12, including advanced and extended opportunities.
- Increased participation in STEM professional learning.
- Decreased unfilled STEM positions in Oklahoma, including STEM teaching positions.

Progress may be monitored using ICAP information, school and district assessment data, professional learning participation data, and feedback from advisory groups and stakeholders.

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