

Coastal Geology

Coastal Geology: Grades 11 & 12				
Learning Standards	Objectives	Resources	Time Allotment	SHS Student Expectations
Learning Standard #1 Major Changes in the Universe				
Learning Standard # 1.1 Physical and chemical properties	The student will be able to: <ul style="list-style-type: none"> Identify and explain some of the physical properties that have occurred in the universe. Identify and explain some of the chemical properties that have occurred in the universe. 	Video: The Practical Guide to the Universe Merrill: Chapter 4 Matter	6days	1,2, 3, 5
Learning Standard # 1.2 Matter and energy	The student will be able to: <ul style="list-style-type: none"> Explain the formation of matter and energy. Explain the Conservation of Mass and Energy 	Video: Mysteries of Deep Space parts 1-3 Merrill: Chapter 5 Chemical Bonding	5 days	1,2, 3, 5
Learning Standard # 1.3 Gravity	The student will be able to: <ul style="list-style-type: none"> Describe the effect of gravity on the formation of the universe. 	Video: Discovery “Gravity” Video: Nova “Black Hole”	6days	1,2, 3, 5
Learning Standard # 2 Formation of the Galaxies				
Learning Standard # 2.1 Stars	The student will be able to: <ul style="list-style-type: none"> Trace the development of the formation of stars. Identify the life stages of a star. Recognize stars by size and temperature. 	Video: TLC “Secrets of the Sun” Video: TLC “Reach for the Stars” Video: A Star is Born Merrill: Chapter 6 The Big Bang	5 days	1,2, 3, 5
Learning Standard # 2.2 Sun and the Planets	The student will be able to: <ul style="list-style-type: none"> Relate how our solar system was formed. Explain the history of the solar 	Video: The Miracle Planet Video: The Third Planet AUTHOR: The Miracle Planet Ch. 1&2	5days	1, 3, 5

	system.			
Learning Standard # 3 Formation of the Earth				
Learning Standard # 3.1 Age of the earth	The student will be able to: <ul style="list-style-type: none"> Trace the formation of the earth. Describe the process of the formation of the oceans. 	Video: The Heat Within Ganeri: pgs 8 & 9 Filmstrip: The Restless Earth	6 days	1,2,3,5
Learning Standard # 3.2 Structure of the Earth	The student will be able to: <ul style="list-style-type: none"> Identify the different structural formations of the earth in relationship to ocean floor formation. Describe past and present oceans. 	Video: TLC “Understanding the Oceans” Ganeri: pgs 4 & 5	4 days	1,2,4,5
Learning Standard # 3.3 Composition of the Earth	The student will be able to: <ul style="list-style-type: none"> Identify composition of the earth’s crust and the ocean floor. Describe geological time scales. Trace the development of the ocean floor. 	Video: Volcanoes of the Deep Merrill: Chapter 8 Geological Time Ganeri: pgs 22, 28:	5 days	1,2,3,4,5
Learning Standard # 4 Plate Tectonic Theory				
Learning Standard # 4.1 Crustal Plates	The student will be able to: <ul style="list-style-type: none"> Explain how crustal plates are formed. The student will be able to: <ul style="list-style-type: none"> Explain how crustal plates drift. Explain how crustal plates are changing. 	Ganeri: pgs 6,7 Merrill: Chapter 9 Plate Tectonics	4 days	1,2,3,5
Learning Standard # 5 Oceanography				
Learning Standard # 5.1 Hydological Cycle	The student will be able to: <ul style="list-style-type: none"> Explain the water cycle and its effect on coastal areas. Draw and label the water cycle. 	Video: The Nature of Things- Water parts 1 and 2 Merrill: Chapter 10 The Hydologic Cycle	5 days	1,2,3,4,5,6

	<ul style="list-style-type: none"> • Relate filtration of ground water to water cycle. 			
Learning Standard # 5.2 Weathering	The student will be able to: <ul style="list-style-type: none"> • Predict the effect of chemical and physical weathering on coastal areas. • Explain the formation and erosion of beaches. • Relate the effect of weathering on dune formation and movement. • Identify the different dune structures. 	Video: Portrait of a Coast Filmstrip: Marine Biomes, the beach parts 1 and 2 Merrill: Chapter 11 Sand Dunes	5 days	1,2,3,5,6
Learning Standard # 5.3 Structure of the Ocean Floor	The student will be able to: <ul style="list-style-type: none"> • Identify the major features of the ocean floor 	Video: Into the Abyss Ganeri: pgs 24 -28	4 days	1,2,5
Learning Standard # 6 Beaches				
Learning Standard # 6.1 Beach Formation	The student will be able to: <ul style="list-style-type: none"> • Recognize different types of beaches • Identify the major features of beaches • Trace the development of dunes 	Slides of Scituate Beaches (past and present) Filmstrip: Marine Biomes (Salt Marshes) Video: Portrait of a Coast	5 days	1,2,3,5,6
Learning Standard # 6.2 Beach Erosion	<ul style="list-style-type: none"> • Understand the effect of natural beach erosion • Understand the effect of storms on beach erosion • Recognize mechanical and chemical weathering 	Video: Gale of 1898 Video: Halloween of 1990 Video: No-name Storm of 1991	4 days	1,2,3,4,5,6
Learning Standard # 6.3	The student will be able to:	Video: Ocean of Light	3 days	1,2,5

Ocean Currents	<ul style="list-style-type: none"> Identify the major ocean currents. Relate the ocean currents to productivity 	Ganeri: pgs 42-50		
Learning Standard # 7 Glaciation				
Learning Standard # 7.1 Effect of glaciation	<p>The student will be able to:</p> <ul style="list-style-type: none"> Relate the effect of glaciation on southeastern Massachusetts especially Scituate Identify glacial deposits Recognize the effect of glaciation on the formation of Cape Cod 	<p>Merrill: Chapter 12 Features of Glaciated Mountain Areas Video: Cape Cod, Sands of Time Video: Miracle Planet, Riddles of Sand and Ice Video: TLC "Edge of Ice" Video: Nova "On Shifting Sands" Filmstrip: National Geographic "The Changing Landscape" Filmstrip: Ward's "Glaciers" Assorted slides of glaciers and landforms</p>	8days	1, 3, 5
Learning Standard # 8 Storms				
Learning Standard # 8.1 Great storms	<p>The student will be able to:</p> <ul style="list-style-type: none"> Recognize the effect of major storms on the coastline 	<p>Video: Storms of the Century Video: Home videos of Scituate storms of 1990 and 1991</p>	5 days	1,2, 3,4, 5

Learning Standard # 9 Laboratory		All of the labs listed above pertain to this standard. Students keep a laboratory notebook of all of their labs.		
Learning Standard # 9.1 Making observations of chemical reactions and substances	<p>The student will be able to:</p> <ul style="list-style-type: none"> Observe chemical reactions in the laboratory. 	All labs	Continual	1,2, 3,4, 5
Learning Standard # 9.2 Recording data	<p>The student will be able to:</p> <ul style="list-style-type: none"> Record accurate and precise data. 	All labs	Continual	1,2, 3,4, 5
Learning Standard # 9.3 Calculating and interpreting results	<p>The student will be able to:</p> <ul style="list-style-type: none"> Perform calculations describing 	All labs	Continual	1,2,3,4, 5

based on the quantitative data obtained	laboratory experiments. <ul style="list-style-type: none"> • Interpret the data and calculations of an experiment to reach conclusions about that experiment. 			
Learning Standard # 9.4 Communicating effectively the results of experimental work	The student will be able to: <ul style="list-style-type: none"> • Write a conclusion summing up the laboratory results and explaining the chemical implications of an experiment. 	All labs	Continual	1,2, 3,4, 5