



MIDDLE SCHOOL PHYSICAL SCIENCE LABS

Thursdays, January 25- May 2

No class February 22, March 14 or April 4 (12 weeks)

9:30am-11:00am

Ages 11-14

Throughout this course, students investigate the behavior of the universe by experimenting with properties of matter, motion, energy, and force. Students explore chemistry and physics in real-life situations to better understand relationships within this field of science. Lab supplies are included in registration fee.

LAB SCHEDULE:

METRICS CHALLENGES - Thursday, January 25

This week, we review the use of the metric system in science, practice metric conversions and proper use of laboratory tools, and then compete in scientific challenges to reinforce these concepts in a fun way.

ELEMENTS - Thursday, February 1

Students study how to read a periodic table based on elemental properties and study some common elements that we can interact with.

STATES OF MATTER - Thursday, February 8

Students study kinetic theory and learn how elements and compounds can exist in different states in order to understand how thermal energy affects these particles.

CHEMICAL BONDS & REACTIONS - Thursday, February 15

We study how compounds are formed by taking a look at how atoms attract and repel others as we conduct several chemical reactions to make new products.

SOLUTIONS - Thursday, February 29

Today, we learn about solutes and solvents and how they form various solutions as we work to grow crystals.

ACIDS & BASES - Thursday, March 7

Students observe the pH scale and how hydronium ions and hydroxide ions affect properties of acids, bases, and neutrals.



FOOD CALORIMETRY - Thursday, March 21

Today, we learn how “calories” in food are a measure of energy contained in the things we eat, and calculate the amount of energy in a variety of food samples by burning them.

PHYSICS OF RACING - Thursday, March 28

Students use physics principles to design and build aerodynamic cars, and determine which features of the vehicle are important in maximizing speed, velocity and acceleration.

3D MOTION - Thursday, April 11

We study motion through space this week as we conduct experiments with 3-dimensional projectile trajectories.

MOMENTUM - Thursday, April 18

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

KINETIC ENERGY - Thursday, April 25

We develop hypotheses and draw conclusions about changes in mass and velocity as we use pendulums to explore potential and kinetic energy.

WAVES AND OSCILLATIONS - Thursday, May 2

Students investigate the way sound and light moves, model harmonic motion and build a simple instrument to make sounds.

Location: STEM Lab (suite 21)

Full semester - \$308 or \$28/lab

10% sibling discount