

a high school engineering course



**ENGINEER
YOUR WORLD**

THE UNIVERSITY OF TEXAS AT AUSTIN

engineeryourworld.org



The University of Texas at Austin
Cockrell School of Engineering



THE FUTURE OF ENGINEERING EDUCATION

In 2008, the National Science Foundation awarded The University of Texas at Austin \$12.5 million to develop innovative solutions for high school engineering education. The cornerstone of this work has been the creation of an exemplary, yearlong engineering curriculum and teacher support program, *Engineer Your World*.

Designed by faculty in the university's Cockrell School of Engineering and College of Education — both top-10 programs — and in collaboration with NASA engineers and secondary education specialists, *Engineer Your World* is transforming how the discipline is introduced and taught in high schools across the United States.

As a top-ranked center of engineering education and research and a globally recognized leader in innovation, the Cockrell School is committed to expanding access to high-quality engineering education for all students. We hope you will join us as we continue to redefine the future of engineering education.



Sharon L. Wood

Sharon L. Wood
Dean, Cockrell School of Engineering



WHY *ENGINEER YOUR WORLD*?

Engineer Your World responds to a national need for a high-quality, low-cost, broadly based engineering design course and teacher support program. What makes our program special? We are:



For all students.

Our goal is to inspire all students to understand and appreciate the engineering approach to solving problems, regardless of whether they decide to pursue engineering as a career.



Human-centered.

Engineer Your World engages students in socially relevant design challenges that make core engineering concepts accessible from the start while illustrating how engineers solve problems for human benefit.



Contextual learning-focused.

Students collaborate to construct their own understanding within the parameters of the engineering design process. They discover connections between abstract concepts and practical applications by using science, mathematics and engineering concepts to solve real-world problems.



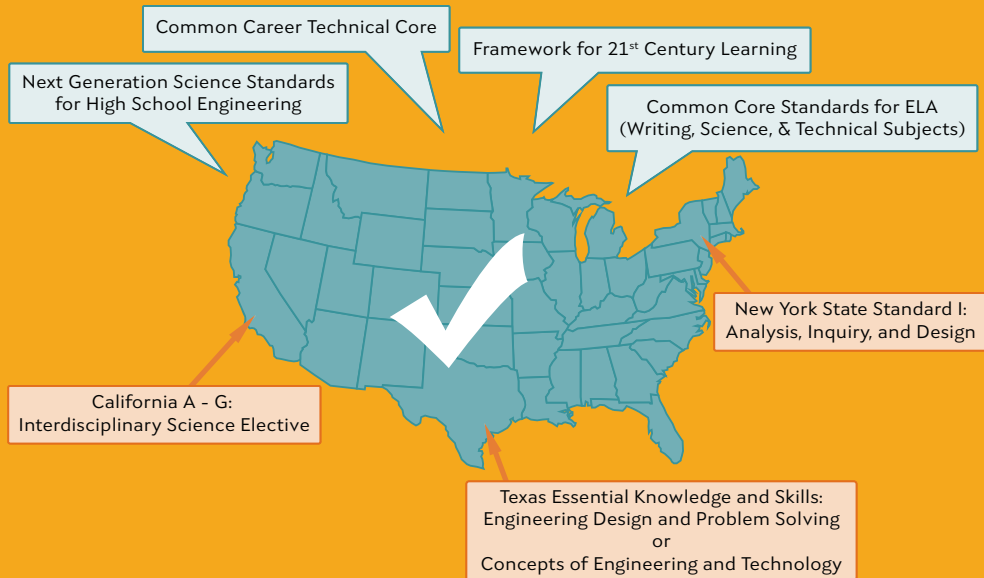
Efficient.

By covering the breadth of engineering skills, habits of mind and professions in just one year, *Engineer Your World* makes engineering accessible to students who might not typically commit to a multi-year pathway.



Standards-based.

Engineer Your World is aligned with multiple sets of national and state standards and requirements, including:



Affordable.

We work hard to keep costs low for our partner schools. Please visit our website for complete information about equipment and consumable costs, as well as annual licensing fees and teacher professional development and support fees. Discounts are available to districts implementing across multiple campuses.



Committed.

Teachers leave our summer institute prepared to teach *Engineer Your World* and are fully supported through collaborative communities of practice. Our professional development and ongoing support programs are aligned with national standards of excellence for adult learners.

11,000

students served in the first five years

Diverse Student Populations

42%
Hispanic

10%
Black

32%
Women

45%

*of students completing
Engineer Your World plan to
major in engineering
in college.*



60%

*of students completing
Engineer Your World
express interest in an
engineering career.*

STUDENT EXPERIENCE

The *Engineer Your World* classroom is a place where students engage in authentic engineering practices in a problem-solving, inquiry, project-based environment. Students complete a series of engaging and socially relevant design challenges that require purposeful application of relevant STEM concepts.

Students discover how engineering shapes their world by completing challenges that illustrate how engineers:

- Create solutions for people;
- Use a creative design process;
- Make data-supported design decisions;
- Improve lives;
- Design the products of our everyday lives;
- Use computational thinking to develop solutions; and
- Collaborate to solve complex challenges.

Students develop engineering design skills and habits of mind.

Engineer Your World uses a unique, multi-level engineering design process that is both accessible to high school students and authentic to the experience of professional engineers. Each challenge requires students to develop and practice the engineering skills and habits of mind that are central to the engineering profession and that distinguish it from other scientific and technical fields.

Students explore engineering fields and professions. *Engineer Your World* covers the breadth of engineering fields and professions so that students can make informed decisions about pursuing engineering.

“It’s exciting to see your students so engaged with project-based learning! The multitude of skills and level of rigor they have to apply has no comparison!”

- Dr. J
Director of Student Affairs
Santa Maria ISD, Santa Maria, Texas

TEACHER SUPPORT

It starts with two weeks of summer professional development.

Delivered by a team of engineers, instructional support specialists, and successful veteran *Engineer Your World* educators, this professional development institute:

- Engages teachers in authentic engineering practices;
- Enhances pedagogical content knowledge for project-based instruction;
- Facilitates collaborative strategic planning; and
- Establishes the communities of practice that enable successful implementation.



It continues with comprehensive induction support.

Recognizing the value of ongoing professional development and support, *Engineer Your World*:

- Engages successful veteran teachers as guides for our communities of practice;
- Provides an online portal to facilitate peer-to-peer interaction and sharing of best practices; and
- Offers on-demand access to staff engineers and instructional support specialists throughout the year.



"I wish every professional development program would take some notes from Engineer Your World. Every single thing was relevant. This is one of the best professional developments that I have ever been to."

- Marissa L.
Engineer Your World teacher
Langham Creek High School, Houston, Texas

A GROWING NETWORK

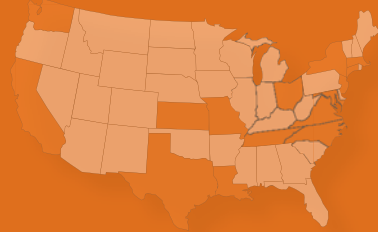
Engineer Your World has grown from a seven-school pilot program into a robust network of dozens of schools serving thousands of students each year.

2015-16

105 schools

15 states

5,000 students



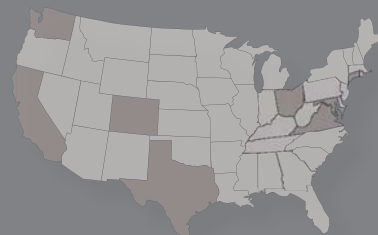
2012-13

(partnered with NASA)

23 schools

8 states

750+ students



2011-12

***Engineer Your World* piloted**

7 schools

1 state

212 students



EXPANDING OPPORTUNITIES



Dual Enrollment at The University of Texas

Beginning in 2016-17, *Engineer Your World* students can apply to dual-enroll at The University of Texas at Austin. Successful students will earn three hours of freshman-level elective credit from our national top-10 school of engineering.



Engineer Your World II

Two-thirds of our schools asked for a second-year course and we responded. *Engineer Your World II* engages students in hands-on projects that highlight the role of computational thinking in solving engineering design challenges. These challenges are based on the seven “big ideas” from the AP[®] Computer Science Principles Curriculum Framework.



What else is on the horizon?

We work with our partner schools to set priorities. Will we develop a middle school course? A third-year course option? Engineering modules for the science classroom? Join today and be part of the conversation to determine what’s next for *Engineer Your World* students and educators!

Explore the curriculum, hear directly from *Engineer Your World* teachers, discover funding opportunities and submit your application at

engineeryourworld.org



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