

Links for each Unit for Physics 010 (Science 1)

**Unit 1 – Motion**

Vernier. *Go! Motion* <http://www.vernier.com/go/gomotion.html>

Fear of Physics. *Learn about Position, Velocity, and Acceleration.*

<http://www.fearofphysics.com/Xva/xva.html>

## **Unit 2 – Forces**

### Week 1 – Newton’s Laws

ExploreLearning, *Atwood Machine Gizmo*,

<http://www.explorelarning.com/index.cfm?method=cResource.dspView&ResourceID=523>

Harris, Tom, *HowStuffWorks, How Elevators Work*, <http://science.howstuffworks.com/elevator3.htm>

*Tension in a String: Atwood’s Machine*, <http://www.pha.jhu.edu/~broholm/l8/node3.html>

Wikipedia, *Atwood machine*, [http://en.wikipedia.org/wiki/Atwood\\_machine](http://en.wikipedia.org/wiki/Atwood_machine)

*Newton’s Second Law Experiment*, <http://www.walter-fendt.de/ph11e/n2law.htm>

*Newton’s Second Law of Motion*, <http://www.ic.arizona.edu/~nats101/n2.html>

Wikipedia, *Newton’s laws of Motion*, [http://en.wikipedia.org/wiki/Newton's\\_laws\\_of\\_motion](http://en.wikipedia.org/wiki/Newton's_laws_of_motion)

Wikipedia, *Weight*, <http://en.wikipedia.org/wiki/Weight>

### Week 2 – Simple Machines

Edheads, *Simple Machines Activities*, <http://www.edheads.org/activities/simple-machines/>

Enchanted Learning. *Levers: Simple Machines*

<http://www.enchantedlearning.com/physics/machines/Levers.shtml>

Edheads, *Simple Machines Activities*, <http://www.edheads.org/activities/simple-machines/>

Franklin Institute, *Understanding Simple Machines – The Inclined Plane*,

<http://www.fi.edu/pieces/knox/automaton/plane.htm>

Edheads, *Simple Machines Activities*, <http://www.edheads.org/activities/simple-machines/>

How Stuff Works, *How a Block and Tackle Works*, <http://www.howstuffworks.com/pulley.htm>

Wikipedia, *Pulley*, <http://en.wikipedia.org/wiki/Pulley>

*About Foucault Pendulums*, <http://www.calacademy.org/products/pendulum/>

Brian, Marshall. *How Pendulum Clocks Work*, <http://www.howstuffworks.com/clock.htm>

Neumann, Erik. *Pendulum Physics Simulation*, <http://www.myphysicslab.com/pendulum1.html>

Wikipedia, *Pendulum*, <http://en.wikipedia.org/wiki/Pendulum>

### Week 3 – Fluids

Day, Martha Marie, Anthony Carpi. *Density*.

[http://www.visionlearning.com/library/module\\_viewer.php?mid=37](http://www.visionlearning.com/library/module_viewer.php?mid=37)

Nova Online. *Buoyancy Basics*, <http://www.pbs.org/wgbh/nova/lasalle/buoybasics.html>

Pfaff, Raman. *Float or Sink – You find out*, <http://games.zeeks.com/density-1247/?page=play>

Brain, Marshall. *How Hydraulic Machines Work*. <http://science.howstuffworks.com/hydraulic1.htm>

Harris, Tom. *How Elevators Work*. <http://science.howstuffworks.com/elevator.htm>

*Hydraulics – Multiplying the force*.

<http://www.dynamicscience.com.au/tester/solutions/hydraulicus/hydraulics.htm>

Heckert, Paul. *Bernoulli's Principle and Storms*

[http://physics.suite101.com/article.cfm/bernoullis\\_principle\\_and\\_storms](http://physics.suite101.com/article.cfm/bernoullis_principle_and_storms)

Heckert, Paul. *Bernoulli's Principle Examples*

[http://physics.suite101.com/article.cfm/bernoullis\\_principle\\_examples](http://physics.suite101.com/article.cfm/bernoullis_principle_examples)

Mitchell, M. *Animated Demonstration of Bernoulli's Principle*

<http://home.earthlink.net/~mmc1919/venturi.html>

## Unit 3 – Energy

### Week 1 – Forms of Energy

*Inclined Plane*, <http://www.ngsir.netfirms.com/englishhtm/Incline.htm>

*Potential and Kinetic Energy*, <http://zebu.uoregon.edu/1998/ph101/l5.html>

The Physics Classroom. *Lesson 1: Basic Terminology*,  
<http://www.physicsclassroom.com/Class/energy/u5l1c.html>

Wikipedia. *Potential Energy*,  
[http://en.wikipedia.org/wiki/Potential\\_energy#Gravitational\\_potential\\_energy](http://en.wikipedia.org/wiki/Potential_energy#Gravitational_potential_energy)

Cool Cosmos, *Heat vs Temperature*,  
[http://coolcosmos.ipac.caltech.edu//cosmic\\_classroom/light\\_lessons/thermal/differ.html](http://coolcosmos.ipac.caltech.edu//cosmic_classroom/light_lessons/thermal/differ.html)

*Energy, heat, and temperature*, <http://www.chem1.com/acad/webtext/pre/enheat.html>

*Heat and Temperature* <http://id.mind.net/~zona/index.html>

Practical Physics. *Galileo's Pendulum*, [http://www.practicalphysics.org/go/Resources\\_11.html](http://www.practicalphysics.org/go/Resources_11.html)

Wikipedia, *Pendulum*, <http://en.wikipedia.org/wiki/Pendulum>

### Week 2 – Alternate Energy Sources

Aldous, Scott. *How Solar Cells Work*. <http://science.howstuffworks.com/solar-cell.htm>

Hewitt, Paul. *Conceptual Physics: Tenth Edition*. (Toronto: Pearson Addison Wesley, 2006), 319.

How Stuff Works. *How Many Solar Cells Would I Need In Order To Provide All Of The Electricity That My House Needs?* <http://home.howstuffworks.com/question418.htm>

Wikipedia. *Direct Current*. [http://en.wikipedia.org/wiki/Direct\\_current](http://en.wikipedia.org/wiki/Direct_current)

Canadian Hydro Developers Inc, *Wolfe Island Wind Project*, <http://www.wolfeislandwind.com/>

*How an Electric Generator Works*, <http://www.wvic.com/how-gen-works.htm>

Natural Resources Canada, *About Wind Energy*,  
[http://www.canren.gc.ca/tech\\_appl/index.asp?Cald=6&PgId=232](http://www.canren.gc.ca/tech_appl/index.asp?Cald=6&PgId=232)

Wikipedia, *Wind Turbine*, [http://en.wikipedia.org/wiki/Wind\\_turbine](http://en.wikipedia.org/wiki/Wind_turbine)

## Unit 4 – Electricity and Magnetism

### Week 1 &2 – circuits and electrostatics

Brain, Marshall. *How Batteries Work*, <http://electronics.howstuffworks.com/battery.htm>

Harris, Tom. *How Light Bulbs Work*, <http://home.howstuffworks.com/light-bulb.htm>

The Physics Classroom, *Lesson 2: Electric Current – What is an Electric Circuit?*  
<http://www.glenbrook.k12.il.us/GBSSCI/PHYS/CLASS/circuits/u9l2a.html>

Beaty, William, *Sticky Electrostatics*, <http://amasci.com/emotor/sticky.html>

Beaty, William J., *What IS Static Electricity*, [http://amasci.com/static/what\\_is\\_static.html](http://amasci.com/static/what_is_static.html)

Wikipedia. *Electric Charge*, [http://en.wikipedia.org/wiki/Electric\\_charge](http://en.wikipedia.org/wiki/Electric_charge)

Zavisa, John, *How Lightning Works*, <http://science.howstuffworks.com/lightning.htm>

Fundamentals of Electricity, *Series Circuits*, <http://lansing.apogee.net/foe/fcsp.asp>

*Ohm's Law*, <http://www.walter-fendt.de/ph14e/ohmslaw.htm>

The Physics Classroom, *Lesson 4: Circuit Connections – Series Circuits*,  
<http://www.glenbrook.k12.il.us/qbssci/phys/CLass/circuits/u9l4c.html>

*Ohm's Law*, <http://www.walter-fendt.de/ph14e/ohmslaw.htm>

*The Parallel Circuit*, <http://regentsprep.org/Regents/physics/phys03/bparcir/default.htm>

The Physics Classroom, *Lesson 4: Circuit Connections – Parallel Circuits*,  
<http://www.glenbrook.k12.il.us/qbssci/Phys/Class/circuits/u9l4d.html>

Minerals Zone, *Graphite*, <http://www.mineralszone.com/minerals/graphite.html>

Science Buddies, *Pencil Resistors*,  
[http://www.sciencebuddies.org/mentoring/project\\_ideas/Elec\\_p013.shtml](http://www.sciencebuddies.org/mentoring/project_ideas/Elec_p013.shtml)

The Physics Classroom, *Lesson 3: Electrical Resistance*,  
<http://www.glenbrook.k12.il.us/qbssci/phys/class/circuits/u9l3b.html>

Wikipedia, *Electrical Resistance*, [http://en.wikipedia.org/wiki/Electrical\\_resistance](http://en.wikipedia.org/wiki/Electrical_resistance)

### Week 3 – Magnetism and Electromagnets

Brain, Marshall, *How Compasses Work*, <http://www.howstuffworks.com/compass.htm>

Cool Magnet Man, *What is attracted to magnets*, <http://www.coolmagnetman.com/magattr.htm>

Wikipedia, Magnet, <http://en.wikipedia.org/wiki/Magnet>

Magnets and Electromagnets, <http://hyperphysics.phy-astr.gsu.edu/hbase/magnetic/elemaq.html>

Gauss Rifle, <http://scitoys.com/scitoys/scitoys/magnets/gauss.html>

Science by Email, Activity: Magnetic Rocket,  
<http://www.csiro.au/helix/scienceemail/activities/MagneticRocket.html>

Brain, Marshall, How Electromagnets Work, <http://www.howstuffworks.com/electromagnet.htm>

The Electromagnet,  
<http://physics.kenyon.edu/EarlyApparatus/Electricity/Electromagnet/Electromagnet.html>

Wikipedia, Electromagnet, <http://en.wikipedia.org/wiki/Electromagnet>

Wikipedia, Electric Motor, [http://en.wikipedia.org/wiki/Electric\\_motor](http://en.wikipedia.org/wiki/Electric_motor)

Electric Motors and Generators, <http://www.physclips.unsw.edu.au/jw/electricmotors.html>

## Unit 5 – Light

### Week 1 – Reflection

Physics Tips, *The Law of Reflection*, <http://physics.science-tips.org/optics-and-waves/light/the-law-of-reflection.html>

The Physics Classroom, *Lesson 1: Reflection and its Importance*,  
<http://www.physicsclassroom.com/Class/refln/u13l1c.html>

Science NetLinks, *Seeing Around Corners*,  
[http://www.sciencenetlinks.com/lessons\\_printable.cfm?DocID=306](http://www.sciencenetlinks.com/lessons_printable.cfm?DocID=306)

Wikipedia, *Periscope*, <http://en.wikipedia.org/wiki/Periscope>

Edkins, Jo. Making your own Maze. <http://gwydir.demon.co.uk/jo/maze/design.htm#branch>

### Week 2 – Refraction

Reed, Rick, *Refraction of light*, <http://www.ps.missouri.edu/rickspage/refract/refraction.html>

The Physics Classroom, *Refraction and the Ray Model of Light*,  
<http://www.physicsclassroom.com/Class/refrn/refrntoc.html>

Wikipedia, *Refraction*, <http://en.wikipedia.org/wiki/Refraction>

*Image Formation by a Converging Lens*,  
[http://www.physics.uoquelfh.ca/applets/Intro\\_physics/kisalev/java/clens/index.html](http://www.physics.uoquelfh.ca/applets/Intro_physics/kisalev/java/clens/index.html)

*Image Formation by a Diverging Lens*,  
[http://www.physics.uoquelfh.ca/applets/Intro\\_physics/kisalev/java/dlens/index.html](http://www.physics.uoquelfh.ca/applets/Intro_physics/kisalev/java/dlens/index.html)

ThinkQuest, *Optics – Geometrical Optics and Thin Lenses*,  
<http://library.thinkquest.org/C003776/inqles/print/chapter4.htm>

*Thin Lenses*, <http://physics.tamuk.edu/~suson/html/4323/thin.html>

Freudenrich, Craig C, HowStuffWorks, *How Fiber Optics Work*,  
<http://electronics.howstuffworks.com/fiber-optic.htm>

*Total Internal Reflection*, [http://theory.uwinnipeg.ca/mod\\_tech/node114.html](http://theory.uwinnipeg.ca/mod_tech/node114.html)

Wikipedia, *Optical Fiber*, [http://en.wikipedia.org/wiki/Optical\\_Fiber](http://en.wikipedia.org/wiki/Optical_Fiber)

### Week 3 – Color & The Spectrum

Color Vision & Art, *Newton and the Color Spectrum*, <http://webexhibits.org/colorart/bh.html>

HowStuffWorks, *What causes a rainbow?* <http://science.howstuffworks.com/question41.htm>

HowStuffWorks, *Why do CDs reflect rainbow colors?*

<http://electronics.howstuffworks.com/question52.htm>

*Color Box Applet*, <http://pdukes.phys.utb.edu/PhysApplets/Colors/TabbedcolorBox.html>

HowStuffWorks, *Color TV Screen*, <http://electronics.howstuffworks.com/tv10.htm>

Wikipedia, *Color Printing*, [http://en.wikipedia.org/wiki/Color\\_printing](http://en.wikipedia.org/wiki/Color_printing)



