

the Works



EDUCATORS

The Works is a discovery center-part museum, part workshop, part resource center, part playground and all about kids and active, engaging engineering experiences.

The Works is designed for children from Kindergarten through Grade 6.

where kids explore
how things work



VISIT WITH a GROUP

Explore the museum, do a workshop, or choose both. Reservations required. Call 952-888-4262.



1

MUSEUM VISIT

Your group will explore how things work by engaging with a variety of large and small-scale interactive exhibits. The Works staff will be on hand to answer questions about how the exhibits work and point out real-world applications.

One hour

\$3.00 per student (subsidies available for those who qualify)

Group sizes between 15-120 students

Available daily



2

WORKSHOPS

Each workshop includes hands-on experimentation and discussion of key concepts. Many also include building a project to take home.

Many workshops go hand in hand with **state science and engineering standards** with topics such as motors, magnets, circuits, chemistry, sounds, bridges, and more.

See next page for workshop options and prices

WORKSHOPS

Workshop prices are per student and do not include the museum visit. Workshops marked with a  are available offsite through The Works on Wheels.

30 MINUTE WORKSHOPS

MAGNETS pre K-2

Investigate what magnets really attract and explore magnetic poles. Learn about the world's largest magnet and make a magnet "float" in the air. **\$3.00/student**

KALEIDOSCOPIES G 1-5

Discover reflection and symmetry and distort your own face with bendable mirrors. Each child will create a unique and colorful **kaleidoscope** to take home. **\$4.00/student**

60 MINUTE WORKSHOPS

MAGNET MANIA K-2

Explore what magnets really attract and investigate magnetic poles. Use magnets to separate iron filings from sand and make a **magnet game** to take home. **\$5.00/student**

MESSY CHEMISTRY G 1-5

Explore density, chemical reactions and physical properties as you experiment with liquid layers, inflate a balloon without blowing into it, and discover a Non-Newtonian Fluid with weird glop. **\$5.00/student**

SUPER CIRCUITS G 1-5

Investigate the components of simple circuits — power, loads and switches — and wire up some circuits of your own. Each student will make a **motor powered fan** to take home. **\$6.00/student**

WHAT FLOATS YOUR BOAT? G 1-5

Develop engineering skills and flex your creativity in this floating design challenge. Build a boat using assorted materials and test how many "penny passengers" it can carry. Then evaluate and improve your design using the Engineering Design Process, just like a real engineer! **\$5.00/student**

ACIDS, BASES & POLYMERS G 4-9

Explore the chemistry of acids and bases in this squishy, colorful and fun workshop. Make an indicator solution to test the pH of household products, observe the chemical changes and analyze the results. Each student will create and take home a **crosslinked polymer**. **\$6.00/student**

2 HOUR WORKSHOP

CATAPULTS G 3-9

Learn about levers and fulcrums in this action-packed workshop. Use real tools — hammers, drills and saws — to build your own **catapult**. Find out how far and how accurately you can fling a marshmallow, then take your catapult home for more experimentation and fun. **\$10.00/student**

GLOW IN THE DARK SLIME K-5

Explore color mixing and chemical reactions as each child makes his or her own batch of gooey, colorful **Glow Dough!** **\$4.00/student**

CHEMISTRY CHALLENGE G 1-4

Can you inflate a balloon without lung power? Discover solids, liquids, gases, and reactions in this exciting workshop. **\$3.00/student**

CIRCUITS G 1-6

Learn about the flow of electricity, then hook up different circuits using the three components of a circuit— a power source, a load, and a switch. **\$3.00/student**

MIXING MOLECULES K-3

Identify mystery chemicals by experimenting with chemical properties, states of matter, and color mixing. Each child will also make a tub of **Glow Dough**, a slimy polymer that glows in the dark. **\$6.00/student**

SOUNDS AROUND G 2-5

Start with vibrations and the science of sound, then explore how different kinds of instruments— wind, string and percussion— change pitch. Each child will use hammers and nails to make an **ear harp** to take home. **\$6.00/student**

SKYSCRAPERS G 3-6

Find out what architects and civil engineers do as you explore structure, scale and design. Then, using wood, a hand saw, and glue, create your own scale model **skyscraper** to bring home of Chicago's famous Willis (Sears) Tower. **\$5.00/student**

PASTA BRIDGES G 3-9

What do you get when you mix together raw pasta, hot glue and lots of imagination? Pasta bridges! Use the Engineering Design Process to build the strongest bridge you can, then see how much weight it can hold before it breaks. **\$6.00/student**

MOTOR POWER G 4-9


What's inside a motor and how does it work? Use magnets and electricity as you build and experiment with the "World's Simplest Motor." Each student will make a **motor powered fan** to take home. **\$6.00/student**

the Works ON WHEELS

The Works can bring many workshops directly to your school to enrich your curriculum, complement state science and engineering standards and delight your students.

The cost of bringing The Works to you is the cost of the workshop per student (minimum 15 students and 2 hours of programming) plus an \$50 per day travel and set up fee and mileage.

Call 952-888-4262 or email groups@theworks.org to bring The Works to your school.

Workshops marked with a  on the previous page are available through The Works on Wheels.

SEED STUDENTS EXPLORING ENGINEERING DAY

Want your students to experience many types of engineering? Host a Students Exploring Engineering Day at your school.

We start off with an introduction talking about engineering, and then the students rotate through 5 hands-on stations. You provide the parent volunteers, we bring the engineering fun.

\$3/student plus travel and set-up fees.

1 hour for every 1-2 classrooms (up to 8 classrooms/day)

Call 952-888-4262 or email groups@theworks.org for more information



we bring experts
and all the supplies...



FAMILY ENGINEERING NIGHT

you bring volunteers and 50 - 500 people



Looking to add something new to your family fun night, science fair or just want to plan an event all about engineering? Bring a Family Engineering Night to your school, community center or library. Kids and parents will engage in a variety of hands-on engineering projects. You provide the volunteers and we bring the experts and all the supplies. Events can be designed for 50 to 500 people.

\$225-\$1700

2 hours plus time for set up and volunteer training

Call 952-888-4262 or email groups@theworks.org for more information



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Bloomington, MN 55420

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ENGINEERING for Elementary Teachers

Schedule a professional development workshop for your district or school

WHAT IS ENGINEERING? and the Engineering Design Process

This workshop will explain what engineering is, introduce your teachers to the engineering requirements in Minnesota's science standards, and give them the hands-on experience and confidence to do exciting engineering design challenges with elementary school students.

Select from 3 options to meet your specific needs:

- 90 minute workshop
features the *Pasta Bridge* challenge
- 90 minute workshop
features the *What Floats Your Boat* challenge
- 2.5 hour workshop features both challenges

INSIDE ENGINEERING: CIRCUITS + FLASHLIGHTS

This workshop explains engineering and demonstrates a great way to integrate it into the science standards. Teachers will get confident and excited about electrical circuits and reverse engineering and learn how to do it in the classroom. The two-hour option also shows your teachers how to take apart machines with their students.

Select from 2 options to meet your specific needs:

- 90 minute workshop
includes circuits and flashlights
- 2 hour workshop
adds a *Tech Take Apart* experience

Come to The Works - \$200 per professional development hour for up to 20 teachers, plus enjoy a free 1/2 hour in The Works hands-on museum

Bring The Works to your school - \$200 per hour for up to 20 teachers, plus \$100 travel and set-up fee

To discuss the best option for your group, contact jessalyn@theworks.org or call 952-888-4262