Engineers are shaping the future. From making renewable energy affordable and providing access to clean drinking water to engineering better medicines, engineers are taking on the world’s biggest challenges. In Engineer Your World students explore the greatest engineering achievements of the 20th century, the grand engineering challenges of the 21st century, and the many engineering professions that make our modern world possible.

The Engineer Your World classroom is a place where students engage in authentic engineering practices in a project-based environment (80 percent hands-on; 20 percent documentation, reflection, direct teach and student presentations). Student learning is scaffolded over a series of engaging and socially relevant design challenges that require the purposeful application of engineering principles and relevant STEM concepts.

Engineer Your World responds to a national need for a high-quality, low-cost, broadly based high school engineering curriculum. Developed by University of Texas faculty and NASA engineers, this year-long, hands-on course in engineering design and problem solving teaches engineering habits of mind in the context of a narrative about engineering’s role in the world.

Engineer Your World aligns with Texas state learning standards for engineering science and college and career readiness, emerging Next Generation Science Standards for engineering, and evolving standards for Advanced Placement® in engineering.

www.engineeryourworld.org
Discovering Design

Engineers design products to meet customer needs. In The Evolution of Imagery students discover the design process as they create pinhole cameras to meet the special requirements of artists with disabilities. Core engineering skills acquired include:

- Analyzing/interpreting requirements
- Generating concepts
- Embodying design
- Verifying performance
- Creating technical documentation

Data Acquisition and Analysis

Engineers improve lives. In Green Energy for Clean Water students redesign a model wind-powered water delivery system for a village in the developing world while learning about:

- Systems context and top-down perspective
- Modeling
- Design modification
- Instrumentation and experimentation
- Data acquisition and analysis
- Data representation for decision-making

Systems Engineering

Engineers work in teams to solve complex design challenges. In Aerial Imaging students design and deploy an aerial imaging system to learn about:

- System decomposition
- Functional modeling
- Concept selection
- Project management
- Teamwork
- Risk analysis
- Ethics and safety

Automation and Control

Engineering opens frontiers. Automation and control systems let engineers meet challenges in extreme environments. In The Search for Lunar Ice students design, build and program a robotic vehicle for lunar exploration. Through this challenge students learn about:

- Automation
- Control
- Programming

Reverse Engineering & Redesign

Engineers design the products of our everyday lives. In Reverse Engineer Your World students explore the functionality of common objects and think like the engineers who designed them. This unit emphasizes:

- Product design
- Interpreting customer needs
- Developing design constraints
- Patents and intellectual property