

COURSE NUMBER: 2007020		COURSE NAME: M/J COMPREHENSIVE SCIENCE 2	
UNIT TITLE: <i>The Nature of Science</i>		UNIT ESSENTIAL QUESTION:	
SEMESTER: 1	Grading Period: 1		
CONCEPT		CONCEPT	
Science And The Natural World		Thinking Like A Scientist	Measurement – A Common Language
STANDARD(S)		STANDARD(S)	
SC.7(8).N.1.1, SC.7.N.1.2, SC.7.N.1.5, SC.7(6).N.2.2, SC.7.N.3.1, LA.7.4.2.2, MA.6.3.6		SC.7.N.1.1, LA.7.2.2.3	SC.7.N.1.1
LESSON ESSENTIAL QUESTION		LESSON ESSENTIAL QUESTION	
What skills do scientists use?		What attitudes help you think scientifically? What scientific reasoning?	Why do scientists use a standard measurement system? What are some SI units of measurement?
VOCABULARY		VOCABULARY	
Science, observing, inferring, predicting, classifying, evaluating, models, variable, independent variable, dependent variable		Skepticism, ethics, personal bias, cultural bias, experimental bias, objective, deductive reasoning, inductive reasoning	Metric system, International System of Units (SI), mass, weight, volume, meniscus, density
RESOURCES			
Lab Zone – Inquiry warm-up, is it really true? Teacher Demo – Classifying Plants Quick Lab – Classifying Objects Image Library Assess Understanding – What Skills do scientists use? Key Concept Summary – What skills do scientists use? Review and Reinforce – Understanding main ideas Enrich – Scientists Needed		Lab Zone – How keen are your senses Teacher Demo – Quick Lab – Thinking like a scientist Image Library Assess Understanding – What attitudes help you think Scientifically? Key Concept Summary – What attitudes help you think Scientifically? Review and Reinforce – Understanding main ideas Enrich – Scientists working together	
		Lab Zone – History of measurement Teacher Demo – Use a triple-beam balance - Volume of a rock and shoebox Quick Lab – Measurement of Time Image Library Assess Understanding – History of measurement Key Concept Summary – Why a standard of measurement Review and Reinforce – Understanding main ideas Enrich – Converting English units to metric units	

Additional Information

Digital Lesson**Art in Motion**

MyScienceonline.com – What is science?

- Skills scientists use
- My science coach

Digital Lesson**Art in Motion**

MyScienceonline.com – Scientific thinking

- Scientific reasoning
- My science coach

Digital Lesson**Art in Motion**

MyScienceonline.com – Standard Measurement System

- Virtual Lab
- SI Units of Measurement
- My science coach

CONCEPT	CONCEPT	CONCEPT
Mathematics and Science	Graphs in Science	Scientific Inquiry
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.N.1.1, MA.6.S.6.2, MA.6.A.3.6	SC.7.N.1.1, MA.6.A.3.6, LA.7.2.2.3	SC.7.N.1.1, SC.N.1.2, LA.7.4.2.2, MA.6.A.3.6
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
What Math Skills Do Scientists Use? What Math Tools Do Scientists Use?	What Kinds of Data Do Line Graphs Display? Why Are Line Graphs Powerful Tools?	What is Scientific Inquiry How Do You Design and Conduct an Experiment?
VOCABULARY	VOCABULARY	VOCABULARY
Estimate, accuracy precision, significant figures, percent error, mean, median, mode, range, anomalous data	Graph, linear graph, nonlinear graph	Scientific inquiry, hypothesis, controlled experiment, data, repeated trials, replication
RESOURCES		
Lab Zone – How many marbles are there? Teacher Demo – Measure length with accuracy and precision Quick Lab – For good measure Image Library Assess Understanding – What math skills do scientists Use? Key Concept Summary – What math skills do scientists Use? Review and Reinforce – Understanding main ideas Enrich – Precision and range	Lab Zone –What’s in a picture Lab – Investigating density graphs Image Library Assess Understanding – What kinds of data do line graphs display? Key Concept Summary – What kinds of data do line graphs display? Review and Reinforce – Understanding main ideas Enrich – Bar graphs	Lab Zone – What’s happening? Teacher Demo – Observe rate of fall Quick Lab – Scientific inquiry Lab Investigation – Keeping flowers fresh Image Library Assess Understanding – What is scientific inquiry Key Concept Summary – What is scientific inquiry Review and Reinforce – Understanding main ideas Enrich – An enlightening discovery
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Math skills <ul style="list-style-type: none"> - Digital lesson - My science coach - Math tools 	Digital Lesson Art in Motion MyScienceonline.com – Line graphs <ul style="list-style-type: none"> - Using line graphs - My science coach - Line graphs 	Digital Lesson Art in Motion MyScienceonline.com – Scientific inquiry <ul style="list-style-type: none"> - Scientific methodology - My science coach - scientific knowledge

CONCEPT	CONCEPT	CONCEPT
Models as Tools in Science		
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.N.3.2, LA.7.2.2.3		
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
Why do scientists use models? What is a system? How are models of systems used?		
VOCABULARY	VOCABULARY	VOCABULARY
Model, system, input, process, output, feedback		
RESOURCES		
<p>Lab Zone – Inquiry Lab – Scale models Quick Lab – Making models - Systems - Models in nature</p> <p>Image Library Assess Understanding – Why do scientists use models? Key Concept Summary – Why scientists use models? Review and Reinforce – Understanding main ideas Enrich – A scientific model</p>		
Additional Information		
<p>Digital Lesson Art in Motion MyScienceonline.com – Scientific Models - Systems - My science coach - understanding systems - Models of systems</p>		

COURSE NUMBER: 2007020		COURSE NAME: M/J COMPREHENSIVE SCIENCE 2	
UNIT TITLE: <i>The Structure of Earth</i>		UNIT ESSENTIAL QUESTION:	
SEMESTER: 1	Grading Period: 2	<p>What is the Structure of Earth? How Do Scientists Study Earth's Past? How Do Moving Plates Change Earth's Crust? How Does a Volcano Erupt?</p>	
CONCEPT		CONCEPT	CONCEPT
Earth's Interior		Convection and the Mantle	Classifying Rocks
STANDARD(S)		STANDARD(S)	STANDARD(S)
SC.7.N.1.3, SC.7.N.3.2, SC.7.E.6.1, SC.LA.7.2.2.3, MA.6.A.3.6		SC.7.E.6.1, LA.7.2.2.3	SC.7.E.6.2, LA.7.2.2.3
LESSON ESSENTIAL QUESTION		LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
How Do Geologist Learn About Earth's Interior? What Are the Features of Earth's Crust, Mantle, and Core?		How Is Heat Transferred? How Does Convection Occur in Earth's Mantle?	How Do Geologists Classify Rocks?
VOCABULARY		VOCABULARY	VOCABULARY
Seismic wave, pressure, crust , basalt, outer core, inner core		Radiation, convection, conduction, density, convection current	Rock-forming mineral, grain, texture, igneous rock, sedimentary rock, metamorphic rock
RESOURCES			
Lab Zone Inquiry Warm-Up – Earth's Interior Quick Lab – How Do Scientists Find Out What's Inside Earth? –Build a Model of the Earth Image Library Assess Understanding – How do geologists learn about Earth's interior Key Concept Summary – How do geologists learn about Earth's interior Review and Reinforce – Understanding main ideas Enrich – Difference in arrival time		Lab Zone – Modeling Mantle Convection Current Inquiry Warm-Up – Tracing Heat Flow Quick Lab – How Can Heat cause Motion in a Liquid? Teacher Demo – Image Library Assess Understanding – How Is Heat Transferred? Key Concept Summary – How Is Heat Transferred? Review and Reinforce – Understanding Main Ideas Enrich – What's Happening During the Convection?	Lab Zone – Inquiry Warm-Up – How Do Rocks Compare? Quick Lab – Classify These Rocks Teacher Demo – Image Library Assess Understanding – How Do Geologists Classify Rocks? Key Concept Summary – How Do Geologists Classify Rocks? Review and Reinforce – Understanding Main Ideas Enrich – A Crust Full of Rocks

Additional Information

**Digital Lesson
Art in Motion**

MyScienceonline.com – Uncovering Earth’s Interior
- Earth’s Interior

**Digital Lesson
Art in Motion**

MyScienceonline.com – Heat Transfer
- Mantle Convection

**Digital Lesson
Art in Motion**

MyScienceonline.com – Classifying Rocks

CONCEPT	CONCEPT	CONCEPT
Igneous and Matamorphic Rocks	Sedimentary Rocks	The Rock Cycle
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.E.6.2, LA.7.2.2.3	SC.7.E.6.2, LA.7.2.2.3	SC.7.N.3.2, SC.7.E.6.2, LA.7.2.2.3
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
How Do Geologists Classify Igneous Rocks? What Are Metamorphic Rocks?	How Do Sedimentary Form? What Are the Three Major Types of Sedimentary Rocks? How Are Sedimentary Used?	What is the Rock Cycle?
VOCABULARY	VOCABULARY	VOCABULARY
Extrusive rock, intrusive rock, foliated	Sediment, weathering, erosion, deposition, compaction, cementation, clastic rock, organic rock, chemical rock	Rock cycle
RESOURCES		
Lab Zone – Inquiry Warm-Up – A Sequined Rock Quick Lab – How Do Igneous Rocks Form? - How Do Grain Patterns Compare? Teacher Demo – Image Library Assess Understanding – How Do Geologists Classify Igneous Rocks? Key Concept Summary – How Do Geologists Classify Igneous Rocks? Review and Reinforce – Understanding Main Ideas Enrich – The Same But Different	Lab Zone – Inquiry Warm-Up – Acid Test for Rocks Quick Lab – How Does Pressure Affect Particles of Rock? - What Causes Layers - Testing Rock Flooring Build Inquiry: Classifying Sedimentary Rocks? Teacher Demo – Image Library Assess Understanding – How Do Sedimentary Rocks Form? Key Concept Summary – – How Do Sedimentary Rocks Form? Review and Reinforce – Understanding Main Ideas Enrich – The Formation of Coal	Lab Zone – Inquiry Warm-Up – Recycling Rocks Quick Lab – Which Came First? Teacher Demo – Image Library Assess Understanding – What Is the Rock Cycle? Key Concept Summary – What is The Rock Cycle? Review and Reinforce – Understanding Main Ideas Enrich – Alternate Pathways
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Classifying Igneous Rocks - Metamorphic Rocks	Digital Lesson Art in Motion MyScienceonline.com – How Sedimentary Rock Forms -Types of Sedimentary Rocks	Digital Lesson Art in Motion MyScienceonline.com – The Rock Cycle - Patterns in Rock Cycle

CONCEPT	CONCEPT	CONCEPT
Fossils	The Relative Age of Rocks	Radioactive Dating
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.N.1.6, SC.7.E. 6.3, SC.7.E.6.4, LA.7.2.2.3	SC.7.N.3.1, SC.7.E.6.4	SC.7.N.2.1, SC.7.E.6.3, SC.7.E.6.4
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
What Are Fossils? What Are the Kinds of Fossils? What Do Fossils Show?	How Old Are Rock Layers? How Can Rock Layers Change?	What Radioactive Decay? What Radioactive Dating? How Do Scientists Determine Earth's Age?
VOCABULARY	VOCABULARY	VOCABULARY
Fossil, mold, cast, petrified fossil, carbon film, trace fossil, paleontologist, evolution, extinct	Relative age, absolute age, law of superposition, extrusion, intrusion, fault, index fossil, unconformity	Radioactive decay, half-life
RESOURCES		
Lab Zone – Inquiry Warm-Up – What's In a Rock? Quick Lab – Fossils - Sweet Fossils - Modeling Trace Fossils - Modeling the Fossil Record Teacher Demo – Image Library Assess Understanding – What Are Fossils? Key Concept Summary – What Are Fossils? Review and Reinforce – Understanding Main Ideas Enrich – Traces of Tracks	Lab Zone – Exploring Geologic Time Through Core Samples Inquiry Warm-Up – Which Layer Is the Oldest? Quick Lab – How Did It Form? Teacher Demo – Image Library Assess Understanding – How Old Are Rock Layers? Key Concept Summary – How Old Are Rock Layers? Review and Reinforce – Understanding Main Ideas Enrich – The Grandest Canyon of All	Lab Zone – Inquiry Warm-Up – How Long Till It's Gone? Quick Lab – The Dating Game - Earth Through Geologic Time - How Old Is It? Teacher Demo – Image Library Assess Understanding – What Is Radioactive Decay? Key Concept Summary – What Is Radioactive Decay? Review and Reinforce – Understanding Main Ideas Enrich – A Continuous Process
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Fossils - Fossil Types -Fossil Record	Digital Lesson Art in Motion MyScienceonline.com – Ages of Rocks - Changing Layers	Digital Lesson Art in Motion MyScienceonline.com – Radioactive Decay

CONCEPT	CONCEPT	CONCEPT
Drifting Continents	Sea Floor Spreading	The Theory of Plate Tectonics
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.N.1.3, SC.7.N.1.7, SC.7.E.6.4	SC.7.N.2.1, SC.7.E.6.4, SC.7.E.6.5, LA.7.2.2.3	SC.7.E.6.5, LA.7.2.2.3
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
What Was Wegener’s Hypothesis About the Continents?	What Are Mid-Ocean Ridges? What Is Sea-Floor Spreading? What Happens at Deep-Ocean Trenches?	What Is the Theory of Plate Tectonics?
VOCABULARY	VOCABULARY	VOCABULARY
Continental drift, Pangaea, fossil	Mid-ocean ridges, sea-floor spreading, deep-ocean trench, subduction	Plate, divergent boundary, convergent boundary, transform boundary, plate tectonics, fault
RESOURCES		
Lab Zone – Inquiry Warm-Up – How Are Earth’s Continents Linked? Build Inquiry – Make Models of Continents Quick Lab – Moving the Continents Teacher Demo – Image Library Assess Understanding – What Was Wegener’s Hypothesis About the Continents? Key Concept Summary – What Was Wegener’s Hypothesis About the Continents Review and Reinforce – Understanding Main Ideas Enrich – The Curious Case of Mesosaurus	Lab Zone – Modeling Sea-Floor Spreading Build Inquiry – Model of the Ocean Floor Inquiry Warm-Up – What Is the Effect of a Change in Density? Quick Lab – Mid-Ocean Ridges Teacher Demo – Image Library Assess Understanding – What Are Mid-Ocean Ridges? Key Concept Summary – What Are Mid-Ocean Ridges? Review and Reinforce – Understanding Main Ideas Enrich – The Birth of the Himalayas	Lab Zone – Build Inquiry – Continent-Continent Collisions Inquiry Warm-Up – Plate Interactions Quick Lab – Mantle Convection Currents Teacher Demo – Make a Model of Plates Image Library Assess Understanding – What Is the Theory of Plate Tectonics? Key Concept Summary – What Is the Theory of Plate Tectonics? Review and Reinforce – Understanding Main Ideas Enrich – Magnetic Reversals Through the Ages
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Continental Drift	Digital Lesson Art in Motion MyScienceonline.com – Mid-Ocean Ridges - Reversing Poles - Sea-Floor Spreading - Deep-Ocean Trenches	Digital Lesson Art in Motion MyScienceonline.com – Theory of Plate Tectonics - Movement of Plate Tectonics - Plate Tectonics

CONCEPT	CONCEPT	CONCEPT
Volcanoes and Plate Tectonics	Volcanic Eruptions	Volcanic Landforms
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.E.6.5, LA.7.4.2.2	SC.7.N.1.6, SC.7.E.6.5, LA.7.4.2.2	SC.7.E.6.5, LA.7.2.2.3
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
Where Are Volcanoes Found on Earth's Surface?	What Happens When a Volcano Erupts?	What Landforms Do Lava and Ash Create? What Landforms Does Magma Create
VOCABULARY	VOCABULARY	VOCABULARY
Volcano, magma, lava, Ring of Fire, island arc, hot spot	Magma chamber, pipe, vent, lava flow, crater, silica, pyroclastic flow, dormant, extinct	Caldera, cinder cone, composite volcano, shield volcano, volcanic neck, dike, sill, batholith
RESOURCES		
Lab Zone – Inquiry Warm-Up – Moving Volcanoes Quick Lab – Where Are Volcanoes Found on Earth's Surface? Teacher Demo – Interpreting Maps Image Library Assess Understanding – Where Are Volcanoes Found on Earth's Surface? Key Concept Summary – Where Are Volcanoes Found on Earth's Surface? Review and Reinforce – Understanding Main Ideas Enrich – Volcanoes and Plates	Lab Zone – Gelatin Volcanoes Inquiry Warm-Up – How Fast Do Liquids Flow? Quick Lab – Volcanoes Stages Teacher Demo – Explore Violent Eruptions Image Library Assess Understanding – What Happens When a Volcano Erupts? Key Concept Summary – What Happens When a Volcano Erupts? Review and Reinforce – Understanding Main Ideas Enrich – Pegmatite's	Lab Zone – Inquiry Warm-Up – How Do Volcanoes Change Land? Build Inquiry – Make a Model of Composite Volcanoes Quick Lab – Volcanic Landforms - How Can Volcanic Activity Change Earth's Surface? Teacher Demo – Image Library Assess Understanding – What Landforms Do Lava and Ash Create? Key Concept Summary – What Landforms Do Lava and Ash Create? Review and Reinforce – Understanding Main Ideas Enrich – Modeling a Lava Plateau
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Volcanoes and Plate Tectonics	Digital Lesson Art in Motion MyScienceonline.com – Inside a Volcano - Monitoring Volcanoes	Digital Lesson Art in Motion MyScienceonline.com – Volcanic Landforms - Landforms from Magma

CONCEPT	CONCEPT	CONCEPT
Forces in Earth's Crust	Earthquakes and Seismic Waves	
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.E.6.5, LA.7.4.2.2	SC.7.E.6.5, LA.7.2.2.3, MA.6.A.3.6	SC.7.E.6.5, SC.7.N.1.5, LA.7.4.2.2
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
How Does Stress Change Earth's Crust? How Do Fault Form? How Does Plate Movement Create New Landforms?	What Are Seismic Waves? How Are Earthquakes Measured? How Is an Epicenter Located?	How Do Seismographs Work? What Patterns Do Seismographic Data Reveal?
VOCABULARY	VOCABULARY	VOCABULARY
Stress, tension, compression, shearing, normal fault, reverse fault, strike-slip fault, plateau	Earthquake, focus, epicenter, P wave, S wave, surface wave, seismograph, Modified Mercalli scale, magnitude, Richter scale, moment magnitude scale	Seismograph
RESOURCES		
Lab Zone – Inquiry Warm-Up – How Does Stress Affect Earth's Crust? Quick Lab – Effect of Stress - Modeling Stress Teacher Demo – Image Library Assess Understanding – How Does Stress Change Earth's Crust Key Concept Summary – How Does Stress Change Earth's Crust Review and Reinforce – Understanding Main Ideas Enrich – Evidence of Movement Along Faults	Lab Zone – Inquiry Warm-Up – How Do Seismic Waves Travel Through Earth? Quick Lab – Properties of Seismic Waves - Measuring Earthquakes - Finding the Epicenter Teacher Demo – Image Library Assess Understanding – What Are Seismic Waves? Key Concept Summary – What Are Seismic Waves? Review and Reinforce – Understanding Main Ideas Enrich – Comparing the Richter and Moment Magnitude Scales	Lab Zone – Inquiry Warm-Up – How Can Seismic Waves Be Detected? Quick Lab – Design a Seismograph - Earthquake Patterns Teacher Demo – Image Library Assess Understanding – How Do Seismographs Work? Key Concept Summary – How Do Seismographs Work? Review and Reinforce – Understanding Main Ideas Enrich – Earthquakes Probability
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com - Stress - Faults - Plate Movement and Land	Digital Lesson Art in Motion MyScienceonline.com – Seismic Waves - Measuring Earthquakes - Epicenter	Digital Lesson Art in Motion MyScienceonline.com – Seismographs - Earthquake Risk

CONCEPT	CONCEPT	CONCEPT
Conserving Land and Soil	Air Pollution and Solutions	Water Pollution and Solution
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.E.6.6, LA.7.2.2.3	SC.7.E.6.6, LA.7.2.2.3	SC.7.E.6.6, LA.7.2.2.3
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
How Do People Use Land? What Are the Effect of Deforestation and Urbanization?	What Causes Damage to the Ozone Layer?	Why Is Fresh Water a Limited Resource? What Are the Major Sources of Water Pollution? How Can Water Pollution Be Reduced?
VOCABULARY	VOCABULARY	VOCABULARY
Natural resource, litter, topsoil, subsoil, bedrock, erosion, nutrient depletion, fertilizer, desertification, drought, land reclamation, deforestation, urbanization	Ozone layer, chlorofluorocarbons, acid rain	Pesticide, sewage, sediment
RESOURCES		
Lab Zone – Inquiry Warm-Up – How Does Mining Affect the Land? Quick Lab – Land Use - Modeling Soil Conservation - Natural Resources Teacher Demo – Observe Soil Layers Image Library Assess Understanding – How Do People Use Land? Key Concept Summary – How Do People Use Land? Review and Reinforce – Understanding Main Ideas Enrich – The Copper Basin	Lab Zone – Model the Effects of CFCs on Ozone Inquiry Warm-Up – Analyzing Ozone Quick Lab – It’s In the Air Teacher Demo – Image Library Assess Understanding – What Causes Outdoor and Indoor Air Pollution? Key Concept Summary – What Causes Outdoor and Indoor Air Pollution? Review and Reinforce – Understanding Main Ideas Enrich – Ozone	Lab Zone – Inquiry Warm-Up – How Does the Water Change? Quick Lab – Where’s the Water? - Cleaning Up Oil Spills Teacher Demo – Image Library Assess Understanding – Why Is Fresh Water a Limited Resource? Key Concept Summary – Why Is Fresh Water a Limited Resource? Review and Reinforce – Understanding Main Ideas Enrich – Sewage Treatment
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Land Use - Soil Management - Deforestation and Urbanization	Digital Lesson Art in Motion MyScienceonline.com - Ozone - Air Pollution Solution	Digital Lesson Art in Motion MyScienceonline.com – Limited Water - Water Pollution Solutions

CONCEPT	CONCEPT	CONCEPT
Wetland Environments	Heat Flow Inside Earth	
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.E.6.6, LA.7.4.2.2	SC.7.N.1.5, SC.7.E.6.7	
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
What Are Wetlands? Why Are Wetlands Important? What Impact Have Humans Had on the Everglades?	How Do Mantle Convection Currents Affect Earth?	
VOCABULARY	VOCABULARY	VOCABULARY
Wetland	Convection, convection current	
RESOURCES		
Lab Zone – Inquiry Warm-Up – Wet or Dry Quick Lab – Describing Wetlands - A Natural Filter - Wetland Environments Teacher Demo – Modeling Plant Roots in a Wetland Image Library Assess Understanding – What Are Wetlands? Key Concept Summary – What Are Wetlands? Review and Reinforce – Understanding Main Ideas Enrich – The Shrinking Everglades	Lab Zone – Inquiry Warm-Up – Heating Things Up Quick Lab – Where Does Heat Flow? Teacher Demo – Image Library Assess Understanding – How Do Mantle Convection Currents Affect Earth? Key Concept Summary – How Do Mantle Convection Currents Affect Earth? Review and Reinforce – Understanding Main Ideas Enrich – The Properties of Magma	
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com - Wetlands - Importance of Wetlands	Digital Lesson Art in Motion MyScienceonline.com – Heat Flow in Earth	

COURSE CODE: 2007020		COURSE NAME: PHYSICAL SCIENCE	
UNIT TITLE: <i>Physical Science</i>		UNIT ESSENTIAL QUESTION:	
SEMESTER: 2	Grading Period: 3	<p>How Does Light Interact With Matter? How Is Energy Conserved in a Transformation?</p>	
CONCEPT		CONCEPT	
Waves of the Electromagnetic Spectrum		Reflection and Mirrors	Refraction and Lenses
STANDARD(S)		STANDARD(S)	
SC.7.P.10.1, SC.7.N.1.3, SC.7.N.1.5, LA.7.2.2.3		SC.7.P.10.2, LA.7.2.2.3	SC.7.N.1.6, SC.7.N.1.7, SC.7.P.10.2, MA.6.A.3.6, SC.7.P.10.3
LESSON ESSENTIAL QUESTION		LESSON ESSENTIAL QUESTION	
How Does the Sun's Energy Arrive on Earth How Do Electromagnetic Waves Compare? What Makes Up the Electromagnetic Spectrum?		What Are the Kinds of Reflection? What Types of Images Do Mirrors Produce?	What Happens When Light Hits an Objects? What Determines the Types of Image Formed by a Len? What Factors Affect the Speed of a Wave?
VOCABULARY		VOCABULARY	
Electromagnetic wave, electromagnetic radiation, wavelength, frequency, electromagnetic spectrum, radio waves, microwaves, infrared rays, visible light, ultraviolet rays, X-ray, gamma ray		Ray, regular, reflection, image, diffuse reflection, plane mirror, virtual image, concave mirror, optical axis, focal point, real image, convex mirror	Index of refraction, mirage, lens, concave lens, convex lens

RESOURCES

<p>Lab Zone – Observe Infrared - Model X-Ray and Other Electromagnetic Waves</p> <p>Inquiry Warm-Up – How Fast Are Electromagnetic Waves?</p> <p>Quick Lab – What Is an Electromagnetic Wave Made Of? - Differences Between Waves - Parts of the Electromagnetic Spectrum</p> <p>Teacher Demo –</p> <p>Image Library</p> <p>Assess Understanding – How Does the Sun’s Energy Arrive on Earth?</p> <p>Key Concept Summary – How Does the Sun’s Energy Arrive on Earth?</p> <p>Review and Reinforce – Understanding Main Ideas</p> <p>Enrich – Motion Detectors</p>	<p>Lab Zone – Find the Focal Point</p> <p>Inquiry Warm-Up – How Does Your Reflection Wink?</p> <p>Quick Lab – Observing - Mirror Images</p> <p>Teacher Demo – Model Reflection From a Concave Mirror</p> <p>Image Library</p> <p>Assess Understanding – What Are the Kinds of Reflection?</p> <p>Key Concept Summary – What Are the Kinds of Reflection?</p> <p>Review and Reinforce – Understanding Main Ideas</p> <p>Enrich – Ear on the Sky</p>	<p>Lab Zone – Observing Refraction of Light</p> <p>Inquiry Warm-Up – Can You Make an Image Appear?</p> <p>Quick Lab – Bent Pencil - Looking at Images</p> <p>Teacher Demo – See the Penny - Focal Point</p> <p>Image Library</p> <p>Assess Understanding – What Happens When Light Hits an Object?</p> <p>Key Concept Summary – What Happens When Light Hits an Object?</p> <p>Review and Reinforce – Understanding Main Ideas</p> <p>Enrich – Light Benders</p>
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Additional Information

<p>Digital Lesson Art in Motion MyScienceonline.com – Comparing EM Waves</p>	<p>Digital Lesson Art in Motion MyScienceonline.com – Reflection - Mirrors</p>	<p>Digital Lesson Art in Motion MyScienceonline.com – Refraction - Lenses - Wave Speed</p>
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CONCEPT	CONCEPT	CONCEPT
Energy Transformations and Conservation	Temperature, Thermal Energy, and Heat	The Transfer of Heat
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.N.3.2, SC.7.P.11.1, SC.7.P.11.2, SC.7.N.3.1, SC.7.P.11.3, LA.7.2.2.3	SC.7.P.11.4, MA.7.6.S.6.2, LA.6.A.3.2	SC.7.P.11.4, LA.7.2.2.3
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
How Does Heat Affect a System? What Forms of Energy Are Related to Particles? How Is Energy Conserved During a Transformation?	What Determines the Temperature of an Object? How Is Thermal Energy Different from Temperature?	How Is Heat Transferred?
VOCABULARY	VOCABULARY	VOCABULARY
Energy, state, solid, liquid, gas, freezing point, boil, boiling point, potential energy, kinetic energy, energy transformation, law of conservation of energy	Temperature, Fahrenheit scale, Celsius scale, Kelvin scale, absolute zero, heat	Convection, Convection Current, radiation, conduction
RESOURCES		
Lab Zone – Inquiry Warm-Up – What Would Make a Card Jump? Quick Lab – State of Matter - Sources of Energy - Pendulum Swing Teacher Demo – Image Library Assess Understanding – How Does Heat Affect a System? Key Concept Summary – How Does Heat Affect a System? Review and Reinforce – Understanding Main Ideas Enrich – Orbits, Ellipses, and Energy	Lab Zone – Build Your Own Thermometer Inquiry Warm-Up – How Cold Is the Water? Quick Lab – Temperature and Thermal Energy Teacher Demo – Image Library Assess Understanding – What Determine the Temperature of an Object? Key Concept Summary – What Determine the Temperature of an Object? Review and Reinforce – Understanding Main Ideas Enrich – Converting Temperatures	Lab Zone – Inquiry Warm-Up – What Does It Mean to Heat Up? Quick Lab – Visualizing Convection Currents Teacher Demo – Image Library Assess Understanding – How Is Heat Transferred? Key Concept Summary – How Is Heat Transferred? Review and Reinforce – Understanding Main Ideas Enrich – Radiating Heat
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Energy Transformations - Forms of Energy - Energy Conservation	Digital Lesson Art in Motion MyScienceonline.com – Temperature Scales - Thermal Energy	Digital Lesson Art in Motion MyScienceonline.com – The Transfer of Heat

COURSE CODE: 2007020		COURSE NAME: LIFE SCIENCE	
UNIT TITLE: <i>Life Science</i>		UNIT ESSENTIAL QUESTION:	
SEMESTER: 2	Grading Period: 4	<p>How Do Life Forms Change Over Time? Why Don't Offspring Always Look Like Their Parents? How Can Genetic Information Be Used? How Do Living Things Affect One Another?</p>	
CONCEPT		CONCEPT	
Evidence of Evolution		Darwin's Theory	Biodiversity and Extinction
STANDARD(S)		STANDARD(S)	
SC.7.L.15.1, LA.7.4.2.2, SC.7.N.1.7		SC.7.N.3.1, SC.7.L.15.2, LA.7.4.2.2, LA.7.2.2.5, MA.6.S.6.2	SC.7.L.15.2, LA.7.2.2.3, SC.7.L.15.3
LESSON ESSENTIAL QUESTION		LESSON ESSENTIAL QUESTION	
What Is Evolution What Evidence Support Evolution		What Was Darwin's Hypothesis? What Is Natural Selection?	How Do New Species Form? What Factors Affect Biodiversity Why Do Species Go Extinct?
VOCABULARY		VOCABULARY	
Evolution, gene, homologous structures		Adaptation, scientific theory, trait, natural selection, variation	Biodiversity, extinction, endangered species, threatened species

RESOURCES

<p>Lab Zone – Observe Similar Species Inquiry Warm-Up –How Can You Classify a Species? Quick Lab – Understanding Evolution - Finding Proof Teacher Demo – Image Library Assess Understanding – What is Evolution Key Concept Summary – What is Evolution Review and Reinforce – Understanding Main Ideas Enrich – Dating the Fossil Record</p>	<p>Lab Zone – Interpret Scientific Drawings - Observe Favorable Traits - Nature At Work Inquiry Warm-Up – How Do Living Things Vary? Quick Lab – Bird Beak Adaptations Teacher Demo – Image Library Assess Understanding – What Was Darwin’s Hypothesis? Key Concept Summary – What Was Darwin’s Hypothesis? Review and Reinforce – Understanding Main Ideas Enrich – Two Theories of Evolution</p>	<p>Lab Zone – Inquiry Warm-Up – How Much Variety Is There? Quick Lab –Large-scale isolation - Grocery Gene Pool - Disappearing Act Teacher Demo – Image Library Assess Understanding – What Is Evolution? Key Concept Summary –What Is Evolution? Review and Reinforce – Understanding Main Ideas Enrich –Dating the Fossil Record</p>
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Additional Information

<p>Digital Lesson Art in Motion MyScienceonline.com - Evolution</p>	<p>Digital Lesson Art in Motion MyScienceonline.com – Darwin’s Hypothesis - Natural Selection</p>	<p>Digital Lesson Art in Motion MyScienceonline.com – Species Formation - Factors Affecting Biodiversity</p>
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CONCEPT	CONCEPT	CONCEPT
The Genetic Code	What Is Heredity?	Probability and Heredity
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.L.16.1, LA.7.2.2.3	SC.7.L.16.1, SC.7.N.2.1, LA.7.2.2.3	SC.7.L.16.2, MA.6.A.3.6
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
What Forms the Genetic Code? How Does DNA Cope Itself?	What Did Mendel Observe? How Do Alleles Affect Inheritance?	How Is Probability Related to Inheritance? What Are Phenotype and Genotype?
VOCABULARY	VOCABULARY	VOCABULARY
Nitrogen bases, DNA replication	Heredity, genetics, fertilization, purebred, allele, dominant allele, recessive allele, hybrid	Probability, Punnett square, pedigree, phenotype, genotype, homozygous, heterozygous
RESOURCES		
Lab Zone – Guilty or Innocent? Inquiry Warm-Up – Can You Crack the Code? Quick Lab – Modeling the Genetic Code Teacher Demo – Unique Sequences - Modeling DNA Replication Image Library Assess Understanding – Key Concept Summary – Review and Reinforce – Understanding Main Ideas Enrich – Paving the Way for Watson and Crick	Lab Zone – Observing Crosses In Fruit Flies Inquiry Warm-Up – What Does the Father Look Like? Quick Lab – Observing Pistils and Stamens - Inferring the Parent Generation Teacher Demo – Image Library Assess Understanding – What Did Mendel Observe? Key Concept Summary – What Did Mendel Observe? Review and Reinforce – Understanding Main Ideas Enrich – The Test Cross	Lab Zone – Inquiry Warm-Up – What Is the Chance? Quick Lab – Coin Crosses - Make the Right Call Teacher Demo – Observe Crosses in Tobacco Plants Image Library Assess Understanding –How Is Probability Related to Inheritance? Key Concept Summary – How Is Probability Related to Inheritance? Review and Reinforce – Understanding Main Ideas Enrich – Genetic Crosses With Two Traits
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Genetic Code - DNA Replication	Digital Lesson Art in Motion MyScienceonline.com – Mendel’s Observations - Alleles and Inheritance	Digital Lesson Art in Motion MyScienceonline.com – Probability and Inheritance - Phenotype and Genotype

CONCEPT	CONCEPT	CONCEPT
Chromosomes and Inheritance	Human Inheritance	Human Genetic Disorders
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.L.16.1, SC.7.N.1.5, SC.7.N.1.6, SC.7.L.16.3, LA.7.2.2.3	SC.7.L.6.1, SC.7.L.2, SC.7.L.16.3	SC.7.L.16.2, LA.7.4.2.2, HE.6.C.1.4
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
How Are Chromosomes, Genes, and Inheritance Related? What Happens During Meiosis? How Do Sexual and Asexual Reproduction Compare?	What Some Patterns of Human Inheritance? What Are the Functions of the Sex Chromosomes?	How Are Genetic Disorders Inherited In Human? How Are Genetic Disorders Traced, Diagnosed, and Treated?
VOCABULARY	VOCABULARY	VOCABULARY
Meiosis	Sex chromosomes, sex-linked gene, carrier	Genetic disorder, pedigree, karyotype
RESOURCES		
Lab Zone – Inquiry Warm-Up – Which Chromosome Is Which? Quick Lab – Chromosomes and Inheritance - Modeling Meiosis - Types of Reproduction Teacher Demo – Image Library Assess Understanding – How Are Chromosomes, Genes, and Inheritance Related? Key Concept Summary – How Are Chromosomes, Genes, and Inheritance Related? Review and Reinforce – Understanding Main Ideas Enrich – A Model of Meiosis	Lab Zone – How Are Genes on the Sex Chromosomes inherited? Inquiry Warm-Up – How Tall Is Tall? Quick Lab – The Eyes Have It Teacher Demo – Image Library Assess Understanding – What Are Some Patterns of Human Inheritance? Key Concept Summary – What Are Some Patterns of Human Inheritance? Review and Reinforce – Understanding Main Ideas Enrich – Sex-Linked Genes	Lab Zone – Inquiry Warm-Up – How Many Chromosomes? Quick Lab – What Went Wrong? - Family Puzzle Teacher Demo – Image Library Assess Understanding – How Are Genetic Disorders Inherited in Human Key Concept Summary – How Are Genetic Disorders Inherited in Human Review and Reinforce – Understanding Main Ideas Enrich – Sickle-Cell Allele and Malaria
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Chromosomes Inheritance - Meiosis	Digital Lesson Art in Motion MyScienceonline.com – Human Inheritance Patterns - Sex Chromosomes	Digital Lesson Art in Motion MyScienceonline.com – Inherited Genetic Disorders - Studying Genetic Disorders

CONCEPT	CONCEPT	CONCEPT
Advances in Genetics	Using Genetic Information	Living Things and the Environment
STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.L.16.4, MA.6.A.3.6	SC.7.N.2.1, SC.7.L.16.4, LA.7.2.2.3	SC.7.L.17.1, SC.7.L.17.2, SC.7.L.17.3, LA.7.4.2.2
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
How Can Organisms Be Produced With Desired Traits? What Is the Impact of Biotechnology?	What Some Uses of Genetic Information	What Does an Organism Get From Its Environment? What Are the Two Parts of an Organism’s Habitat? How Is an Ecosystem Organized?
VOCABULARY	VOCABULARY	VOCABULARY
Clone, genetic engineering, gene therapy, selective breeding, hybridization, inbreeding, biotechnology	Genome, ethics	Organism, habitat, biotic factor, species, population, community, ecosystem, ecology
RESOURCES		
Lab Zone – Apply Concepts of Hybridization Inquiry Warm-Up – What Do Fingerprints Reveal? Quick Lab – Selective Breeding - Impact of Biotechnology Teacher Demo – Image Library Assess Understanding – How Can Organisms Be Produced With Desired Traits? Key Concept Summary – How Can Organisms Be Produced With Desired Traits? Review and Reinforce – Understanding Main Ideas Enrich – A Closer Look at Gene Therapy for Cystic Fibrosis	Lab Zone – Inquiry Warm-Up – Using Genetic Information Quick Lab – Extraction in Action Teacher Demo – Image Library Assess Understanding – What Are Some User of Genetic Information Key Concept Summary –What Are Some User of Genetic Information Review and Reinforce – Understanding Main Ideas Enrich – The Genographic Project	Lab Zone – World in a Bottle Inquiry Warm-Up – What in the Scene? Quick Lab – Organisms and Their Habitats - Organizing an Ecosystem Teacher Demo – Observing Soil Components Image Library Assess Understanding – What Does an Organism Get From Its Environment Key Concept Summary – What Does an Organism Get From Its Environment Review and Reinforce – Understanding Main Ideas Enrich – Biotic Factors in the Ecosystem
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Advances in Genetics	Digital Lesson Art in Motion MyScienceonline.com – Using Genetic Information	Digital Lesson Art in Motion MyScienceonline.com - Habitat - Biotic and Abiotic Factors
CONCEPT	CONCEPT	CONCEPT
Energy Flow in Ecosystems	Interactions Among Living Things	Populations

STANDARD(S)	STANDARD(S)	STANDARD(S)
SC.7.N.3.2, SC.7.L.17.1, LA.7.4.2.2.3	SC.7.L.17.2, MA.7.A.3.6, LA.7.2.2.3	SC.7.L.17.3, LA.7.2.2.3
LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION	LESSON ESSENTIAL QUESTION
What Are the Energy Roles in an Ecosystem? How Does Energy Move Through an Ecosystem?	How Do Adaptations Help an Organism Survive? What Are Competition and Predation? What Are the Three Types of Symbiosis?	How Do Populations Change in Size? What Factors Limit Population Growth?
VOCABULARY	VOCABULARY	VOCABULARY
Producer, consumer, herbivore, carnivore, omnivore, scavenger, decomposer, food chain, food web, energy pyramid	Natural selection, adaptation, niche, competition, predation, predator, prey, symbiosis, mutualism, commensalism, parasitism, parasite, host	Birth rate, death rate, immigration, emigration, population density, limiting factor, carrying capacity
RESOURCES		
Lab Zone – Identify Available Energy - Ecosystem Food Chains Inquiry Warm-Up – Where Did Your Dinner Come From? Quick Lab – Observing Decomposition Teacher Demo – Image Library Assess Understanding – What Are the Energy Roles in Ecosystems? Key Concept Summary – What Are the Energy Roles in Ecosystems? Review and Reinforce – Understanding Main Ideas Enrich – Food Webs in the Ocean	Lab Zone – Inquiry Warm-Up – Can you hide a butterfly? Quick Lab – Adaptations for Survival - Types of Symbiosis Teacher Demo – Image Library Assess Understanding – How Does Adaptations Help an Organism Survive Key Concept Summary – How Does Adaptations Help an Organism Survive Review and Reinforce – Understanding Main Ideas Enrich – Analyzing Interactions Among Organisms	Lab Zone – Calculating Growth Rate - Growing and Shrinking Inquiry Warm-Up – Populations Quick Lab – Elbow Room Teacher Demo – Image Library Assess Understanding – How Do Populations Change In Size? Key Concept Summary – How Do Populations Change In Size? Review and Reinforce – Understanding Main Ideas Enrich – Population Growth
Additional Information		
Digital Lesson Art in Motion MyScienceonline.com – Energy Roles in Ecosystems	Digital Lesson Art in Motion MyScienceonline.com – Adaptation and Niche - Competition and Predation	Digital Lesson Art in Motion MyScienceonline.com – Population Size - Limiting Factors