Warm Up

1. What is the velocity of a cylinder with a radius of 3.00 m if it experiences 8.50 m/s^2 of acceleration?
2. What is the velocity of a child with a mass of 55.8 kg if they pushed off another child with a mass of 34.8 kg and moved with a velocity of 3.75 m/s?

Target

- I can describe each of the universal forces.

Universal Forces

Electromagnetic Force

- The Electromagnetic Force consists of the electric and magnetic force.
- Opposite charges attract and like charges repel.
- This is the only force that can both attract and repel objects.
- The electric force involves charges and the magnetic force involves poles.

Strong Nuclear Force

- The Strong Nuclear acts between protons and neutrons in the nucleus of atoms.
- This is an attracting force that holds the nucleus together.
- It is 100 times stronger than the electromagnetic force is at the atomic scale.

Weak Nuclear Force

- The Weak Nuclear acts on the atom itself and is responsible for beta nuclear decay.
- This force is weaker than the strong nuclear.

Gravitational Force

- The gravitational force is the weakest of the universal forces but acts over the largest distance.
- Universal gravitation is used to describe the gravitational force.

Gravity

- Gravity is a force that acts between any two masses.
- Earth's gravity acts downward toward the center of Earth.

- As an object accelerates toward Earth do to gravity, air resistance also increases until the two forces balance themselves.
- Terminal velocity is the constant velocity of a falling object when the force of air resistance equals the force of gravity.

Summary

- The four universal forces describe the everyday interactions in the universe.

Assignment