

Argenta-Oreana Middle School
7th Earth Science

Textbook: Science Insights Exploring Earth and Space
Scott Foresman – Addison Wesley; 1999

Date Semester	IL Learning Standards	Unit and/or Essential Question Content and/or Skills	Assessments and/or Products
August	13.A.3c 11.A.3c 11.A.3e,f 12.F.3a,b 11.A.3e,f 11.A.3e 11.A.3a-g 11.A.3a-g 13.B.3c	<p>Ch.1 <u>Studying Science</u> Content:</p> <ul style="list-style-type: none"> • Laboratory safety, equipment and procedures • The meaning of science • Review the steps in the scientific method • The components of a controlled experiment • Measuring quantities using standard scientific units <p>Skills:</p> <ul style="list-style-type: none"> • Define terms • Demonstrate the ability to measure standard quantities in scientific units. • Interpret data from graphs and charts. • Create charts from data tables • Change number to and from exponential and scientific notation • Identify measurements best represented in scientific notation. • Use of computer network; the Internet • Creating saving and manipulating text, spreadsheet and graphs on computer 	<p>Students will: Create Outlines or Concept maps of the branches of science and the scientific method. Lab Activities- performance based objectives (rubric) Quizzes and Test –written and multiple choice objective assessments (recall, comprehension, and application)</p> <p><u>Measurement Activity</u>-work in cooperative groups to measure the angle, mass, length, weight, volume, temperature and density.</p> <p><u>Day length Project</u>- Students prepare line graphs using computer technology.</p> <p><u>Science Fair Project</u>-Students will begin the process of creating an experimental based on the steps in the scientific method</p> <p>Submit, focus and revise a topic statement. and write a hypothesis</p>
September	11.A.3c	<p>Ch.1 <u>Studying Science</u> Content:</p> <ul style="list-style-type: none"> • Interpret graphs or to create graphs from data • Understand how scientific notation is used when working w/ very large or small numbers. • Design and present a controlled experiment using the steps in the scientific method • Describe the branches of the sciences that are a part of Earth Science 	<p>Students will: Label landforms on a map cooperative groups and (independent practice).</p> <p>Concept map of map projection types.</p>

**Argenta-Oreana Middle School
7th Earth Science**

**Textbook: Science Insights Exploring Earth and Space
Scott Foresman – Addison Wesley; 1999**

Date Semester	IL Learning Standards	Unit and/or Essential Question Content and/or Skills	Assessments and/or Products
	12.B.3a,b 11.A.3c 11.A.3a 17.A.ab	Ch. 2 <u>Mapping the Earth</u> Ch. 3 <u>Structure of the Earth</u> Content: <ul style="list-style-type: none"> • The components of Earth topography and geography • Biomes determine the distribution of living things on Earth • Projections of Earth are used to create maps. • Contours are use to indicate shape and elevation on topographic maps • Describe the layers that make up Earth's interior structure Skills: <ul style="list-style-type: none"> • Apply methods and concepts from scientific method • Write and rewrite an experimental procedure • Associate various branches of science with work activities people do. • Identify areas studied by major branches of Earth Science • Describe Earth's major landforms • Identify the characteristics of the 6 major biomes • Identify type of map projection. • Describe distortion present for each type of projection. • Identify symbols used on topographic maps. • Identify patterns presented by contour lines • Describe and compare the chemical makeup of the layers • Describe and compare the physical characteristic of earth's layers 	<u>Landforms and Projections Quiz</u> written objective assessment (recall, comprehension, and application) Topographic map lab investigation <u>Topography/Geography Test</u> - written objective assessment (recall, comprehension, and application) Contour map –lab demonstration exercise
October	12.C.3a b	Ch. 8 <u>Earth Chemistry</u> Content: <ul style="list-style-type: none"> • The basic structure and properties of matter • Know the difference between elements, compounds, and mixtures • Describe substances formed by bonding between atoms Skills: <ul style="list-style-type: none"> • Define atom, ion, isotope • Identify characteristics of sub-atomic particles • Describe structure of atoms, ions, and isotopes • Identify definitions of elements, compounds, and mixtures. • Describe the structure of these chemical groups and their bonding 	Students will: <u>Models the atom of the atom</u> PowerPoint Presentation <u>Atoms, Ions, and Isotopes</u> Written Quiz objective assessment (recall, comprehension, and application). Elements quizzes (recall) Wanted Poster w/ description and examples of particles or groups

Argenta-Oreana Middle School
7th Earth Science

Textbook: Science Insights Exploring Earth and Space
Scott Foresman – Addison Wesley; 1999

Date Semester	IL Learning Standards	Unit and/or Essential Question Content and/or Skills	Assessments and/or Products
			(elem., Compound, ionic solid, covalent ...et. al. <u>Earth Chemistry Test</u> - written objective assessment (recall, comprehension, and application.)
November	12.E.3a,b 13.B.3d e 17.B.3a	Ch. 9 <u>Minerals</u> Content: <ul style="list-style-type: none"> • Learn How minerals are formed • Characteristics of minerals • Minerals identification through physical properties • Examine energy consumption, waste production and recycling Skills: <ul style="list-style-type: none"> • Know the four common characteristics of all minerals. • Identify the characteristics of the major crystal systems. • Know the physical and chemical properties of a mineral • Describe the major physical and chemical test used to identify minerals. • Visually identify common mineral samples. • Identify minerals based on physical and or chemical properties • Analyze the implications and results of energy conservation and recycling in a model community. 	Students will: <u>Mineral Diary</u> project Independent practices Mineral Characteristics Quiz Objective assessment (recall, comprehension.) Lab exercises mineral identification <u>Practical Exam Mineral Characteristics</u> Review and Practice Exercises <u>Minerals Test</u> -written objective assessment (recall, comprehension, and application.)
December	12.E.3a,b 12.E.3a,b 12.E.3a,b 12.E.3a,b	Ch. 10 <u>Rocks and the Rock Cycle</u> Content: <ul style="list-style-type: none"> • Learn how rock is different from minerals. • Learn how rocks a classified into three families • Learn how rocks are formed and changed over geologic time • Identify common rock types • Know how the rock families differ from each other in composition and formation • Demonstrate the ability to assess the reliability of a source of information 	Students will: Complete concept map of reading passage <u>The Rock Families Quiz</u> , written objective assessment Lab exercise- <u>Rock Identification</u> Independent practice <u>Rocks Test</u> - written objective assessment (recall,

Argenta-Oreana Middle School
7th Earth Science

Textbook: Science Insights Exploring Earth and Space
Scott Foresman – Addison Wesley; 1999

Date Semester	IL Learning Standards	Unit and/or Essential Question Content and/or Skills	Assessments and/or Products
	12.E.3a,b	Skills: <ul style="list-style-type: none"> • Differentiate between rock and mineral • Describe the characteristics of each of the three rock families • Make a model of the rock cycle • Visually identify common types of rock. • Be able to identify characteristics that make a source more likely to be valid. 	comprehension, and application, and identification). <u>I read it in the Weekly Midnight Tattler</u> Exercise (short essay) (cross-curricular literature project)
January	12.F.3ab 12.C.3a 12.F.3b 12.E.3a 11.B.3a-f 12.D.3ab	Science Fair Preparation; Ch. 23 ,24,25 <u>Earth and Moon and Planets</u> Content: <ul style="list-style-type: none"> • Describe earth’s revolution and rotation • Describe the atmosphere and geology of the earth and its moon • Time zones • Describe theories on the Origin of the moon • The phases of the moon • Describe the moon’s surface • Describe the Sun and how it functions • Create project applying steps in the scientific method Skills: <ul style="list-style-type: none"> • Describe the motion of the earth in space. • Predict the consequences of changing these parameters. • Explain why Earth’s tilt causes seasons. • Know the dates for Equinox and solstice. • Evaluate theories on moon’s origin • Explain why the Moon goes through phases. • Identify and sequence the phases of the moon • Identify surface features on the moon. • Describe environmental factors and events that effect the moon’s surface • Write formal research report • Create a controlled experiment • Explain how the sun gives off so much energy. 	Students will: <u>What if-</u> exercise (effects of changes in the orbital parameters) <u>If Hallmark Made a Card</u> Exercise (Happy Vernal Equinox) et. al. uses <u>Day length</u> Exc. <u>Phases of the Moon</u> diagram Moon Phase Quizzes- written objective assessment (identification and sequencing) Nuclear Fusion – concept mapping exercise and diagram Diagram of the solar layers Concept map exercise-written Exam-written objective assessment

Argenta-Oreana Middle School
7th Earth Science

Textbook: Science Insights Exploring Earth and Space
Scott Foresman – Addison Wesley; 1999

Date Semester	IL Learning Standards	Unit and/or Essential Question Content and/or Skills	Assessments and/or Products
		<ul style="list-style-type: none"> • Describe solar layers • Explain how the Sun effects the earth • Understand how Kepler's laws explain the motion of the planets • Analyze and compare characteristics of the planets of our Solar System 	
February	17.B.3a 12.E.3a b	Science Fair Preparation; Ch. 14-16 <u>Water on the Earth</u> Content: <ul style="list-style-type: none"> • Fresh salt and brackish water • Surface and Ground water • Ocean currents • Waves • Tides Skills: <ul style="list-style-type: none"> • Differentiate between Fresh, salt, and brackish water • Prepare a display for Science Fair project • Prepare an oral presentation on science fair project • Identify aquifer and surface watersheds • Identify features and age of a river system • Understand the causes of ocean currents • Understand the causes and timing of tides 	Students will: Project, Research Report and Display Science Fair Project-exhibition <u>Test</u> -written objective assessment (recall, comprehension, and application.) Internet search <u>Tides Tables Analysis</u>
March	13.A.3b 12.E.3a,b 12.E.3a 13.A.3b 13.B.3b	Ch. 5, 7 <u>Plate Tectonics Earthquakes and Volcanoes</u> Content: <ul style="list-style-type: none"> • Continental Drift • Harry Hess and Sea-floor Spreading • Plate Tectonics • From where do scientists come? • Describe what happens during an earthquake • Earthquakes produce shock waves called Seismic wave • Magnitude scale • Describe epicenter location by triangulation • Volcanic structure Skills:	Students will: <u>Pangaea jigsaw puzzle</u> - map exercise Diagram <u>Plate Boundaries</u> -map exercise (Wegener's Theory) exercise <u>Plate Tectonics Quiz</u> - written objective assessment (recall, comprehension, and application) Internet search: <u>Do we ever have earthquakes in Illinois?</u>

Argenta-Oreana Middle School
7th Earth Science

Textbook: Science Insights Exploring Earth and Space
Scott Foresman – Addison Wesley; 1999

Date Semester	IL Learning Standards	Unit and/or Essential Question Content and/or Skills	Assessments and/or Products
		<ul style="list-style-type: none"> • Describe the Theory of continental drift • Explain the evidence supporting continental drift. • Suggest reasons as to why Wegener’s theory was not accepted in the early 20th century • Describe Sea-floor spreading • Explain how sea-floor spreading supports the continental drift theory. • Describe the relationship of Plate Tectonics to Continental drift, and Sea-floor Spreading. • Identify the three basic types of boundaries. • Describe the interaction of plates at the three types of convergent boundaries. • Describe scientists as a racially and culturally diverse group • Explain the difference between the focus end the epicenter of an earthquake. • Identify locations where earthquakes occur most frequently. Formulate a hypothesis based on your observation. • Compare and contrast the three types of earthquake waves • Triangulation using seismic waves • Compare the Richter and Mercalli magnitude scales • Describe how volcanoes form • Explain why volcanoes erupt. • Compare the three main types of volcanoes • Describe the Structure of a volcano 	<p>Ring of fire Diagram-in class activity</p> <p>ISAT Testing Earthquakes Quiz- written objective assessment (recall, comprehension, and application)</p> <p>Triangulation exercise-in class activity</p> <p><u>Volcanoes and the Ring of fire</u>-independent practice</p> <p>Concept map <u>Three types of Volcanoes</u></p> <p>Volcanoes Quiz - written objective assessment (recall, comprehension, and application)</p> <p>Review Exercise-short answer and performance task <u>Earthquakes and volcanoes</u> Test-written objective assessment (recall, comprehension, and application)</p>
April	12.E.3a,b 11.A.3e 12.E.3a,b	<p>Ch. 17,18, 19 <u>Meteorology</u></p> <p>Content:</p> <ul style="list-style-type: none"> • The layers of the atmosphere (Ch. 17) • Explain relative humidity. • Explain Dew and frost. • Interpret a relative humidity table. • Explain how clouds form. • Humidity; Relative Humidity • The formation of clouds 	<p>Students will:</p> <p><u>Dew Point</u> Lab. Exercise</p> <p><u>Relative Humidity</u> concept mapping exercise</p> <p><u>Cloud nomenclature</u> Concept map</p> <p>Test- written objective assessment (recall, comprehension, and application)</p>

Argenta-Oreana Middle School
7th Earth Science

Textbook: Science Insights Exploring Earth and Space
Scott Foresman – Addison Wesley; 1999

Date Semester	IL Learning Standards	Unit and/or Essential Question Content and/or Skills	Assessments and/or Products
		<ul style="list-style-type: none"> • Forms of Precipitation • Fronts • Violent Storms Skills: <ul style="list-style-type: none"> • Identify clouds that are associated with certain weather patterns. • Describe the naming system for clouds. • Describe the formation of the different types of precipitation. • Identify the symbols for frontal boundaries. • Describe the conditions across these boundaries. 	application)
May	12.E.3a, b c 13.B.3e	Ch. 21, 22 <u>Mineral and Energy resources</u> <u>Humans and the Environment</u> Content: <ul style="list-style-type: none"> • Mineral and fossil fuel resources • Supply and Demand • Alternative energy sources • Human impact on the Environment Skills: <ul style="list-style-type: none"> • Distinguish materials as either renewable or non renewable • Identify alternative resources • Understand the role of recycling materials 	Students will: Test- written objective assessment (recall, comprehension, and application) Formal Outline of Chapter 21 Position paper on select issue