

<p><b>Subject: Science</b>  <b>Grade Level: Third Grade</b>  <b>Unit Titles: (2 Units to cover)</b></p> <ul style="list-style-type: none"> <li>• <b>Motion &amp; Energy</b></li> <li>• <b>Earth's Systems</b></li> </ul>	<p><b>Timeframe Needed for Completion: 4 to 5 weeks</b></p> <p><b>Grading Period: 3<sup>rd</sup> 9 weeks</b></p>
<p><b>Big Idea/Theme: Physical Science</b></p> <p><b>Understandings:</b></p> <ul style="list-style-type: none"> <li>• Motion</li> <li>• Transfer of Energy</li> <li>• Saltwater and freshwater bodies of water exist on Earth.</li> <li>• Earth's land features through use of models, pictures, diagrams, and maps.</li> </ul>	
<p><b>Essential Questions:</b></p> <p><b>How would you demonstrate the affects of Earth's pull on objects without touching them?</b></p> <p><b>How do we measure speed?</b></p> <p><b>How do we transform energy from one object to another?</b></p> <p><b>How do you describe the different physical features of Earth ?</b></p>	<p><b>Curriculum Goals/Objectives:</b></p> <p><b>3.P.1 Understand motion and factors that affect motion.</b></p> <ul style="list-style-type: none"> <li>• 3.P.1.1 Infer changes in speed or direction resulting from forces acting on an object.</li> <li>• 3.P.1.2 Compare the relative speeds (faster or slower) of objects that travel the same distance in different amounts of time.</li> <li>• 3.P.1.3 Explain the effects of earth's gravity on the motion of any object on or near the earth.</li> </ul> <p><b>3.P.3 Recognize how energy can be transferred from one object to another.</b></p> <ul style="list-style-type: none"> <li>• 3.P.3.1 Recognize that energy can be transferred from one object to another by rubbing them against each other.</li> <li>• 3.P.3.2 Recognize that energy can be transferred from a warmer object to a cooler one by contact or at a distance and the cooler object gets warmer.</li> </ul> <p><b>3.E.2 Compare the structures of the Earth's surface using models or three-dimensional diagrams.</b></p> <ul style="list-style-type: none"> <li>• 3.E.2.1 Compare Earth's saltwater and freshwater features (including oceans, seas, rivers, lakes, ponds, streams, and glaciers).</li> <li>• 3.E.2.2 Compare Earth's land features (including volcanoes, mountains, valleys, canyons, caverns, and islands) by using models, pictures, diagrams, and maps. (correlate with social studies this 9 weeks)</li> </ul>

**Vocabulary:**

Heat energy, friction, heat transfer, properties, particles, vibrate, force, speed, direction, travel, distance, gravity  
saltwater, freshwater, brackish, organisms, oceans, seas, rivers, lakes, ponds, streams, glaciers, volcanoes, mountains, valleys, canyons, caverns, islands, maps

**Essential Skills:**

- When a force acts on an object it will result in a change of speed/direction.
- Speed affects the time it takes for an object to travel a particular distance.
- Earth “pulls” on objects on or near it without touching them.
- Rubbing objects together creates friction that releases energy.
- Objects transfer energy by giving off or receiving energy waves.
- Convection (commonly gasses and liquids) and conduction (more commonly solids) are best understood not as vocabulary but through observed effects using everyday materials such as water, air, cooking, and heating utensils.
- Bodies of water on the Earth’s surface are named based on characteristics and location.
- Bodies of water are salty, “fresh,” and “brackish,” and some are frozen in ice sheets and glaciers.
- Different organisms have adapted to live in different types of water.
- The surface of the Earth has different physical features.
- Features may be represented according to their attributes on maps, models, etc.

**Suggested Activities:**

<http://teams.lacoe.edu/documentation/classrooms/judi/forces/activities/energy.html>

<http://www.cowetaschools.org/eses/IT/forces%20and%20motion%20webquest.htm>

**BBC Push/Pull interactive**

[http://www.bbc.co.uk/schools/scienceclips/ages/5\\_6/pushes\\_pulls.shtml](http://www.bbc.co.uk/schools/scienceclips/ages/5_6/pushes_pulls.shtml)

**BBC Weight and Movement interactive**

[http://www.bbc.co.uk/schools/scienceclips/ages/6\\_7/forces\\_movement.shtml](http://www.bbc.co.uk/schools/scienceclips/ages/6_7/forces_movement.shtml)

**BBC Friction interactive**

[http://www.bbc.co.uk/schools/scienceclips/ages/8\\_9/friction.shtml](http://www.bbc.co.uk/schools/scienceclips/ages/8_9/friction.shtml)

**Amusement Park Physics**

<http://www.learner.org/interactives/parkphysics/coaster.html>

**BBC Forces in action**

[http://www.bbc.co.uk/schools/scienceclips/ages/10\\_11/forces\\_action.shtml](http://www.bbc.co.uk/schools/scienceclips/ages/10_11/forces_action.shtml)

**The Magic School Bus plays ball**

<http://www2.scholastic.com/browse/article.jsp?id=1648>

Push-Me Pull-Me toys activity:

<http://www.learnnc.org/lp/editions/designtech/6805?style=print>

**Websites to use:**

[http://library.thinkquest.org/CR0215468/force\\_and\\_motion.htm](http://library.thinkquest.org/CR0215468/force_and_motion.htm)

**Education City (Grade 5):**

- **Outer Space-** gravity’s effect on objects
- **Extreme Sports-** effects of force on objects

**Education City (Grade2)**

- **Cold as Ice-** melting, freezing
- **Meltdown-** what happens to materials when they are heated

**Books:**

Why do balls bounce? : All about gravity by **Rob Moore.**

Gravity in action: roller coasters! By Joan Newton

Galileo's leaning tower experiment : a science adventure by Wendy Macdonald ; illustrated by Paolo Rui.

Forces make things move by Kimberly Brubaker Bradley ; illustrated by Paul Meisel.

States of matter : a question and answer book by by Fiona Bayrock.

What is the world made of? : All about solids, liquids, and gases by Kathleen Weidner Zoehfeld ; illustrated by Paul Meisel.

Looking at solids, liquids, and gases : how does matter change? By Jackie Gaff.

Bartholomew and the Oobleck by Dr. Seuss

**Video:**

The Magic School Bus Plays Ball

**Writing Activity:**

Pretend you are a molecule of water. Describe the different states you are in as temperature around you changes.

**Suggested Activities:**

Converting-Experiment Activities- make ice cream, make butter, make oobleck (read Dr. Seuss), make silly putty, make play dough