

PHYSICS IN ACTION

Monday, September 12-December 12 (no class Oct 10-14 and Nov 21-25; 12 weeks)

11:00am-12:15pm

Ages 8-10

Throughout this course, students investigate the behavior of the universe by experimenting with matter, motion, changes through space and time, energy, and force. Students explore physics in real-life situations to better understand relationships within this field of science. All lab costs are included in registration fees.

Instructor: Candra Eden, BSc

Location: Science Center (suite 5)

Course fee: \$220 OR \$20/lab

10% sibling discount

Register for full semester or individual labs.

LAB SCHEDULE:

METRICS CHALLENGES - Monday, September 12

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

BALANCED AND UNBALANCED FORCES - Monday, September 19

Students study opposing forces and how unbalanced forces result in movement as we experiment with buoyant and gravitational forces.

PHYSICS OF RACING - Monday, September 26

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 - Monday, October 3

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

MOMENTUM - Monday, October 17

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

KINETIC ENERGY - Monday, October 24

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 - Monday, October 31

Students investigate the relationships among force, work and power as they conduct experiments to calculate the amount of work required to lift objects.

FORCE AND FRICTION - Monday, November 7

This week, we apply Newton's Laws to calculate force and study the effects of friction and drag with airplanes.

LEVERS AND EFFORT - Monday, November 14

Students experiment with levers and math to design and construct a balanced hanging mobile.

PULLEYS AND FORCE - November 28

We work with pulleys and pulley systems to examine how this simple machine changes the direction of a force and makes work easier.

HEAT CONDUCTION - December 5

We study the transfer of heat between objects and the ability of various materials to conduct heat in today's lab.

DRONES - December 12

This week, we learn about controlled flight and we learn how drones work and how to control them.

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