

The **Eisco Garage Physics** line is aimed at students aged 7-13 interested in **STEM** concepts including **physics and engineering**. Each kit engages the young learner to **discover new ideas** about the physical world through assembly, play and engineering. The kits contain pre-cut wooden pieces that resemble **woodworking projects**.

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## TREBUCHET DIY KIT - 21 INCH BEAM ARM

S43526

The trebuchet is one of the most elegant of all medieval weapons ever invented. With a simple counterweight, beam arm, and sling, heavier projectiles can be launched much further than is possible with other siege engines. Think of it as a machine which transforms gravitational potential energy into kinetic energy. A lot of kinetic energy! Arcing across your yard! We include a ping pong ball, but have experimented with marshmallows, jelly beans, bouncy balls and other safe objects. Two release pin angles allow exploration of how the release angle changes the trajectory. The included guide provides clear assembly instructions with pictures. It also contains pedagogy for exploring concepts of energy transfer using the scientific method. Correlates with NGSS MS-PS2-2.

- Medieval weapons, engineering, and physics - not a bad way to spend a Saturday afternoon constructing this trebuchet which will throw the included ping pong ball more than 30 feet and heavier objects farther.
- The main material is high quality precision-cut Birch verner pure bond plywood.
- All necessary parts are included and shown in picture, holes are pre drilled.
- The kit is specially designed to be safe and robust. Dry firings and heavy projectiles are no problem for this kit.
- All that is needed for assembly is time, a screw driver, a hammer, and fun. No glue, mess or fuss, just assembly and experimentation

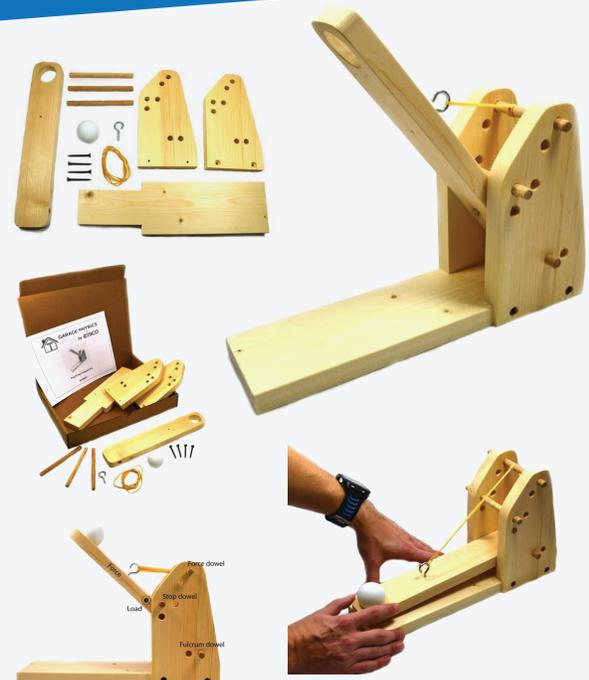


## CATAPULT

S24329

The Eisco Garage Physics Catapult allows students of any age to explore the concepts of force, acceleration, parabolic trajectory, center of mass, Hooke's law, vector components, and class 2 levers while also providing hours of fun. The DIY kit is simple and quick to assemble, and includes adjustable parts to experiment with different initial conditions. Instructions included with the kit detail learning exercises and routes of further exploration. Everything needed to build the catapult is included. This kit is sourced and assembled entirely in the United States, and correlates well with NGSS standards 3-PS2-1&2, MS-PS2-2, and HS-PS2-1 (Motion and Stability: Forces and Interactions). Kit contains small parts that may be a choking hazard.

- Explore force, acceleration, Hooke's law, and parabolic trajectories by building and testing a fully-functional catapult
- Kit is designed for all ages of children, from youngsters to high school
- Contains catapult base, sides, lever arm, rubber bands, screws, dowels, hook, and ping-pong ball
- Hands-on activities aid in the conceptualization of abstract mathematical ideas
- Instructions contain activity guidelines segmented by age group





## Standing (Catenary) Arch Kit

S24323

The Standing Arch Kit is composed of seven wooden blocks that when properly assembled produce the shape of the catenary arch. This kit engages students to learn engineering concepts such as force balancing and load transfer through the assembly of the arch. The kit shows students how vaulted arches and types of bridges are constructed, and how they are able to bear the weight of buildings and roadways they hold up. By playing with the various blocks, young learners can understand the importance of the keystone in holding up the arch.



## Torque Demonstration

S24324

Torque is a measurement quantity that explains how well a force can cause a rotation. With this kit the user can experience significantly increasing torque by moving a mass set down a rod while trying to balance the main rod.



## Pythagorean Theorem Puzzle Kit

S24326

Use the puzzle to work out three algebraic proofs of the Pythagorean theorem or to explore units of measure and reason out Einstein's proof of the Pythagorean theorem. **We provide suggestions on how to engage multiple age-groups!**



## Center of Mass Kit

S24325

Center of Mass (or Center of Gravity) is a single point on any solid body about which the weight is balanced in all directions. This kit will explore the center of mass of a two body system and create a demonstration that almost appears to be magic.



## Spiral of Theodorus Kit

S24328

The Spiral of Theodorus Block Kit allows students of any age to experiment with square roots and irrational numbers in physical form. This kit, though simple in design, provides a setting for age-appropriate discussions of the structure and behavior of a whole new type of number.



## Magic Blocks Kit

S24327

We've designed this kit to enable an engaging back and forth for every age of child. Young children can use the kit to explore the natural numbers. Use them to investigate addition, subtraction, multiplication, as well as units of measure, and the associative property. Beyond working out the complete solution to the magic square, high school students can use the kit to explore counting in binary up to 15 and, in classroom settings, counting in ternary up to 26.

### In the United States:

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