

# 01: Newton's Laws & Motion Copied from: Physical Science Resource, 3

Content Area: **Special Education**  
Course(s):  
Time Period: **Full Year**  
Length: **4 weeks**  
Status: **Published**

## **General Overview, Course Description or Course Philosophy**

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Physical Science establishes a basic approach to the fundamentals of chemistry and physics. The following concepts will be explored: atomic structure, chemical bonding, chemical reactions, the periodic table, kinetic theory, and kinematics. The use of technology to gather and analyze data will be incorporated. This course is concept-oriented with a focus on Chemistry and Physics in the real world. Laboratory work and special projects will facilitate active learning and accommodate different learning styles.

## **OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS**

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Students will understand that:

- every object resists change to its state of motion mass is a measure of an object's inertia
- weight is a measure of the force of gravity acting on an object
- force causes acceleration, and an object cannot accelerate unless it is acted on by a net force
- acceleration is directly proportional to net force and inversely proportional to mass.

## **CONTENT AREA STANDARDS**

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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.
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## **RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)**

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LA.RST.9-10.1	Accurately cite strong and thorough evidence from the text to support analysis of science and technical texts, attending to precise details for explanations or descriptions.
LA.WHST.9-10.9	Draw evidence from informational texts to support analysis, reflection, and research.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.4	Model with mathematics.
TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).

## **EVIDENCE OF LEARNING**

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Refer to the 'Formative Assessments' and 'Summative Assessments' sections.

### **Formative Assessments**

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- Checks for understanding during lesson
- Online feedback (CK-12)
- Do Now activities.
- Student-centered questioning and discussion that is facilitated by instructor.
- Exit Tickets.

### **Summative Assessments**

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- Benchmarks – departmental benchmark given at the end of MP1, MP2, and MP3
- Alternative Assessments
  - Lab inquiries and investigations
  - Lab Practicals
  - Exploratory activities based on phenomenon
  - Gallery walks of student work
  - Creative Extension Projects
  - Build a model of a proposed solution
  - Let students design their own flashcards to test each other
  - Keynote presentations made by students on a topic
  - Portfolio

## **RESOURCES (Instructional, Supplemental, Intervention Materials)**

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[physicsclassroom.com](http://physicsclassroom.com)

[Vernier.com/experiments](http://Vernier.com/experiments)

Khan Academy, Crash Course Physics, and Bozeman Science

## **INTERDISCIPLINARY CONNECTIONS**

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Algebra, ELA/Literacy, Geometry

## **ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS**

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See link to Accommodations & Modifications document in course folder.