

VECC Grade 6 Science Curriculum 2008

Introduction to Earth Science (Glencoe, 2008)

Suggested Time Line How much time will be spent on this learning	Essential Questions and Content What will be taught?	NJCCC Standards What state standards will be met by these objectives?	Instructional Objectives What will the students know or be able to do as a result of this instruction?	Assessment What evidence will I collect that demonstrate that the students have achieved the objective?	Instructional Domain How will the learning be structured?	Instructional Activities What will the students do to achieve the objective?
<u>Unit 1...</u> <u>5 Chapters</u> <u>Earth Materials</u> (7 weeks)		5.1.8A-1,2,3,4 5.1.8B-1,2,3 5.1.8C-1,2 5.2.8A-1,2,3 5.2.8B-1,2 5.4.6A,B,C 5.6.6A-1,2,3,4 5.6.6B 5.6.8A-1,2,3,4 5.6.8B-1,2,3,4 5.8.6A,B-1,2 C,D 5.10.6A-1,2 B-1,2		-Class discussions -Writing Assignments -Quizzes -Tests -Essays -Vocabulary -Projects -Comprehension questions -Lab discoveries	-Web Quests -Interactive student discovery through "Science OnLine" - Class discussions -Independent student reading and writing assignments -Differentiated Instruction -Critical thinking Activities -Group classroom projects -Teacher made review questions -Science Labs both hands on in-class and on the computer	-Read the text book (discuss, analyze and write about the material) -Participate in class discussions -Cooperative learning activities -Complete Web Quests -Answer comprehension questions -Fill out charts/diagrams -Complete workbook exercises -Paired Sharing -Guided Reading -Primary and Secondary sources -Graphic Organization -Standardized Test Prep
<u>Chapter 1</u> <u>The Nature of Science</u>	Why is Science a process of observing, studying and thinking about things in order to		Describe scientific methods while being able to distinguish among independent variables,			

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	gain knowledge?		dependent variables, constants and controls.			
			Explain why science is always changing. Be able to compare and contrast scientific theories and laws while understanding the limits of science.			
Chapter 2... Matter	How do the different types of atoms and how they join together determine all of the properties of matter that you can observe?		Identify the states of matter, describe the internal structure of an atom and compare isotopes of an element.			
			List and describe ways atoms combine to form compounds and understand the differences between compounds and mixtures.			

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			Describe the physical properties of matter, list the four states of matter and identify what causes it to change state.			
<u>Chapter 3.....</u> <u>Minerals</u>	Do Minerals compose much of the Earth's crust and can they be identified by their physical properties?		Explain how minerals form and describe the characteristics they all share.			
			Identify minerals using physical properties such as hardness and streak.			
			Describe characteristics of gems that make them more valuable than other minerals and identify the elements contained in them.			

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Chapter 4... Rocks	Why do Rocks continuously change as they are subjected to the process of the rock cycle?		Distinguish between a rock and a mineral as well as describe the rock cycle and some changes a rock could undergo.			
			Recognize the different types of rock including Igneous, Metamorphic and Sedimentary.			
			Explain how the different types of rock form and compare and contrast the different types.			
Chapter 5.... Earth's Energy and Mineral Resources	How do the Earth's resources provide materials and energy for everyday living?		Identify nonrenewable energy. Compare and contrast the advantages and disadvantages of using fossils fuels and nuclear energy.			

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			Compare and contrast inexhaustible and renewable resources.			
			Compare and contrast metallic and nonmetallic mineral resources. Explain the conditions needed for a mineral to be and ore.			
<u>Unit 2.....</u> <u>4 Chapters</u> <u>The Changing Surface of Earth</u> (6 weeks)		5.1.8A-1,2,3,4 5.1.8B-1,2,3 5.1.8C-1,2 5.2.8A-1,2,3 5.2.8B-1,2 5.4.6A,B,C 5.6.6A-1,2,3,4 5.6.6B 5.6.8A-1,2,3,4 5.6.8B-1,2,3,4 5.8.6A,B-1,2 C,D 5.8.8A,BC-1,2D-1,2		- Class discussions - Writing Assignments - Quizzes - Tests - Essays - Vocabulary - Projects - Comprehension questions - Lab discoveries	- Web Quests - Interactive student discovery through "Science OnLine" - Class discussions - Independent student reading and writing assignments - Differentiated Instruction - Critical thinking Activities - Group classroom projects - Teacher made review questions - Science Labs both hands on in-class	- Read the text book (discuss, analyze and write about the material) - Participate in class discussions - Cooperative learning activities - Complete Web Quests - Answer comprehension questions - Fill out charts/diagrams - Complete workbook exercises - Paired Sharing - Guided Reading - Primary and Secondary sources - Graphic Organization - Standardized Test Prep

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		5.10.6A-1,2 B-1,2			and on the computer	
Chapter 6... Views of Earth	Why are different viewpoints used when observing various features of the Earth's surface?		Describe the different types of mountains and understand the differences between plains and plateaus.			
			Use lines of latitude and longitude to identify a location on a map. Analyze different types of map projections.			
Chapter 7.... Weathering and Soil	Why must the natural resource of Soil be monitored, managed and protected?		Explain how climate affects weathering and the Earth's surface. Explain the difference between mechanical weathering and chemical weathering.			

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			<p>Explain how soil forms and why it is important.</p> <p>Describe factors that affect the development of soil and ways to reduce soil erosion.</p>			
Chapter 8... Erosional Forces	How does the process of erosion wear away surface materials and move them from one place to another?		Explain the difference between erosion and deposition.			
			Explain how glaciers move and describe the evidence of glacial erosion and deposition.			
			Explain how wind causes deflation and abrasion. Recognize how loess and dunes form.			

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Chapter 9..... Water Erosion and Deposition	How does surface water reshape Earth through erosion and deposition?		Identify the cause of runoff and the three different stages of stream development.			
			Recognize the importance of groundwater and what affects its movement.			
			Identify the different causes of shoreline erosion. Describe the origins of sand.			
<u>Unit 3.....</u> <u>3 Chapters</u> <u>Earth's Internal Processes</u> (4 weeks)		5.1.8A-1,2,3,4 5.1.8B-1,2,3 5.1.8C-1,2 5.2.8A-1,2,3 5.2.8B-1,2 5.4.6A,B,C 5.6.6A-1,2,3,4 5.6.6B 5.6.8A-1,2,3,4 5.6.8B-1,2,3,4 5.8.6A,B-1,2		-Class discussions -Writing Assignments -Quizzes -Tests -Essays -Vocabulary -Projects -Comprehension questions -Lab discoveries	-Web Quests -Interactive student discovery through "Science OnLine" - Class discussions -Independent student reading and writing assignments -Differentiated Instruction -Critical thinking Activities -Group classroom projects -Teacher made	-Read the text book (discuss, analyze and write about the material) -Participate in class discussions -Cooperative learning activities -Complete Web Quests questions -Answer comprehension questions -Fill out charts/diagrams -Complete workbook exercises -Paired Sharing -Guided Reading -Primary and Secondary sources -Graphic Organization -Standardized Test Prep

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		C,D 5.8.8A,BC- 1,2D-1,2 5.10.6A-1,2 B-1,2			review questions -Science Labs both hands on in-class and on the computer	
Chapter 10... Plate Tectonics	How did the combination of ideas from continental drift, seafloor spreading and many other discoveries lead to the theory of plate tectonics?		Describe the hypothesis of continental drift and identify the evidence supporting it.			
			Explain Seafloor spreading and how heat inside the Earth causes Plate Tectonics.			
Chapter 11..... Earthquakes	How are Earthquakes a result of movement from the Earth's plates?		Explain how earthquakes result from the buildup of energy in rocks. Distinguish among the different types of forces and faults.			

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			Explain how earthquake energy travels and distinguish among the different types of waves.			
			Explain how to make a building earthquake safe, describe where most earthquakes in the US occur and explain how scientists measure them.			
Chapter 12... Volcanoes	How are volcanic eruptions caused by magma reaching Earth's surface?		Describe how volcanoes affect people and the conditions that cause them to form.			
			List three forms of volcanoes and explain how the explosiveness of a volcanic eruption is related to the content of the volcanoes magma.			

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<p><u>Unit 4....</u> <u>2 Chapters</u> <u>Change and Earth's History</u> (3 weeks)</p>		5.1.8A-1,2,3,4 5.1.8B-1,2,3 5.1.8C-1,2 5.2.8A-1,2,3 5.2.8B-1,2 5.4.6A,B,C 5.6.6A-1,2,3,4 5.6.6B 5.6.8A-1,2,3,4 5.6.8B-1,2,3,4 5.8.6A,B-1,2 C,D 5.8.8A,BC-1,2D-1,2 5.10.6A-1,2 B-1,2		- Class discussions - Writing Assignments - Quizzes - Tests - Essays - Vocabulary - Projects - Comprehension questions - Lab discoveries	- Web Quests - Interactive student discovery through "Science OnLine" - Class discussions - Independent student reading and writing assignments - Differentiated Instruction - Critical thinking Activities - Group classroom projects - Teacher made review questions - Science Labs both hands on in-class and on the computer	- Read the text book (discuss, analyze and write about the material) - Participate in class discussions - Cooperative learning activities - Complete Web Quests - Answer comprehension questions - Fill out charts/diagrams - Complete workbook exercises - Paired Sharing - Guided Reading - Primary and Secondary sources - Graphic Organization - Standardized Test Prep
<p><u>Chapter 13....</u> <u>Clue's to the Earth's Past</u></p>	<p>How do fossils, along with relative ages and absolute ages of rocks, provide evidence of past life, climates and environments on Earth?</p>		<p>Determine how fossils can be used to explain changes in Earth's surface, life forms and environments. Understand how fossils form and how they are used</p>			

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			to determine rock ages.			
			Identify how absolute age differs from relative age. Identify how ages are assigned to rock layers.			
Chapter 14... Geologic Time	How do scientists use units of geologic time to interpret the history of life on Earth?		Explain how the changes of Earth's organisms fit into the divisions on the geologic time scale.			
			Draw conclusions about how species adapted to changing environments in Precambrian time and the Paleozoic Era. Describe the changes in Earth and its life-forms at the end of the Paleozoic Era.			
			Compare and contrast characteristics of life forms in the			

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			Mesozoic and Cenozoic Eras. Explain how changes caused by plate tectonics affected organisms during the Mesozoic Era and identify when humans first appeared on Earth.			
<u>Unit 5.....</u> <u>5 Chapters</u> <u>Earth's Air and Water</u> (8 weeks)		5.1.8A-1,2,3,4 5.1.8B-1,2,3 5.1.8C-1,2 5.2.8A-1,2,3 5.2.8B-1,2 5.4.6A,B,C 5.6.6A-1,2,3,4 5.6.6B 5.6.8A-1,2,3,4 5.6.8B-1,2,3,4 5.8.6A,B-1,2 C,D 5.8.8A,BC-1,2D-1,2 5.10.6A-1,2		-Class discussions -Writing Assignments -Quizzes -Tests -Essays -Vocabulary -Projects -Comprehension questions -Lab discoveries	-Web Quests -Interactive student discovery through "Science OnLine" - Class discussions -Independent student reading and writing assignments -Differentiated Instruction -Critical thinking Activities -Group classroom projects -Teacher made review questions -Science Labs both hands on in-class and on the	-Read the text book (discuss, analyze and write about the material) -Participate in class discussions -Cooperative learning activities -Complete Web Quests -Answer comprehension questions -Fill out charts/diagrams -Complete workbook exercises -Paired Sharing -Guided Reading -Primary and Secondary sources -Graphic Organization -Standardized Test Prep

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		B-1,2			computer	
<u>Chapter 15... Atmosphere</u>	How does the Earth's atmosphere help regulate the absorption and distribution of energy received from the Sun?		Identify the gases and explain the structure of the Earth's atmosphere.			
			Describe what happens to the energy the Earth receives from the Sun and be able to explain the differences between convection, conduction and radiation.			
			Explain how land and water surfaces affect the overlying air and why different latitudes on Earth receive different amounts of solar energy.			

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Chapter 16..... Weather	What is weather and what does it refer to?		Describe how clouds, rain, hail, sleet and snow develop.			
			Identify the dangers of severe weather and describe how weather is associated with fronts and high and low pressure areas.			
Chapter 17..... Climate	What is the relationship between Climate and Weather?		Describe what determines climate and how organisms adapt to particular climates.			
			Explain how latitude, oceans and other factors affect the climate of a region along with causes for climate change.			
Chapter 18.... Ocean Motion	Why are oceans important sources of water, food, energy and		Identify the origins of the water in the Earth's oceans			

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	minerals?		along with its composition of seawater.			
			Describe density currents and wave formation. Explain how tides form and know the difference between movement of water particles in a wave and the movement of the wave.			
Chapter 19..... Oceanography	Why do so many organisms, including humans, depend on the ocean for their survival?		Describe a continental shelf, continental slope, mid-ocean ridge, abyssal plain and ocean trench.			
			Explain how ocean pollution affects the entire world and describe ways it can be controlled.			

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<p><u>Unit 6.....</u> <u>2 Chapters</u> <u>You and the Environment</u> (3 Weeks)</p>		5.1.8A-1,2,3,4 5.1.8B-1,2,3 5.1.8C-1,2 5.2.8A-1,2,3 5.2.8B-1,2 5.4.6A,B,C 5.6.6A-1,2,3,4 5.6.6B 5.6.8A-1,2,3,4 5.6.8B-1,2,3,4 5.8.6A,B-1,2 C,D 5.8.8A,BC-1,2D-1,2 5.10.6A-1,2 B-1,2		- Class discussions - Writing Assignments - Quizzes - Tests - Essays - Vocabulary - Projects - Comprehension questions - Lab discoveries	- Web Quests - Interactive student discovery through "Science OnLine" - Class discussions - Independent student reading and writing assignments - Differentiated Instruction - Critical thinking Activities - Group classroom projects - Teacher made review questions - Science Labs both hands on in-class and on the computer	- Read the text book (discuss, analyze and write about the material) - Participate in class discussions - Cooperative learning activities - Complete Web Quests - Answer comprehension questions - Fill out charts/diagrams - Complete workbook exercises - Paired Sharing - Guided Reading - Primary and Secondary sources - Graphic Organization - Standardized Test Prep
Chapter 20..... Our Impact on Land	Why will the strain on the environment worsen as the world population continues to rise?		Identify reasons for Earth's rapid increase in human population and list several ways each person can affect the environment.			
			Identify things individuals can do to help protect the			

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			environment and explain the advantages of recycling.			
Chapter 21.... Our Impact on Water and Air	How can pollution problems be reduced when states and nations cooperate?		Identify types of water pollutants and their effects and list ways that you can help reduce water pollution.			
			Identify the different sources of air pollution and how it affects people and list ways that air pollution can be reduced.			
<u>Unit 7.....</u> <u>4 Chapters</u> <u>Astronomy</u> (5 weeks)		5.1.8A-1,2,3,4 5.1.8B-1,2,3 5.1.8C-1,2 5.2.8A-1,2,3 5.2.8B-1,2 5.4.6A,B,C 5.6.6A-1,2,3,4 5.6.6B 5.6.8A-1,2,3,4		-Class discussions -Writing Assignments -Quizzes -Tests -Essays -Vocabulary -Projects -Comprehension questions -Lab discoveries	-Web Quests -Interactive student discovery through "Science OnLine" - Class discussions -Independent student reading and writing assignments -Differentiated Instruction -Critical thinking	-Read the text book (discuss, analyze and write about the material) -Participate in class discussions -Cooperative learning activities -Complete Web Quests -Answer comprehension questions -Fill out charts/diagrams -Complete workbook exercises -Paired Sharing

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		5.6.8B-1,2,3,4 5.9.6A-1,2 B-1,2 C-1,2 D 5.9.8A-1,2,3 B,C,D			Activities -Group classroom projects -Teacher made review questions -Science Labs both hands on in-class and on the computer	-Guided Reading -Primary and Secondary sources -Graphic Organization -Standardized Test Prep
Chapter 22..... Exploring Space	How will spacecraft allow scientists to learn even more about the Moon and planets?		Identify the differences between optical and radio telescopes and artificial satellites and space probes.			
			Explain the usefulness of orbital space stations and how space technology can be applied to everyday life.			
Chapter 23..... The Sun-Earth-Moon System	How are seasons, eclipses and lunar phases caused by interactions between the Sun, Earth and the Moon?		Differentiate between rotation and revolution. Identify the Earth's physical characteristics and what causes seasons to change.			

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			Explain why solar and lunar eclipses occur and identify the phases of the Moon and their cause.			
Chapter 24..... The Solar System	What are the components of the solar system?		Explain how gravity holds the planets in their orbit around the Sun.			
			Describe each inner planet and know their order from the Sun.			
			Distinguish among comets, meteoroids, and asteroids and explain what happens when objects from space impact the Earth.			
Chapter 25..... Stars and Galaxies	What makes up the universe?		Explain why some constellations are visible only during certain seasons.			
			Describe the structure of the Sun, sunspots,			

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			prominences and solar flares.			
			Describe how stars evolve and how they are classified. Compare stars on the H-R diagram.			
			Identify the Sun's position in the Milky Way Galaxy and the fact that the same natural laws that apply to our solar system also apply in other galaxies.			