

# Unit 4 - We can work it out! Work, Energy, Momentum

Content Area: **Science**  
Course(s): **Physics Honors, Horticulture 1**  
Time Period: **November**  
Length: **6 weeks**  
Status: **Published**

## Enduring Understandings

---

All energy transfers are governed by the law of conservation of energy.

Energy is converted in a system.

Momentum is a characteristic of mass and velocity and is conserved in collisions.

## Essential Questions

---

How is work related to energy?

Why does momentum have a role in the physical world?

## Content

---

Vocabulary:

Work

Energy

Potential energy

Kinetic energy

Power

Momentum

Impulse

## Skills

---

Identify different applications of work.

Calculate work, power, kinetic and potential energies.

Apply work/energy theorem to various motion problems.

Use conservation of energy to calculate kinetic, potential, work, and velocity at given times during an object's

motion.

Recognize the independence of path when determining energy changes in the vertical plane.

Calculate momentum/change in momentum of an object in motion.

Calculate the impulse applied to an object in motion and resulting momentum change.

Calculate masses, velocities, and directions of objects undergoing collision reactions using Law of Conservation of Momentum.

## **Resources**

---

## **Standards**

---