

LONG TRAIL SCHOOL

founded 1975

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Long Trail School Explores Projectiles

Dorset, VT—Long Trail School's Advanced Physics class has been busily constructing an air cannon made of plumbing supplies to study projectile motion and kinematics (the general study of motion). The cannon, powered by compressed air, was conceived to help students understand Newton's Laws of Motion and the Universal Law of Gravitation. After attaching an air compressor operating at 60psi to their homemade cannon, the students conducted a series of experiments using sophisticated scientific instruments, including lasers, photogate timers, accelerometers and force meters.



Long Trail physics students take advantage of a beautiful fall day to launch projectiles from a cannon they made from plumbing supplies.

These instruments were connected to computers to measure various things: velocity, acceleration, and the net generating force. The students then compiled these measurements and generated mathematical expressions to explain the path of the projectile. The projectiles flew as far as 200m and as fast as 114 mph, with a net generating force of about 450 Newtons.

“These experiments are an important part of any physics course,” says Dr. David Spero, Long Trail's physics teacher. “They allow students to apply these laws in an experimental setting. *Doing* is always better than passive learning.”

Long Trail School combines rigorous academics and a personalized curriculum for grades 6-12. For more information, please contact at 802.867.5717.