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Join us for Hack the Classroom on October 27th!

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# Welcome To The Hacking STEM Library

Browse our library for downloadable, hands-on, teacher-tested projects and activities that use everyday materials to make STEM affordable, accessible, and fun for everyone.

Translate this site to get the lessons in your preferred language     English - United States ⌄

## Activity Library

### Comparing Speeds

🗓 Takes 45-90 minutes of classroom time.

🛒 Free! No tools or microcontrollers needed.

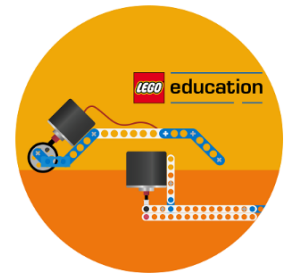☑ Meets middle school technology, math, and physical education standards.

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### Exploring Our Oceans

🗓 Each of the four lessons take approximately 1.5 days of classroom time

🛒 Costs approximately $4.00 per student, excluding tools and microcontroller

☑ Meets middle school science, technology, engineering and math standards (STEM)

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### Distance Wheel and Angle Finder

🗓 Takes 2 weeks of classroom time

🛒 Costs approximately $4.00 per student, excluding tools and microcontroller

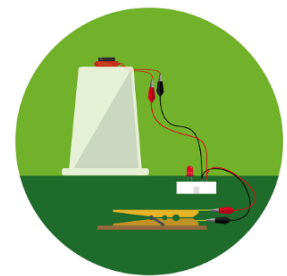☑ Meets middle school science, technology, engineering and math standards (STEM)

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### EC Sensor

🗓 Takes 1 week of classroom time

🛒 Costs approximately $3.00 per student, excluding tools and microcontroller

☑ Meets middle school science, technology, engineering and math standards (STEM)

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### Light gate

🗓 Takes 1 week of classroom time

🛒 Costs approximately $2.00 to $3.00 USD per student, excluding tools and microcontroller

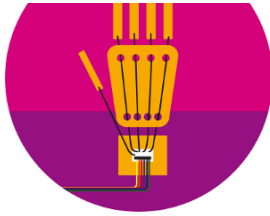☑ Meets middle school science, technology, engineering and math standards (STEM)

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### Telegraph

🗓 Takes 1 to 2 weeks of classroom time

🛒 Costs approximately $3.00 USD per student, excluding tools and microcontroller

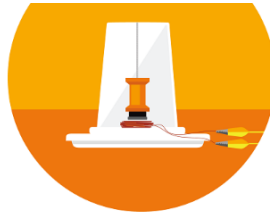☑ Meets middle school science, technology, engineering and math standards (STEM)

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### Sensorized Glove and Robotic Hand

- Takes 1.5 to 2 weeks of classroom time
- Costs approximately $3.00 USD per student, excluding tools and microcontroller
- Meets middle school science, technology, engineering and math standards (STEM)

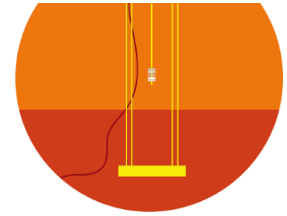GO TO LESSON PAGE >

### Seismograph

- Takes 2 to 3 weeks of classroom time
- Costs approximately $2.00 to $5.00 USD per student, excluding tools and microcontroller
- Meets middle school science, technology, engineering and math standards (STEM)

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### Tuned Mass Damper

- Takes 2 to 3 weeks of classroom time
- Costs approximately $2.00 to $5.00 USD per student, excluding tools and microcontroller
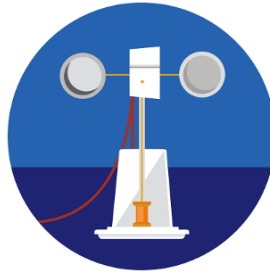- Meets middle school science, technology, engineering and math standards (STEM)

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### Windmill and Wind Turbine

- Takes 1 to 2 weeks of classroom time
- Costs approximately $2.00 to $5.00 USD per student, excluding tools and microcontroller
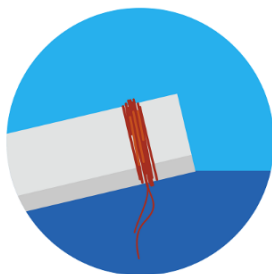- Meets middle school science, technology, engineering and math standards (STEM)

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### Anemometer

- Takes 1 to 2 weeks of classroom time
- Costs approximately $2.00 to $5.00 USD per student, excluding tools and microcontroller
- Meets middle school science, technology, engineering and math standards (STEM)

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## Master Skills Guides

### Coil Winding

An electromagnetic coil is an electrical conductor used in applications where electric currents interact with magnetic fields. Learn several ways to wind coils for your Hacking STEM projects.
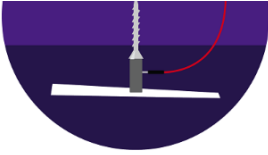
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### Making Flex Sensors

Learn to make a simple and inexpensive sensor out of copper tape, and a conductive anti-static material called Velostat. These sensors can be used for measuring force and pressure.
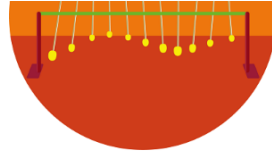
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## Bite-Sized Activities

## Homopolar Motor
🕐 Takes about 15 minutes
🛒 Costs approximately $2.00 USD per student

DOWNLOAD INSTRUCTIONS >

## Wave Machine
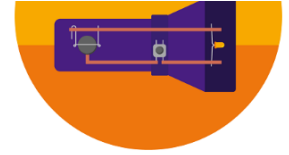🕐 Takes about 45 minutes
🛒 Costs approximately $2.00 USD per student

DOWNLOAD INSTRUCTIONS >

## Solar House
🕐 Takes about 1 hour
🛒 Costs approximately $2.00 USD per student

DOWNLOAD INSTRUCTIONS >

## Flashlight
🕐 Takes about 30 minutes
🛒 Costs approximately $2.00 USD per student

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## Light Quilt
🕐 Takes about 1 hour
🛒 Costs approximately $2.00 USD per student

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