

Unit 9: Momentum and Collisions Copied from: General Science, Copied on: 07/29/25

Content Area: **Template**

Course(s):

Time Period:

Length:

Status: **Published**

State Mandated Topics Addressed in this Unit

<u>State Mandated Topics Addressed in this Unit</u>	
N/A	N/A

Unit Name

Learning Objectives

- What are the three main types of energy?
- What is momentum and impulse and how are they related?
- What is the difference between momentum and inertia?
- Why does momentum have a role in the physical world?

Essential Skills

- Define the impulse given to an object.
- Define the momentum of an object.
- Determine the energy of various objects
- Recognize that unbalanced forces change the momentum of an object.

Standards

SCI.HS-PS2-1	Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.
SCI.HS-PS2-2	Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.
SCI.HS-PS2-3	Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

Instructional Tasks/Activities

- Common assessment chapter test
- Common assessment quiz
- Constructed response
- Do now's and/or exit slips
- Energy demonstrations assignment
- Energy introduction
- Exit Cards (answer to daily objective questions)
- Graphic organizers or models
- Guided practice
- Homework
- Homework
- Individual, small, and large group work
- Intro to Momentum
- Laboratory investigations within small groups
- Momentum virtual lab
- Review Activity
- Section Review Questions
- Skateboards and Momentum
- Study Guide Packets
- Vocabulary flash cards or map (word, picture, sentence, example)

Assessment Procedure

- • Flashcards and/or drill and practice
- • Inquiry based activities with reflective discussion
- • Laboratory groups
- • Lecture with note taking or guided notes
- • Online models and simulators
- • Power point presentations
- • Whole and small group discussions

Recommended Technology Activities

- Appropriate Content Specific Online Resource
- Chromebook
- Copy/Paste Content Specific Link Here
- Copy/Paste Content Specific Link Here

- Copy/Paste Content Specific Link Here
- Gimkit
- GoGuardian
- Google Classroom
- Google Docs
- Google Forms
- Google Slides
- Kahoot
- MagicSchool AI
- Other- Specified in Lesson
- Quiziz
- Screencastify

Accommodations & Modifications & Differentiation

Accommodations and Modifications should be used to meet individual needs. Their IEP and 504 plans should be used in addition to the following suggestions.

Gifted and Talented

- Compare & Contrast
- Conferencing
- Debates
- Jigsaw
- Peer Partner Learning
- Problem Solving
- Structured Controversy
- Think, Pair, Share
- Tutorial Groups

Instruction/Materials

- alter format of materials (type/highlight, etc.)
- color code materials
- eliminate answers
- extended time
- extended time
- large print

- modified quiz
- modified test
- Modify Assignments as Needed
- Modify/Repeat/Model directions
- necessary assignments only
- Other (specify in plans)
- other- named in lesson
- provide assistance and cues for transitions
- provide daily assignment list
- read class materials orally
- reduce work load
- shorten assignments
- study guide/outline
- utilize multi-sensory modes to reinforce instruction

Environment

- alter physical room environment
- assign peer tutors/work buddies/note takers
- assign preferential seating
- individualized instruction/small group
- modify student schedule (Describe)
- other- please specify in plans
- provide desktop list/formula

Honors Modifications

Resources

- Resource 1
- Resource 2
- Resource 3
- Resource 4
- Resource 5

