

Unit 5- I'm so Dizzy - Circular and Rotational Motion

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

Enduring Understandings

The forces of nature apply to objects in circular & rotational motion.

Gravitational Forces on objects in space.

Essential Questions

Why do objects move in circles?

How do the planets move and why?

How do objects rotate?

Content

Vocabulary:

Centripetal acceleration

Centrifugal force

Centripetal force

Angular velocity

Angular acceleration

Torque

Angular momentum

Gravitational force

Skills

Recognize and explain the nature of the force that causes circular motion.

Calculate centripetal acceleration and force, tension and friction as sources of centripetal force, apparent weight at tops and bottom of vertical loops.

Apply Kepler's Law of periods to relate bodies in orbit in the same system and calculate Kepler's constant for any orbited body.

Calculate gravitational force between any two masses, gravitational acceleration between any two masses, and gravitational field strength on any planet.

Describe the use of "gravity assist" in space travel.

Calculate Torque and angular acceleration for a rigid body, rigid body rotation about a moving axis, work and power in a rotational motion, angular Momentum & Conservation of angular momentum.

Resources

Standards
