Light the Spark in Tomorrow’s Engineers!

About SparkShop
SparkShop empowers students to apply their skills to engineering challenges and see their value in STEM fields. The curriculum contains a dynamic mix of experiments, discussions, demonstrations, and problem-solving designed for 4th-5th graders. We aim to build the initial enthusiasm that prepares students to pursue the STEM activities later in their learning careers.

SparkShop offers 3 NGSS-aligned programs. Students receive a total of 3 hours with our staff and 3 additional hours of our curricula through pre- and post-lessons led by teachers. The bulk of the content is in two 90-minute, high-energy sessions led by Shonali and Tiernan, SparkShop co-directors and former industry engineers. They provide technical knowledge and access to equipment outside the normal reach of students.

SparkShop is a project of the Science & Entrepreneurship Exchange (SEE), which has taught over 1000 kids in the Chicago-area since 2013. SEE’s mission is to inspire and mobilize the next generation of America’s innovators, inventors, entrepreneurs, engineers & manufacturing geniuses.

The Need
- A recent study found that 84% of executives agree that there is a severe talent shortage in STEM fields
- According to the US Department of Education, only 16% of high school students are both proficient in math and science and are interested in pursuing a STEM degree. Of that, only half make it into industry jobs
- Businesses see “a loss of an average $14,000 per open position that goes unfilled” according to a study by The Manufacturing Institute and Deloitte
- STEM workers make a median annual wage of nearly $76,000, over double that of the average worker (Bureau of Labor Statistics)

Outcomes
- Increased student confidence in science/engineering ability with projects
- Increased student engagement in math and science classes
- Increase in number of people graduating college with STEM degrees
- Increased diversity in the workforce of engineers and manufacturers
Our Format
SparkShop’s instructors visit each classroom twice per program, bringing in technology, materials, and machinery to tackle complex content in a safe and fun way. Each program includes connected supplementary lessons for teachers in science, math, art, language arts, and social studies. Our classes include:

APPLIED ENGINEERING
Discover how engineers shape our world! Students explore the variety of skills engineers need in the biomedical, electrical, mechanical, civil, chemical, and environmental fields.

INNOVATION & TEAMWORK
Apply the product development process! Students build skills in group brainstorming & problem solving and develop new communication techniques through sketching and prototyping.

MATERIALS & MANUFACTURING
Explore how things are made! Students examine how manufacturing turns raw materials into the products they see every day. Students follow the evolution of manufacturing over time, from ancient methods of metalwork to digital rapid prototyping technology.

Who We Are
Tiernan & Shonali are Sparkshop’s co-founders and directors. They both graduated from Northwestern’s McCormick School of Engineering and went on to develop laser machinery and racecars. After working in industry, they were inspired to make engineering an approachable and attainable future for more students.

For more information or to schedule a workshop, email hello@sparkshop.org or visit www.sparkshop.org