Physical Science (Motion)

Grade 8 Science Grade 8 Science
Start Date: March 03, 2014
End Date : March 28, 2014

Unit Overview	Content Elaborations	Unit Resources
This topic focuses on forces and motion within, on and around the Earth and within the universe.	Motion can be described in different ways by di someone's hand may appear to be at rest, but to may appear to be moving backward). A force is described by its strength (magnitude) can act on a single object simultaneously. The f arrows drawn on an isolated picture of the objec arrow shows the direction of push or pull. Wher effect is what influences the motion of that obje object depends not only on how strong the force Forces can cancel to a net force of zero if they a directions. Such forces are said to be balanced. opposite direction, the object will maintain its c means if the object is stationary, it will remain s continue moving in the same direction and at th understandings and descriptions of inertia must Kinetic friction is a force that occurs when two objects in contac opposes the motion of an object when an object moves through motion of objects and may even cause moving objects to slow t motion. This phenomenon leads to the misconception that objec Experimentation with objects that have limited friction (e.g., a p the misconception that objects with a net force of zero naturally	Textbook: Chapter 6 Gizmo Lab: **Shoot the Monkey** Gizmo Lab: **Free-Fall Tower** Gizmo Lab: **Gravity Pitch** Gizmo Lab: **Fan Cart Physics** Gizmo Lab: **Free-Fall Laboratory** Gizmo Lab: **Golf Range** Gizmo Lab: **Roller Coaster Physics** Gizmo Lab: **Inclined Plane - Sliding Objects** Study Island Enrichment Lab: Balloon Rocket Lab
Unit Vocabulary	**Enduring Understandings (Big Ideas)**	**Connections**
Terminal velocity Friction		

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Free-fall Projectile motion Inertia Momentum Newton's 1st Law of Motion Newton's 2nd Law of Motion Newton's 3rd Law of Motion	**Forces have magnitude and direction.** The motion of an object is always measured with respect to a reference point. Forces can be added. The net force on an object is the sum of all of the forces acting on the object. The net force acting on an object can change the object's direction and/or speed. When the net force is greater than zero, the object's speed and/or direction will change. When the net force is zero, the object remains at rest or continues to move at a constant speed in a straight line.	

Standards

OH_Academic_Content_Standards - Science (2011) - Grade 8

Strand PS Physical Science

Topic PS.1 This topic focuses on forces and motion within, on and around the Earth and within the universe.

Content Statement PS.1.2 Forces have magnitude and direction.

PS.1.2.c When the net force is greater than zero, the object's speed and/or direction will change.

PS.1.2.d When the net force is zero, the object remains at rest or continues to move at a constant speed in a straight line.

Student Assessment	Unit Refection
Chapter Test	

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Gizmo Assessments Study Island Assessments	

Forces and Motion (Motion)

Content	Skills	Assessment
A. Motion	A. Motion 1. Explain the effect of gravity and air resistance on falling objects 2. Explain why objects in orbit are in free fall and appear to be weightless 3. Describe how projectile motion is affected by gravity 4. Describe Newton's first law of motion, and explain how it relates to objects at rest and objects in motion 5. State Newton's second law of motion, and explain the relationship between force, mass, and acceleration 6. State Newton's third law of motion, and give examples of force pairs 7. Calculate the momentum of moving objects 8. Explain the law of conservation of momentum	