

Launch, shoot, fling, fly and learn!

Engage students with unique activities that bring STEM concepts learned in the classroom to life.

- ▶ Activities and accompanying lessons available for ages 7 to 17 provide hands-on engagement with concepts such as force, motion, energy, acceleration, velocity, mechanical advantage, aerodynamics, simple machines, engineering skills.
- ▶ Field trips usually last 2.5 to 3.5 hours and include three to five activity stations depending on group size.
- ▶ We can accommodate up to 60 students per visit at a price of \$15 to \$20 per student with a minimum of \$350 per visit, no charge for chaperones.
- ▶ Typically students are broken into groups of 10 to 15 and rotated through stations, with one group in the shop working on an indoor project while the others are outside using the Ballista or G-Force (roller coaster).
- ▶ If you bring a sack lunch, our dining area includes a fridge, freezer, microwave and toaster oven, and we have water fountains on site as well as drinks and snacks for sale.
- ▶ While we offer field trips year-round, spring and fall trips increase the chances of our ability to do some of our fun outdoor activities.
- ▶ Students (and chaperones) should wear indoor/outdoor clothes so they can enjoy the outdoor activities even if it's cold or a little rainy. The shop requires closed toed shoes and long hair and loose clothing to be tied back.
- ▶ Contact Dawn at NewtonsAttic@gmail.com or 859-368-7334 to schedule a date.



Have fun with physics! Popular activities include, but are not limited to, those listed below.

G-Force

Concepts covered: speed, acceleration, force, energy transfer, simple machines, mechanical advantage
Sling shot down a 125' long track. A mini-roller coaster on our front lawn.



Engineering Process Presentation

Concepts covered: engineering process, need, idea/concept, design, build, test, and use.
Hear the story of Victor the Candy Shooting robot from idea to reality and learn the ins and outs of the Engineering process.

Tennis Ball Cannons

Concepts covered: stored energy and projectile motion
Compressed air powered tennis ball cannons are great fun when shooting at targets in our outdoor shooting gallery.

SPINtron

Concepts covered: space program history, three vector acceleration
The NASA-inspired SPINtron simulates the experience astronauts endured when training to recover a capsule from a spin or tumble.

Rocket Build and Launch

Concepts covered: force, aerodynamics, speed, design, build, test, and use.
Design and build an air-powered model rocket and then 3-2-1 launch and watch it soar.

The Ballista (The Pumpkin Chunker)

Concepts covered: mechanical advantage, energy transfer, stored energy, projectile motion, force and acceleration
Designed in the form of a medieval siege engine, the Ballista can shoot a pumpkin over 400 feet.



Catapults

Concepts covered: energy transfer, stored energy, projectile motion, simple machines, tool use
It's time for flying objects as this activity offers students the opportunity to design and build a table top size catapult.