Pine Hill Public Schools Curriculum			
Content Area:	**Science**		
Course Title/ Grade Level:	Science – Grade 7		
Unit 1:	Nature of Science	Month:	**September**
Unit 2:	Structure and Function	Month:	**October/November**
Unit 3:	Space Science	Month:	**December/January**
Unit 4:	Geology	Month:	**February/March**
Unit 5:	Rocks and Minerals	Month:	**March/April**
Unit 6:	Earth Science	Month:	**May/June**
Date Created or Revised:	Spring 2012		
BOE Approval Date:	8/28/12		

Pine Hill Public Schools Science Curriculum		
Unit Title: Nature of Science		**Unit #: 1**
Course or Grade Level: 7	**Length of Time:**	
Pacing	•	
Essential Questions	• What is science?	
Content	• Scientific Method • Lab Safety • Fields of scientific study • Scientific Measurements • Scientific Law • Scientific Theory •	
Skills	• Identify a question; formulate a hypothesis; • recognize variables; analyze results; create • a conclusion • Safe lab practices • Personal understanding about the nature and • Fields of scientific study • Identify the metric system • Present data using appropriate metric units • Explain how scientific theory, experimentation and scientific law are interrelated • Realize that science is an on-going proc	
Math Skills/ Science Processes	• TBD	
Assessments	• Tests, Quizzes, Labs,	
Interventions / differentiated instruction	• TBD	
Inter-disciplinary Connections	• Math – number sense • History – history of measurement and tools used throughout time • Lang Arts – reading, writing, vocab	
Lesson resources / Activities	• Earth Science Glencoe- • McGraw Hill 2002 • Resource box for book including tests, worksheets, enhancements, overhead transparencies • rulers, thermometers, graduated cylinders, meter sticks, beakers, triple beam balances • CHAPTER 1 Earth Science and Supplemental materials from Ed Helper and Science Spot •	
2009 NJCCCS		

Standard:							
Strand(s):							
Content Statement(s):				**CPI # / CPI(s):**			
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21st Century Skills							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

Pine Hill Public Schools Science Curriculum		
Unit Title: Structure and Function		**Unit #: 2**
Course or Grade Level: 7	**Length of Time:**	
Pacing	•	
Essential Questions	• How does the structure and function of cells determine the function and development of living things? • Who am I? • Why do I look the way I do? • How does my body work to keep me going?	
Content	• Animal cell vs Plant cell • Cell organelles (cell wall, cell membrane, nucleus, mitochondria, chloroplast, lysosome, ribosome, vacuole, Golgi bodies, ER) • Life Cycle of viruses • Viruses from the past and those in the present • Punnett squares • Inheritance • Sex-linked diseases • Probability • Body systems including: skeletal, muscular, cardiac, respiratory, digestive/excretory, nervous	
Skills	• Define virus • Describe the life cycle of a virus • Research and present variety of viruses that affect the human population (AIDS, SARS, West Nile, Avian Bird Flu, Chicken pox etc.) • Define and identify the organelles of a cell and the respective 'job' of each one • Examine punnett squares and how they can be used to determine inheritance of traits • Calculate probability • Identify organs that make up organ systems	
Math Skills/ Science Processes	•	
Assessments	• Test, Quizzes, Labs, travel brochure, models, posters, games	
Interventions / differentiated instruction	•	
Inter-disciplinary Connections	• History – father of genetics Mendel • Lang Arts – reading, writing, vocabulary • Math – probability and statistics	
Lesson resources / Activities	• CHAPTER 2 & 3(pgs 52-55) Life Science • CHAPTER 5 (pgs -) Life Science, EdHelper and Science Spot • *Life Science Glencoe- • McGraw Hill 2002 • *Resource box for book including tests, worksheets, enhancements, overhead transparencies	

	• *plant and animal cell models • *Evan video collection

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21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21st Century Skills							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

Pine Hill Public Schools Science Curriculum		
Unit Title: Space Science		**Unit #: 3**
Course or Grade Level:	**Length of Time:**	
Pacing	•	
Essential Questions	• Where are we? • What factors might influence future space travel? • Why are all the planets different? •	
Content	• Physical characteristics of Earth • Rotation/revolution ~ seasons • Phases of the moon • Eclipses • History of moon exploration • Space exploration • Model of the solar system • Inner planets • Outer planets • Comets, asteroids, space junk	
Skills	• Examine the physical characteristics of the Earth • Discuss the history of the argument about Earth being a sphere • Compare/contrast rotation and revolution, solstice and equinox • Clarify and discuss the misconceptions behind why the season changes occur on Earth • Clarify and discuss the reasons behind day and night • Describe, define, draw and detect the various phase changes that occur during a lunar month • Identify the characteristics of all 8 planets (3 dwarf planets) •	
Math Skills/ Science Processes	• TBD	
Assessments	• Tests, Quizzes, Labs, student made calendar showing lunar phases during the month, travel brochure about one of the nine planets	
Interventions / differentiated instruction	• TBD	
Inter-disciplinary Connections	• History – research history of space travel and famous astronauts; what impact space travel has on society • Math – calculations for spherical shape of Earth, and discussion of formula for revolution and ellipses	
Lesson resources / Activities	• • *Earth Science Glencoe- • McGraw Hill 2002 • *Resource box for book including tests, worksheets, enhancements, overhead transparencies • *computers with internet access •	

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21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21st Century Skills							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

Pine Hill Public Schools Science Curriculum		
Unit Title: Geology		**Unit #: 4**
Course or Grade Level:	**Length of Time:**	
Pacing	•	
Essential Questions	• Through the years… how has Earth grown up continued? • An Earthquake in our backyard… is it possible?	
Content	• Geologic time • Evolution of organisms (correlation to geologic) • Plate tectonics • Precambrian, Paleozoic, Mesozoic, Cenozoic era • Fossil/life of the above • 1st appearance of humans • Relationship between energy and earthquakes • Earthquake travel • Earthquake detection • Affect of earthquakes on environmental conditions (people and land •	
Skills	• Discuss natural selection and how it has shaped the Earth • Create a timeline showing the divisions of geologic time • Explain the events that helped shape the Earth • Identify the characteristics of Precambrian, Paleozoic, Mesozoic, and Cenozoic Eras • Describe what an Earthquake is and how it affects people's lives • Compare/contrast the three different types of faults involved in Earthquakes • Compare/contrast the three different types of seismic waves that occur during an Earthquake • Describe the interior structure of the Earth and how it relates to an earthquake •	
Math Skills/ Science Processes	• TBD	
Assessments	• Tests, quizzes, labs, timeline showing geologic evolution	
Interventions / differentiated instruction	• TBD	
Inter-disciplinary Connections	• History – timelines • Math –algebraic calculations • Lang Arts – reading, writing, vocabulary	
Lesson resources / Activities	• • *Life Science Glencoe-McGraw Hill 2002 • *Earth Science Glencoe-McGraw Hill 2002	

	• *Resource box for book including tests, worksheets, enhancements, overhead transparencies • *fossil collections • 3D model of Earth • *earthquake shake table, popsicle sticks, wood glue, q-tips

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21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21st Century Skills							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

Pine Hill Public Schools Science Curriculum		
Unit Title: Rocks and Minerals		**Unit #: 5**
Course or Grade Level:	**Length of Time:**	
Pacing		
Essential Questions	• What is it? • How can you tell a rock from a mineral?	
Content	• Characteristics of minerals • Mineral formation • Identification/physical properties of minerals • Precious Gems • Characteristics of rocks • Rock cycle • Classification of rocks: igneous, metamorphic, sedimentary	
Skills	• Name the three major rock types: igneous, metamorphic, and sedimentary • Identify how each rock type is formed • Trace the rock cycle • Describe and classify rocks and minerals based on various physical and chemical characteristics • Describe the internal composition of the Earth	
Math Skills/ Science Processes	• TBD	
Assessments	• Tests, Quizzes, Labs, Demonstrations	
Interventions / differentiated instruction	• TBD	
Inter-disciplinary Connections	• Lang Arts – reading, writing, vocabulary	
Lesson resources / Activities	• Earth Science Glencoe-McGraw Hill 2002 • *Resource box for book including tests, worksheets, enhancements, overhead transparencies • *fossil collections • *Washington Collection Rock samples • *Mineral field guides	
2009 NJCCCS		
Standard:		
Strand(s):		
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21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21st Century Skills							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

Pine Hill Public Schools Science Curriculum		
Unit Title: Earth Science		**Unit #: 6**
Course or Grade Level: 7	**Length of Time:**	
Pacing	•	
Essential Questions	• The ocean around us, how valuable is it? • Through the years… how has Earth grown-up?	
Content	• Oceanography • Levels within the ocean : shelf, slopes, plains, MOR • Oceanic life • Oceanic habitats • Ocean pollution causes/effects • What can we do to help slow pollution down • Continental Drift theory • Theory of Plate Tectonics • Plate boundaries • Causes of plate tectonics • Visuals of plate tectonics • Test for plate tectonics •	
Skills	• Label, define, differentiate between the various level of the oceanic basin • Discuss the various mineral resources that we have available from the ocean • Discuss the energy relationships that exist between animals and their environments • Various life found in the levels of the ocean. Draw, describe, create some of these animals • Describe Pangaea and timeline how we reached out current continental locations • Differentiate between the different types of plates and boundaries • Identify major landmarks that are a creation of plate tectonics	
Math Skills/ Science Processes	•	
Assessments	• Oceanic mural with descriptive index cards, tests, quizzes, labs, timeline showing geologic evolution	
Interventions / differentiated instruction	•	
Inter-disciplinary Connections	• Lang Arts – reading, writing, vocabulary	
Lesson resources / Activities	• Earth Science Glencoe-McGraw Hill 2002 • Resource box for book including tests, worksheets, enhancements, overhead transparencies • computer with internet access	
2009 NJCCCS		
Standard:		

Strand(s):							
Content Statement(s):				**CPI # / CPI(s):**			
21st Century Themes							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21st Century Skills							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		