

# Unit I: Force and Motion

Content Area: **Science**  
Course(s): **Science 3**  
Time Period: **October**  
Length: **Sept 6-Nov 4**  
Status: **Published**

## Enduring Understandings

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The motion of an object is affected by forces.

Energy is necessary for change to occur in matter

Energy can be stored, transferred, and transformed, but cannot be destroyed.

The motion of an object is affected by forces.

Some forces act by touching, while others can act by not touching.

## Essential Questions

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Can we predict the behavior of a rolling object?

How can we make a runway that will keep an object rolling?

What does it take to change the motion of objects?

What is an example of a force that acts by direct contact with an object in contrast to a force that can act without direct contact?

## Content

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[NGSS Science InvestigationTemplate](#)

[Videos](#)

<http://www.fossweb.com/module-summary?dDocName=D1488532>

<http://www.deltaeducation.com/productdetail.aspx?Collection=Y&prodID=1111>

<http://www.sciencea-z.com/scienceweb/foss correlations.do>

## Vocabulary

direction, distance, effort, energy, force, friction, fulcrum, gravity, inclined plane, lever, load,

lubricant, machine, motion, newton, pivot, position, pulley, screw, simple machine, speed, spring scale, wedge, weight, wheel and axle, work

## Videos:

*Bill Nye - Simple Machines*

<https://www.schooltube.com/video/b92aaeff6cf4431aa6c7/Bill%20Nye%20-%20Simple%20Machines>

*PBS Learning - Simple Machines*

<http://www.pbslearningmedia.org/resource/idptv11.sci.phys.maf.d4ksim/simple-machines/i>

BrainPop - Simple Machines (will need login)

<https://jr.brainpop.com/science/forces/simplemachines/preview.weml>

## Literature:

*Forces Make Things Move*

by: Kimberly Brubaker Bradley

*Newton and Me*

by: Lynne Mayer

*Forces and Motion*

By Sarah Angliss Kingfisher

*Forces and Motion*

By David Dreirer

## Additional Activities:

**Force and Interactions Unit**

<http://www.mccracken.kyschools.us/Downloads/FORCES%20INTERACTIONS%203.pdf>

## **NGSS 3-PS2-1 ENERGY PERFORMANCE TASK**

<file:///H:/NGSSPerformanceTaskrdGradeEnergyPS.pdf>

### **3-PS2-1 & 3-PS2-2 Activity:**

Part 1 - <http://betterlesson.com/lesson/630800/how-fast-can-you-get-there>

Part 2 - <http://betterlesson.com/lesson/631278/how-fast-can-you-get-there-part-2>

### **3-PS2-2 Activities:**

[http://betterlesson.com/next\\_gen\\_science/browse/2112/ngss-3-ps2-2-make-observations-and-or-measurements-of-an-object-s-motion-to-provide-evidence-that-a-pattern-can-be-used-to-predi?from=breadcrumb\\_core\\_dropdown](http://betterlesson.com/next_gen_science/browse/2112/ngss-3-ps2-2-make-observations-and-or-measurements-of-an-object-s-motion-to-provide-evidence-that-a-pattern-can-be-used-to-predi?from=breadcrumb_core_dropdown)

## **Skills**

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Discover facts about force, motion, and friction

Identify the six simple machines and how they work.

Discuss the function of a table of contents, headings, and a glossary.

Interpret photographs and diagrams to answer questions.

Recognize that objects move differently on different surfaces.

Describe the relationship between the amount of force applied to an object and the distance the object moves.

Organize information in a variety of ways.

Discuss what it means to do work.

Identify the elements necessary for work to be accomplished.

Compare amounts of work accomplished in moving objects a distance

Discuss ways in which machines help make work easier

## **Standards**

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SCI.3	Forces and Interactions
SCI.3-PS2-1	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.
SCI.3-PS2-2	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.