



GREAT NECK PUBLIC SCHOOLS

"Where Discovery Leads to Greatness"

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Curriculum Profile: Earth Science Regents

<u>Department</u>	Science		
<u>Course Name</u>	Regents Earth Science		
<u>Course Length</u>	1 Year		
<u>High School Credits</u>	1.0		
<u>Description</u>	<p>This course is a NYS Regents course designed to give students an overview of Earth systems through the study of such topics as astronomy, geology, weather and climate, and human sustainability. To accomplish this, students will explore phenomena and apply science and engineering practices to make sense of these phenomena. Further, students will utilize the engineering process to define and analyze problems related to Earth science. This course concludes with the NYS Physical Setting/Earth Science Regents exam. Students must satisfactorily complete 1200 minutes of required laboratory experiences in order to sit for the Regents examination.</p>		
<u>Target/eligible students</u>	8th grade students and high school students who complete Living Environment before arriving to Great Neck		
<u>State Learning Standards Link(s)</u>	High School Science Learning Standards Middle School Science-Learning-Standards		
<u>Primary texts and materials</u>	Castle Learning Explore Learning Sequence and material are at the discretion of the individual teacher and school		
<u>Scope/Sequence</u>	Standards	Key Ideas, Terms, Concepts	
	<u>Space Systems</u> HS-ESS1-1 HS-ESS1-2 HS-ESS1-3 HS-ESS1-4 HS-ESS1-7 MS-ESS1-1 MS-ESS1-2 MS-ESS1-4	Earth is currently the only planet that supports life as we know it. Understanding how the Earth was made and various observations we make each day, month, year, and over longer time-scales is essential to make sense of our place in space. Astronomical phenomena such as the daily motions of the sun, lunar cycles, seasonal shifts, movements around the sun, and motion through space affect various aspects of life on Earth. In this unit students will gain an understanding of these phenomena as they connect these astronomical events to their own lives. Students will make astronomical observations of the sun, moon and seasons. They will examine the formation of our solar system to understand the structure and function of the major bodies within our solar neighborhood. To understand where the materials, beyond hydrogen and helium came from students will understand stars and giant star explosions known as supernovae. To do this students will examine stellar evolution, and classification and its overarching impact on all aspects of life on Earth. Finally, students will explore deep space in a study of the Big Bang Theory to understand the origins of the Universe.	73 46 47

<u>History of Earth</u>	HS-ESS1-5 HS-ESS1-6 HS-ESS2-1 MS-ESS2-3 MS-ESS2-2	The Earth's geologic time scale tells a story about life and the rise and fall of species, showing life is fragile in the face of gradual and sudden changes to the environment. In this unit, students will learn how rock and fossil observations in combination with radioactive dating techniques have been used to construct a geologic time scale. Students will also explore the vastness of geologic time.	75 47
<u>Earth's Systems</u>	HS-ESS2-2: HS-ESS2-3: HS-ESS2-5: HS-ESS2-6: HS-ESS2-7: MS-ESS2-1:	Geology is the study of the Earth, the materials of which it is made, the composition of those materials, and the processes acting upon them. In this unit students will focus on various geological topics including topography, weathering, erosion, deposition, rocks, minerals, structure of Earth's interior, plate tectonics, seismic activity, etc. To fully understand these concepts an understanding of how materials cycle within Earth's systems is essential. Students will explore how energy from the Earth's core drives various processes through the formation of rocks, the movement of tectonic plates, and the surface processes that breakdown, erode, and deposit Earth materials.	77 48
<u>Weather and Climate</u>	HS-ESS2-4 HS-ESS3-5 HS-ESS2-8 MS-ESS2-5 MS-ESS2-6 MS-ESS3-5	In this unit students will observe models and analyze data to learn how the interplay between atmospheric variables such as temperature, air pressure, and moisture leads to the typical and sometimes extreme weather events that humans' experience. Students will utilize weather instruments to make observations, create synoptic weather maps, and predict future weather conditions. Students will explore the signs of climate change and problems associated with climate change. To understand the science of climate change students will gain an understanding of energy, energy transfer, and the greenhouse effect. Students will investigate factors that lead to variations in climate such as: El Nino, elevation, latitude, orographic effect, ocean currents, prevailing winds and pressure belts, proximity to large bodies of water, volcanic eruptions, and human causes such as deforestation and the burning of fossil fuels. Students will examine these climatic factors and water resources to identify and propose solutions to the problems associated with climate change.	79 49
<u>Human Sustainability</u>	HS-ESS3-1: HS-ESS3-2: HS-ESS3-3: HS-ESS3-4: HS-ESS3-6: MS-ESS3-3: MS-ESS3-4: MS-ESS3-2:	Students will examine evidence to understand how human actions have changed the lithosphere, hydrosphere and atmosphere. Students will examine the concepts of sustainability with regards to natural resources and apply this knowledge to define environmental problems and develop solutions to help mitigate human impact and create a more sustainable coexistence with our Earth.	81 50
<u>Engineering</u>	HS-ETS1-1 HS-ETS1-2	Throughout the course students utilize the engineering design process to solve problems. This includes defining	83

	HS-ETS1-3 HS-ETS1-4	problems and constraints, evaluating competing designs, analyzing data from tests, and developing models to achieve optimal designs.	
<u>Additional Notes</u>	Sequence and Materials are at the discretion of the individual teacher & school		