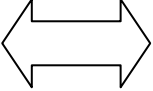
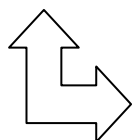


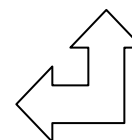
# Grade 3 Science

<b>Unit Title</b>	<b>3.1 Investigating Matter</b>
Time frame	8 Weeks
21 <sup>st</sup> Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration ICT (Information, Communications and Technology) Literacy Flexibility and Adaptability Initiative and Self-Direction Productivity and Accountability Leadership and Responsibility Social and Cross Cultural Skills
Interdisciplinary focus and technology integration	Art- Basket Weaving (TM E4) Math-Measuring in experiments Language Arts/ESL- Word of the Day (Vocabulary Words) Technology- Use the internet to explore properties of matter.

Essential Questions		Big Ideas
<ul style="list-style-type: none"> <li>• What are physical properties of matter?</li> <li>• What are chemical changes?</li> <li>• What are solids, liquids and gases?</li> <li>• How does matter get measured?</li> </ul>		-Matter has predictable physical and chemical properties. These properties determine the ways in which matter can change. -Matter has specific properties that can be observed, described, and measured. Matter can change from one state to another without altering its composition. -The properties of specific types of matter can be used to predict what types of changes it will undergo. Some changes, in which no new types of matter are formed, are physical. Some changes, in which new types of matter are formed, are chemical. -Matter gets measured by the metric system.



Learning Targets-students will be able to;
<ul style="list-style-type: none"> <li>•Observe physical properties of matter</li> <li>•Identify matter as a solid, liquid, or gas</li> <li>•Describe evaporation</li> <li>•Demonstrate how to gather information about mass and volume by using appropriate tools to identify physical properties of matter</li> <li>•Recognize that science skills are used in a variety of careers</li> <li>•Indicate that matter has multiple forms and can be</li> </ul>



changed from one form to another

- Describe a chemical change
- Recognize that when two or more substances combine, a new substance may form that has properties different from the original substances

## Assessment

- Formal and Informal Teacher Observations
- Tests / Quizzes
- Diagrams and Models
- Student Projects
- Experiment/Investigation

## Differentiation

- Hands-On Activities
- Diagnostic Assessment
- Kinesthetic Activities
- Re-teach and Enrichment Activities
- Cooperative Learning (Flexible Grouping)
- Peer Tutoring
- Tiered Activities

## Content Standards

**5.1 Science Practices:** All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

**5.2 Physical Science:** All students will understand that physical science principles, including fundamental ideas about matter, energy, and motion, are powerful conceptual tools for making sense of phenomena in physical, living, and Earth systems science.

**A. Properties of Matter :** All objects and substances in the natural world are composed of matter. Matter has two fundamental properties: matter takes up space, and matter has inertia.

5.2.4.A.1	Identify objects that are composed of a single substance and those that are composed of more than one substance using simple tools found in the classroom.
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5.2.4.A.2	Plan and carry out an investigation to distinguish among solids, liquids, and gasses.
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5.2.4.A.3	Determine the weight and volume of common objects using appropriate tools.
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5.2.4.A.4	Categorize objects based on the ability to absorb or reflect light and conduct heat or electricity
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**B. Changes in Matter :** Substances can undergo physical or chemical changes to form new substances. Each change involves energy.

5.2.4.B.1	Predict and explain what happens when a common substance, such as shortening or candle wax, is heated to melting and then cooled to a solid.
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## Approaches to Learning

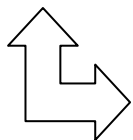
- Observation Skills
- Analyzing Skills
- Evaluation Skills

<b>Learning Experiences</b> <b>Suggested activities</b>	<b>Teaching Strategies</b>
<ul style="list-style-type: none"> <li>• Use balance scales and gram cubes to measure the mass of various classroom objects.</li> <li>• Observe the changing states of matter using water.</li> <li>• K-W-L charts</li> <li>• Polishing Pennies(activity attached)</li> <li>• Bubble-o-meter(activity attached)</li> </ul>	<ul style="list-style-type: none"> <li>•Direct Instruction/Lectures</li> <li>•Differentiated Instruction</li> <li>•Interdisciplinary Activities</li> <li>•Cooperative Learning Activities</li> <li>•Reinforcement and Remediation</li> <li>•Review Exercises</li> <li>•ActivBoard Presentations</li> <li>•Experiments/Problem Solving Activities</li> <li>•Viewing of videos</li> </ul>
<b>Resources</b> <ul style="list-style-type: none"> <li>• Harcourt Science- Grade 3 Book</li> <li>• Activ Board</li> <li>• Posters/Maps/Models</li> <li>• Hand outs</li> <li>• Videos</li> <li>• Trade books</li> <li>• Class Trips</li> <li>• <a href="http://portal.acs.org/portal/acs/corg/content?_nfpb=true&amp;_pageLabel=PP_TRANSITIONMAIN&amp;node_id=125&amp;use_sec=false&amp;sec_url_var=region1&amp;__uuid=0e14af62-34dd-4a9b-b239-3e20c0792912">http://portal.acs.org/portal/acs/corg/content?_nfpb=true&amp;_pageLabel=PP_TRANSITIONMAIN&amp;node_id=125&amp;use_sec=false&amp;sec_url_var=region1&amp;__uuid=0e14af62-34dd-4a9b-b239-3e20c0792912</a></li> </ul>	

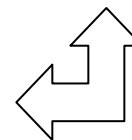
# Grade 3 Science

<b>Unit Title</b>	<b>3.2 Energy</b>
Time frame	8 Weeks
21 <sup>st</sup> Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration ICT (Information, Communications and Technology) Literacy Flexibility and Adaptability Initiative and Self-Direction Productivity and Accountability Leadership and Responsibility Social and Cross Cultural Skills
Interdisciplinary focus and technology integration	Math- Using Measuring Tools for Experiments (TM F51) Social Studies- Research Inventors (TM F40) Language Arts/ESL- Word of the Day (Vocabulary Words) Technology- Use the internet to explore energy.

Essential Questions	Big Ideas
<ul style="list-style-type: none"> <li>• How is energy stored?</li> <li>• How does energy move?</li> <li>• How can energy be changed?</li> <li>• What is heat?</li> <li>• Why does thermal energy move?</li> <li>• How is temperature measured?</li> </ul>	<ul style="list-style-type: none"> <li>-Energy is the ability to cause change. Without energy, there would be no heat or motion.</li> <li>-Energy can be stored as fuel or food. Energy can move in many ways, and it can change forms. Sunlight can be changed into food, fuel, or electricity.</li> <li>- Heat is the movement of thermal energy. Thermal energy moves in predictable ways through specific objects.</li> </ul>



Learning Targets-students will be able to;
<ul style="list-style-type: none"> <li>• Demonstrate one way energy can be used to move objects</li> <li>• Identify sources of energy and the different forms energy can take</li> <li>• Compare various kinds of stored energy</li> <li>• Observe that energy can travel as a wave</li> <li>• Recognize that energy moves out of a battery and into other objects</li> <li>• Describe how thermal energy moves as heat</li> <li>• Observe that energy can change from one form to another</li> </ul>



- Describe how machines and living things can convert stored energy into motion and heat
- Recognize that heat is sometimes produced as a waste product of motion
- Recognize that science skills are used in a variety of careers
- Relate heat and thermal energy
- Explain how thermal energy affects matter
- Describe three ways in which thermal energy moves from place to place
- Compare tools for measuring temperature
- Explore ways to control thermal energy

## Assessment

- Formal and Informal Teacher Observations
- Tests / Quizzes
- Diagrams and Models
- Student Projects
- Experiment/Investigation

## Differentiation

- Hands-On Activities
- Diagnostic Assessment
- Kinesthetic Activities
- Re-teach and Enrichment Activities
- Cooperative Learning (Flexible Grouping)
- Peer Tutoring
- Tiered Activities

## Content Standards

**5.1 Science Practices:** All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

**5.2 Physical Science:** All students will understand that physical science principles, including fundamental ideas about matter, energy, and motion, are powerful conceptual tools for making sense of phenomena in physical, living, and Earth systems science.

**C. Forms of Energy :** Knowing the characteristics of familiar forms of energy, including potential and kinetic energy, is useful in coming to the understanding that, for the most part, the natural world can be explained and is predictable.

5.2.4.C.1	Compare various forms of energy as observed in everyday life and describe their applications.
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5.2.4.C.2	Compare the flow of heat through metals and nonmetals by taking and analyzing measurements.
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5.2.4.C.3	Draw and label diagrams showing several ways that energy can be transferred from one place to another.
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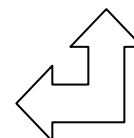
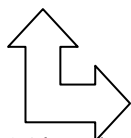
5.2.4.C.4	Illustrate and explain what happens when light travels from air into water.
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<b>Approaches to Learning</b>	
<ul style="list-style-type: none"> <li>•Observation Skills</li> <li>•Analyzing Skills</li> <li>•Evaluation Skills</li> </ul>	
<b>Learning Experiences</b>	<b>Teaching Strategies</b>
<b>Suggested activities</b>	
<ul style="list-style-type: none"> <li>• Twisting up Energy (TM F4)</li> <li>• Waves of Energy(TM F14)</li> <li>• Lighting a Bulb (TM F22)</li> <li>• Rubbing Objects Together(TM F34c &amp; F36)</li> <li>• What Gets Hot (TM F34c and F44)</li> <li>• Measuring Temperature (TM F34c and F50)</li> <li>• Solar Oven (attached)</li> </ul>	<ul style="list-style-type: none"> <li>•Direct Instruction/Lectures</li> <li>•Differentiated Instruction</li> <li>•Interdisciplinary Activities</li> <li>•Cooperative Learning Activities</li> <li>•Reinforcement and Remediation</li> <li>•Review Exercises</li> <li>•ActivBoard Presentations</li> <li>•Experiments/Problem Solving Activities</li> <li>•Viewing of Videos</li> </ul>
<b>Resources</b>	
<ul style="list-style-type: none"> <li>• Harcourt Science- Grade 3 Book</li> <li>• Activ Board</li> <li>• Posters/Maps/Models</li> <li>• Hand outs</li> <li>• Videos</li> <li>• Trade books</li> <li>• Class Trips</li> <li>• <a href="http://portal.acs.org/portal/acs/corg/content?_nfpb=true&amp;_pageLabel=PP_TRANSITIONMAIN&amp;node_id=125&amp;use_sec=false&amp;sec_url_var=region1&amp;__uuid=0e14af62-34dd-4a9b-b239-3e20c0792912">http://portal.acs.org/portal/acs/corg/content?_nfpb=true&amp;_pageLabel=PP_TRANSITIONMAIN&amp;node_id=125&amp;use_sec=false&amp;sec_url_var=region1&amp;__uuid=0e14af62-34dd-4a9b-b239-3e20c0792912</a></li> <li>• <a href="http://www.icpsolar.com/html/kdactivi.asp">http://www.icpsolar.com/html/kdactivi.asp</a>.</li> </ul>	

# Grade 3 Science

<b>Unit Title</b>	<b>3.3 Earth's Land</b>
Time frame	8 weeks
21 <sup>st</sup> Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration ICT (Information, Communications and Technology) Literacy Flexibility and Adaptability Initiative and Self-Direction Productivity and Accountability Leadership and Responsibility Social and Cross Cultural Skills
Interdisciplinary focus and technology integration	LA Reading for main ideas. Technology- internet viewing, project creation Art projects and drawings

Essential Questions	↔	Big Ideas
<ul style="list-style-type: none"> <li>• What are rocks and minerals?</li> <li>• How Do Rocks Form?</li> <li>• What are fossils?</li> <li>• What are landforms?</li> <li>• What are slow landform changes?</li> <li>• What are rapid landform changes?</li> <li>• How do soils form?</li> <li>• How do soils differ?</li> <li>• How can we conserve soil?</li> <li>• What are resources?</li> <li>• What are the different kinds of resources?</li> <li>• How can we conserve Earth's resources?</li> </ul>	↔	<p>Earth is constantly changing due to processes on and within it. Many of these changes occur within Earth's crust. Resources that are important to humans are found in Earth's crust. Earth's crust is composed of minerals and rocks. Rocks change form during the rock cycle. Fossils are found within certain rocks. These fossils provide information about changes in living organisms over time.</p> <p>Processes acting on Earth's surface produce changes in its landforms. These changes may be slow or rapid. The process of weathering helps to produce soil. The addition of organic materials produces rich soils that can be used to grow crops. Earth's resources are used by the organisms on Earth in order to meet their needs. Some of these resources can be used, changed in form, and reused.</p>



## Learning Targets-students will be able to:

- Describe and give examples of minerals and rocks
- Identify the solid and liquid portions of Earth's structure. Identify the 3 types of rocks and how they form
- Describe how people use rocks
- Describe the sequence of events in the rock cycle that can change one type of rock into another.
- Describe how a fossil is formed
- Recognize where most fossils are found
- Describe how fossils show that life has changed.
- Give examples of different kinds of fossils.
- Identify some of the forces that change Earth's surface
- Describe the ways different landforms look
- Describe how wind, water, and ice shape Earth's surface
- Identify earthquakes, volcanoes, and floods. Describe how these changes the surface of Earth
- Identify where soil comes from and how it forms. Describe how soils are different
- Describe the importance of soil
- Identify the kinds of soils that are good for plants
- Identify ways that soil can be harmed
- Describe methods of conserving soil
- Identify and describe what common resources are
- Identify resources that will never run out and ones that could be used up
- Describe recycling and identify the way recycling saves resources. Give examples.
- Recognize that science skills are used in a variety of careers

## Assessment

- Formal and Informal Teacher Observations
- Tests / Quizzes
- Diagrams and Models
- Student Projects

- Experiment/Investigation

## Differentiation

- Hands-On Activities
- Diagnostic Assessment
- Kinesthetic Activities
- Re-teach Activities
- Cooperative Learning
- Peer Tutoring
- Tiered Activities and assessments

## Content Standards

**5.1 Science Practices:** All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

**5.4 Earth Systems Science:** All students will understand that Earth operates as a set of complex, dynamic, and interconnected systems, and is a part of the all-encompassing system of the universe.

**B. History of Earth :** From the time that Earth formed from a nebula 4.6 billion years ago, it has been evolving as a result of geologic, biological, physical, and chemical processes

5.4.4.B.1 Use data gathered from observations of fossils to argue whether a given fossil is terrestrial or marine in origin.

**C. Properties of Earth Materials :** Earth's composition is unique, is related to the origin of our solar system, and provides us with the raw resources needed to sustain life.

5.4.4.C.1 Create a model to represent how soil is formed.

5.4.4.C.2 Categorize unknown samples as either rocks or minerals.

## Approaches to Learning

- Observation Skills
- Analyzing Skills
- Evaluation Skills

### Learning Experiences Suggested Activities

Make a fossil mold  
Visit a quarry to collect rock and mineral samples.  
Classifying Rocks (see attached)  
The Rock Cycle (see attached)  
Reuse activity  
Folds in the Earth

### Teaching Strategies

- Direct Instruction/Lectures
- Differentiated Instruction
- Interdisciplinary Activities
- Cooperative Learning Activities
- Reinforcement and Remediation
- Review Exercises
- ActivBoard Presentations
- Experiments/Problem Solving Activities
- Viewing of Videos

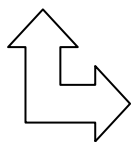
## Resources

- Internet
- Videos
- Textbook
- Handouts
- Models
- Maps

# Grade 3 Science

<b>Unit Title</b>	<b>3.4 Cycles on Earth and in Space</b>
Time frame	8 Weeks
21 <sup>st</sup> Century Themes	Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration ICT (Information, Communications and Technology) Literacy Flexibility and Adaptability Initiative and Self-Direction Productivity and Accountability Leadership and Responsibility Social and Cross Cultural Skills
Interdisciplinary focus and technology integration	Math- Chart the weather Art- Atmosphere Art (TM D31) Language Arts/ESL- Word of the Day (Vocabulary Words) Technology- Use the internet to explore Earth and Space.

Essential Questions	↔	Big Ideas
<ul style="list-style-type: none"> <li>•Where is water found on Earth?</li> <li>•What is the water cycle?</li> <li>•What is weather?</li> <li>•How are weather conditions measured?</li> <li>•What is a weather map?</li> </ul>	↔	<ul style="list-style-type: none"> <li>-Cycles on Earth are affected by the interactions of the nonliving components of the systems that comprise them</li> <li>-Water is found almost everywhere on Earth. Factors such as temperature and the energy from the sun work together to fuel the water cycle.</li> <li>-The interactions of air, water, and land play an important part in our weather. Large masses of air interact, and their characteristics can be predicted.</li> </ul>



Learning Targets-students will be able to;	↗
<ul style="list-style-type: none"> <li>•Identify where water is found on Earth.</li> <li>•Describe the forms of water and why it is important.</li> <li>•Explain the water cycle and how water changes from one form to another.</li> <li>•Identify the layers of the atmosphere</li> <li>•Define and describe what makes up the weather.</li> </ul>	↗

- Identify and describe how weather changes through temperature, precipitation and wind.
- Describe how people forecast the weather.
- Identify the symbols used on a weather map.
- Recognize that science skills are used in a variety of careers.

## Assessment

- Formal and Informal Teacher Observations
- Tests / Quizzes
- Diagrams and Models
- Student Projects
- Experiment/Investigation

## Differentiation

- Hands-On Activities
- Diagnostic Assessment
- Kinesthetic Activities
- Re-teach and Enrichment Activities
- Cooperative Learning (Flexible Grouping)
- Peer Tutoring
- Tiered Activities

## Content Standards

**5.4 Earth Systems Science:** All students will understand that Earth operates as a set of complex, dynamic, and interconnected systems, and is a part of the all-encompassing system of the universe.

**E. Energy in Earth Systems :** Internal and external sources of energy drive Earth systems.

5.4.4.E.1 Develop a general set of rules to predict temperature changes of Earth materials, such as water, soil, and sand, when placed in the Sun and in the shade.

5.4.4.F.1 Identify patterns in data collected from basic weather instruments.

**G. Biogeochemical Cycles :** The biogeochemical cycles in the Earth systems include the flow of microscopic and macroscopic resources from one reservoir in the hydrosphere, geosphere, atmosphere, or biosphere to another, are driven by Earth's internal and external sources of energy, and are impacted by human activity.

5.4.4.G.3 Trace a path a drop of water might follow through the water cycle.

5.4.4.G.4 Model how the properties of water can change as water moves through the water cycle.

## Approaches to Learning

- Observation Skills
- Analyzing Skills
- Evaluation Skills

## Learning Experiences

### Suggested activities

- Cloud in a jar (TM D23)
- Measuring Temperature (TMD26)
- The water cycle (see attached)
- Be a weather forecaster

## Teaching Strategies

- Direct Instruction/Lctures
- Differentiated Instruction
- Interdisciplinary Activities
- Cooperative Learning Activities

- Properties of air (TMD28)

- Reinforcement and Remediation
- Review Exercises
- ActivBoard Presentations
- Experiments/Problem Solving Activities

### **Resources**

- Harcourt Science- Grade 3 Book
- Activ Board
- Posters/Maps/Models
- Hand outs
- Videos
- Trade books
- Class Trips
- [http://portal.acs.org/portal/acs/corg/content?\\_nfpb=true&\\_pageLabel=PP\\_TRANSITIONMAIN&node\\_id=125&use\\_sec=false&sec\\_url\\_var=region1&\\_\\_uuid=0e14af62-34dd-4a9b-b239-3e20c0792912](http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_TRANSITIONMAIN&node_id=125&use_sec=false&sec_url_var=region1&__uuid=0e14af62-34dd-4a9b-b239-3e20c0792912)
- <http://www.icpsolar.com/html/kdactivi.asp>.

