



## Scope and Sequence

Grade: Fourth Physical Science

Content Area: Science Module: Energy and Motion

<b><i>Students will be able to answer the following essential questions</i></b>	<b><i>Inquiry Activities</i></b>	<b><i>Materials</i></b>	<b><i>Assessment tools</i></b>	<b><i>Notes</i></b>
<p>Lesson One *How do forces affect motion?</p> <p>Students will construct an explanation to describe the cause and effect relationship between forces and motion.</p> <p>Lesson Two *How are speed and energy related?</p> <p>Students will construct an explanation about the relationship between speed and energy.</p> <p>Lesson Three *How does energy transfer when objects collide? Students will ask questions and construct an</p>	<p>An Object's Motion</p> <p>An Object's Surface Area</p> <p>The Moving Ball</p> <p>Mass Matters</p> <p>Explore Toy Car Crashes</p>	<p>*golf ball &amp; table tennis ball</p> <p>*2 sheets of notebook paper</p> <p>*4 books, 2 cardboard tubes, masking tape, stopwatch, &amp; table tennis ball</p> <p>*2 books, clipboard, 500ml plastic bottle w/ screw cap, plastic cup, water, graduated cylinder, meter stick, &amp; masking tape</p> <p>*5 books, sheet of cardboard, masking tape, 2 identical toy cars, &amp; ruler</p>	<p>STEM Module Project to be completed after lessons one - three</p> <p>Design a Roller Coaster</p> <p>Students must design, build, test their roller coaster build as well as communicate their results.</p> <p>Student Rubric &amp; Teacher Rubric are included for grading.</p>	

explanation to describe the transfer of energy when objects collide.	Newton's Cradle	*Online simulation - google "newton's cradle"		
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## Scope and Sequence

Grade: Fourth Physical Science

Content Area: Science Module: Energy Transfer

<b><i>Students will be able to answer the following essential questions</i></b>	<b><i>Inquiry Activities</i></b>	<b><i>Materials</i></b>	<b><i>Assessment tools</i></b>	<b><i>Notes</i></b>
<p>Lesson One *What are the types of energy?</p> <p>Students will make observations to explain how different types of energy can be transferred in various ways.</p> <p>Lesson Two *How are sound and light energy transferred?</p> <p>Students will plan and carry out investigations to describe and model how energy transfers with sound and light.</p> <p>Lesson Three *How is electrical energy transferred?</p> <p>Students will use their observations from their investigations to describe</p>	<p>Build an energy transforming device</p> <p>Energy on the move</p> <p>Make Sound</p> <p>A bright idea</p> <p>Make it work</p> <p>Build different circuits</p>	<p>*safety goggles, rubber balloon, scissors, plastic cup, pom-poms, meter stick</p> <p>*safety goggles, wind-up toy, pom-pom launcher, pom-poms, rubber ball, marbles</p> <p>*Sharpened pencil, paper cup, paper clip, scissors, rubber band, ruler, masking tape</p> <p>*2 identical cups, markers, 2 sheets of black construction paper</p> <p>*mini lightbulb, wire with clips, d-cell battery</p> <p>*10 wires, 4 d-cell batteries, 4 battery</p>	<p>STEM Module Project to be completed after lessons one - four</p> <p>Design a Community Warning System</p> <p>Students must design, build, test their community warning system as well as communicate their results.</p> <p>Student Rubric &amp; Teacher Rubric are included for grading.</p>	

how energy is transferred by electric currents.  Lesson Four *What is heat?  Students will plan and carry out investigations to explain how energy can be transferred by heat.	Particles on the move  Energy transfer through matter	holders, 6 mini light bulbs, 6 lightbulb holders  *2 clear plastic cups, water (cold & hot), sharpie, white paper, blue & red food coloring, ice cube  *Simulation found online		
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### Scope and Sequence

Grade: Fourth Physical Science

Content Area: Science Module: Natural Resources in the Environment

<b>Students will be able to answer the following essential questions</b>	<b>Inquiry Activities</b>	<b>Materials</b>	<b>Assessment tools</b>	<b>Notes</b>
<p>Lesson One *How do we get energy from nonrenewable resources?</p> <p>Students will obtain and combine information about the source of nonrenewable resources, and how their uses affect humans.</p> <p>Lesson Two *How do we get energy from renewable resources</p> <p>Students will obtain and combine information about the source of renewable resources, and how their uses affect humans.</p> <p>Lesson Three *How does our use of energy resources affect the environment?</p> <p>Students will obtain and combine information about the effects of nonrenewable resources on the environment.</p> <p>Lesson Four *How can we design a</p>	<p>Limited Resources</p> <p>Energy Usage Investigation</p> <p>Renewable Resources</p> <p>Oil Spill Cleanup</p> <p>Build a solar circuit</p>	<p>*90 plastic beads (non-renewable), 10 beads of a different color (renewable), small bowl, small brown paper bag.</p> <p>*chromebook for research</p> <p>**80 plastic beads (non-renewable), 20 beads of a different color (renewable), 20 more beads of a diff. color, small bowl, small brown paper bag.</p> <p>*container w/ water, ruler, dark olive oil, bird feather, paper towels, dish detergent, plastic spoon, cotton balls, pieces of sponge, chenille stems.</p> <p>*solar cell with wires,</p>	<p>STEM Module Project to be completed after lessons one - four</p> <p>Build a solar oven</p> <p>Students must design, build, and test their ovens as well as communicate their results.</p> <p>Student Rubric &amp; Teacher Rubric are included for grading.</p>	

device that converts energy?  Students will use their observations to construct an explanation and design a device that converts energy from one form to another.		light socket with clips, LED lamp		
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### Scope and Sequence

Grade: Fourth Earth Science

Content Area: Science Module: Earth and Its Changing Features

<b>Students will be able to answer the following essential questions</b>	<b>Inquiry Activities</b>	<b>Materials</b>	<b>Assessment tools</b>	<b>Notes</b>
<p>Lesson One *How can we use maps to describe patterns in landforms?</p> <p>Students will use maps to interpret and analyze data and describe patterns in landforms</p> <p>Lesson Two *What can we learn from rocks and fossils?</p> <p>Students will construct an explanation about how rock and fossil formations change a landscape over time.</p> <p>Lesson Three *How do landscapes change over time?</p> <p>Students will plan and carry out investigations to observe the effects to Earth's surface by living and nonliving things.</p>	<p>Map California's Features</p> <p>Map the Ocean Floor</p> <p>Fossil Dig</p> <p>Fossil Model</p> <p>Shake, Rattle, &amp; Roll</p> <p>Effects of Vegetation</p>	<p>*sheet of cardboard, Cali outline, glue, measuring cup, flour, salt, water, bowl, spoon, sharpies</p> <p>*modeling clay, shoe box, pencil, drinking straw, ruler</p> <p>*Online simulation</p> <p>*modeling clay, classroom objects</p> <p>*graduated cylinder, 2 jars w/ lids &amp; water, sandstone rocks, stopwatch, hand lens, masking tape, marker</p> <p>*2 sm aluminum pans, lg aluminum pan, measuring cup, topsoil, 14 forks, filter paper, pan balance, ruler, wood block</p>	<p>STEM Module Project to be completed after lessons one - three</p> <p>Don't get Carried Away...Identify a problem caused by erosion and come up with two solutions.</p> <p>Students must design, build, and test their solutions as well as communicate their results.</p> <p>Student Rubric &amp; Teacher Rubric are included for grading.</p>	

## **Scope and Sequence**

Grade: Fourth Earth Science

Content Area: Science Module: Earthquakes



<b><i>Students will be able to answer the following essential questions</i></b>	<b><i>Inquiry Activities</i></b>	<b><i>Materials</i></b>	<b><i>Assessment tools</i></b>	<b><i>Notes</i></b>
<p>Lesson One *What patterns are there in the location of earthquakes?</p> <p>Students will analyze and interpret data from maps to observe patterns of earthquake occurrences.</p> <p>Lesson Two *How can we model earthquake movement?</p> <p>Students will develop and use models to describe the patterns in waves and how waves causes objects to move</p> <p>Lesson Three *What solutions can reduce earthquake damage?</p> <p>Students will construct explanations about the effects of earthquakes on structures and design solutions to reduce earthquake damage.</p>	<p>Plot Earthquakes - data analysis</p> <p>Earth's Features</p> <p>Make Waves</p> <p>Earthquake Waves</p> <p>Earthquake Effects</p> <p>Earthquake-Resistant Structures - Research</p>	<p>*table from workbook</p> <p>*topographic world map</p> <p>*aluminum pan w/ water, ruler, cork, slinky, modeling clay, masking tape</p> <p>*Earthquake waves simulation online</p> <p>*tape, 2 identical textbooks, construction paper, blocks, 4 smooth pencils</p> <p>*Access to Internet</p>	<p>STEM Module Project to be completed after lessons one - three</p> <p>Design an earthquake resistant building</p> <p>Students must design, build, and test their models as well as communicate their results.</p> <p>Student Rubric &amp; Teacher Rubric are included for grading.</p>	

### **Scope and Sequence**

Grade: Fourth Life Science

Content Area: Science Module: Structures and Functions of Living Things

<b><i>Students will be able to answer the following essential questions</i></b>	<b><i>Inquiry Activities</i></b>	<b><i>Materials</i></b>	<b><i>Assessment tools</i></b>	<b><i>Notes</i></b>
<p>Lesson One *How do plant structures help them survive, grow and reproduce?</p> <p>Students will construct an argument to explain how plants use their structures to survive, grow, and reproduce.</p> <p>Lesson Two *How do animal structures help them survive, grow, and reproduce?</p> <p>Students will construct an argument to explain how animals use their structures to survive, grow, and reproduce.</p>	<p>Plant Parts</p> <p>Survival in different habitats</p> <p>Animal Parts</p> <p>Put your best foot forward</p>	<p>*hand lens</p> <p>*chromebook for research</p> <p>*Colored Pencils</p> <p>*2 plastic containers, water, pea gravel, colored gravel, tongue depressor, fork, tweezers, colored pencils</p>	<p>STEM Module Project to be completed after lessons one and two</p> <p>National Park Presentation</p> <p>Students will prepare a presentation about an endangered species in their park. They will use a model to identify internal and external structures with evidence that explains how the internal and external structures work together to support the organism's survival, growth, behavior, and reproduction.</p> <p>Student Rubric &amp; Teacher Rubric are included for grading.</p>	

## **Scope and Sequence**

Grade: Fourth Life Science

Content Area: Science Module: Information Processing and Transfer

<b><i>Students will be able to answer the following essential questions</i></b>	<b><i>Inquiry Activities</i></b>	<b><i>Materials</i></b>	<b><i>Assessment tools</i></b>	<b><i>Notes</i></b>
<p>Lesson One *How do animals sense and interpret their environment?</p> <p>Students will use a model to explain how animals sense and interpret their environment.</p> <p>Lesson Two *What is the role of animals' eyes?</p> <p>Students will develop and use a model to explain how light reflecting from objects allows animals' eyes to see.</p> <p>Lesson Three *How do we use patterns to transmit information?</p> <p>Students will construct an explanation about how patterns are used to transmit information.</p>	<p>Sense of touch</p> <p>Pill Bugs</p> <p>How light travels</p> <p>It's time to focus</p> <p>Secret Message</p> <p>Morse Code Message</p> <p>What does that say?</p>	<p>*3 sandpaper samples of different grades, blindfold, hand lens</p> <p>*15 pill bugs, plastic habitat, soil w/ leaves, hand lens, paper towels, water, fish food.</p> <p>*mirror, white paper, flashlight, protractor, cup of sand, clear cup of water, index card, hand lens</p> <p>*hand lens, white piece of paper</p> <p>*flashlight</p> <p>*flashlight, other classroom objects</p> <p>*Chromebook for research</p>	<p>STEM Module Project to be completed after lessons one - three</p> <p>Design a pixel message.</p> <p>Students will design a device that uses sound, light, kor both to create two different binary codes.</p> <p>Students must design, build, and test their models as well as communicate their results.</p> <p>Student Rubric &amp; Teacher Rubric are included for grading.</p>	