

# Unit 1: Motion

Content Area: **Template**

Course(s):

Time Period:

Length:

Status: **Published**

## State Mandated Topics Addressed in this Unit

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N/A	N/A

## Unit 1: Motion

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### Learning Objectives

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- How will you be able to describe a change in position?
- How are speed, velocity and acceleration related?
- How can you distinguish between uniform motion and uniform acceleration?
- How does gravity affect the motion of an object?
- How is the graphical representation of motion analyzed using equations?
- How is the motion of an object related to different graphs of the motion of an object.

### Essential Skills

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- Calculate the velocity and the displacement of an object undergoing constant acceleration.
- Define velocity and acceleration operationally.
- Determine from the curves on a velocity-time graph both the constant and instantaneous acceleration.
- Interpret a v-t graph to find the time at which an object has a specific velocity.
- Interpret graphs for a moving object and describe in words the information presented in graphs.
- Recognize the meaning of the acceleration due to gravity.
- Relate the direction and magnitude of velocity and acceleration to the motion of objects.
- Use the motion equations to solve problems involving freely falling objects.
- Write equations that describe the position of an object moving at constant velocity.

### Standards

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9-12.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.

## **Instructional Tasks/Activities**

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- Activity 7
- Activity 8
- Activity 9
- Constructed response
- Do nows and/or exit slips
- Graphic organizers or models
- Guided practice
- Homework
- Individual, small, and large group work
- Laboratory investigations within small groups

## **Assessment Procedure**

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- Classroom Total Participation Technique
- Classwork
- DBQ
- Essay
- Exit Ticket/Entrance Ticket/Do Now
- Flashcards and/or drill and practice
- Inquiry based activities with reflective discussion
- Journal / Student Reflection
- Kahoot
- Laboratory groups
- Lecture with note taking or guided notes
- Online models and simulators
- Other named in lesson
- Peer Review
- Performance
- Problem Correction
- Project
- Quiz
- Rubric
- Teacher Collected Data

- Test
- Whole and small group discussions
- Worksheet

## **Recommended Technology Activities**

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- 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**

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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**

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

- Tutorial Groups

## **Instruction/Materials**

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- 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**

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- 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**

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N/A

## Resources

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