HIGH SCHOOL PHYSICAL SCIENCE LABS – online labs
Wednesdays, September 16-December 16
No class October 14 or November 25
12:30pm-2:00pm
Ages 14+

The focus of our High School Physical Science Labs is exploring fundamental principles of physics by conducting investigations of force and motion, electricity and magnetism, and properties of waves. Students learn laboratory techniques, and perform hands-on science experiments commonly required in many high school physical science curricula. Please note: labs related to chemistry are conducted during our High School Chemistry Labs course. A brief review of relevant material starts each lab, followed by a lab period which includes lab preparation, experimentation and clean-up. Labs will be based on the Glencoe Physical Science Lab Manual and is recommended for students to complete labs and lab reports (to be evaluated by the parent). We recommend students register for the full semester (ideally year), but students can also register for individual labs. All lab costs are included in registration fees.

Location: Online
$275/semester OR $25/lab
50% off sibling discount available

LAB SCHEDULE:

METRIC SYSTEM AND MEASUREMENT – Wednesday, September 16
We review the use of the metric system in science, practice metric conversions and properly use laboratory tools as we follow a scientific procedure and draw conclusions from our results.

BALANCED AND UNBALANCED FORCES - Wednesday, September 23
Students study opposing forces and how unbalanced forces result in movement as we experiment with buoyant and gravitational forces.

SPEED AND ACCELERATION LAB - Wednesday, September 30
We explore the difference between speed and acceleration as we experiment with forces that affect how an object moves.

PROJECTILE MOTION - Wednesday, October 7
We study motion through space this week as we conduct experiments with 3-dimensional projectile trajectories.

MOMENTUM - Wednesday, October 21
This week, we experiment with collisions to study net force, momentum and transfer of momentum from one object to another.

KINETIC ENERGY - Wednesday, October 28
We develop hypotheses and draw conclusions about changes in mass and velocity as we use pendulums to explore potential and kinetic energy.

WORK AND POWER - Wednesday, November 4
Students investigate the relationships among force, work and power as they conduct experiments to calculate the amount of work required to lift objects.

CALCULATING FORCE - Wednesday, November 11
This week, we apply Newton's Laws to calculate force and study the effects of friction and drag with airplanes.

LEVERS AND EFFORT - Wednesday, November 18
Students experiment with levers and math to design and construct a balanced hanging mobile.

PULLEYS AND FORCE - December 2
We work with pulleys and pulley systems to examine how this simple machine changes the direction of a force and makes work easier.

HEAT TRANSFER - Wednesday, December 9
Students practice their measurement skills using lab tools as they construct a calorimeter to measure the transfer of heat between liquids and as they create a solution.

HEAT CONDUCTION - Wednesday, December 16
We study the transfer of heat between objects and the ability of various materials to conduct heat in today's lab.