

Pine Hill Public Schools Curriculum

Content Area:		Science	
Course Title/ Grade Level:		Grade 5	
Unit 1:	"Going Green"	Month:	1st Marking Period
Unit 2:	Geology	Month:	1st Marking Period
Unit 3:	Energy	Month:	2nd Marking Period
Unit 4:	Circuits	Month:	2nd Marking Period
Date Created or Revised:		June 2012	
BOE Approval Date:		8/28/12	

**Pine Hill Public Schools
Science Curriculum**

Unit Title: Scientific Method		Unit #: 1
Course or Grade Level: 5		Length of Time: Throughout Science Curriculum
Pacing		
Essential Questions	<ul style="list-style-type: none"> • What is the Scientific Method? • What tools are used in the Science Lab? 	
Content	<ul style="list-style-type: none"> • Scientific Method • Lab Introduction • Lab Safety • Microscopes 	
Skills	<ul style="list-style-type: none"> • Identify steps of Scientific Method • Apply Scientific Method to problem solving • Identify Science Lab equipment and function • Demonstrate proper use of microscopes. 	
Assessments	<ul style="list-style-type: none"> • Quizzes/Tests • Teacher Observation • Lab Process & Reports • Operation of Microscope 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Visual Aides • Manipulatives • Kinesthetic activities 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math – Recording Data • Writing – Lab Reports 	
Lesson resources / Activities	<ul style="list-style-type: none"> • Labs related to current topic/unit 	
2009 NJCCCS		
Standard: 5.1 Science Practices		
Strand(s): A:Understand Scientific Explanations, B: Generate Scientific Evidence Through Active Investigation, C: Reflect on Scientific Knowledge, D: Participate Productively in Science		
Content Statement(s):	CPI # / CPI(s):	

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Unit Title: "Going Green" Interdependence		Unit #: 2
Course or Grade Level: 5		Length of Time: 1st Marking Period
Date Created: June 2012		BOE Approval Date:
Pacing		
Essential Questions	<ul style="list-style-type: none"> • In what ways do organisms interact within ecosystems? • What are biotic and abiotic factors? • How does meeting human needs and wants impact local and global environments? • How do changes in one part of the Earth system affect other parts of the system? 	
Content	<ul style="list-style-type: none"> • Biotic and abiotic factors • Human needs and wants • Endangered /threatened species • Conservation 	
Skills	<ul style="list-style-type: none"> • Explain human impact on environment • Predict outcome of altering factors • Describe how one population can effect another • Create a model of ecosystem • Describe ways humans can improve health of ecosystems 	
Assessments	<ul style="list-style-type: none"> • Formative- Topic Probe, teacher observation, graphic organizers, homework, whiteboards • Summative- Tests, quizzes, projects 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Visual Aides • Manipulatives • Kinesthetic activities 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Essay writing • Reading skills (prediction, cause/effect) • Computer research 	
Lesson resources / Activities	<ul style="list-style-type: none"> • Chapter 6 MacMillan McGraw-Hill <u>Science</u> • Disney Planet Challenge • Internet • Topic Probe 	
2009 NJCCCS		
Standard: 5.3 Life Science/5.4 Earth Systems Science		
Strand(s): C Interdependence/ G. Biogeochemical Cycles		
Content Statement(s):	CPI # / CPI(s):	
Various human activities have changed the capacity of the environment to support some life forms.	5.3.6.C.1 – Explain the impact of meeting human needs and wants on local and global environments.	
The number of organisms and populations an ecosystem can support depends on the biotic resources available and on abiotic factors, such as quantities of light and water, range of temperatures, and soil composition.	5.3.6.C.2 – Predict the impact that altering biotic and abiotic factors has on an ecosystem.	
All organisms cause changes in the ecosystem in which they live. If this change reduces another organism’s access to	5.3.6.C.3 – Describe how one population of organisms may affect other plants and/or animals in an ecosystem	

resources, that organism may move to another location or die.	
An ecosystem includes all of the plant and animal populations and nonliving resources in a given area. Organisms interact with each other and with other components of an ecosystem.	5.4.6.G.2 – Create a model of ecosystems in two different locations, and compare and contrast the living and nonliving components.
Personal activities impact the local and global environment.	5.4.6.G.3 – Describe ways that humans can improve the health of ecosystems around the world.

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Unit Title: Geology		Unit #: 3
Course or Grade Level: 5		Length of Time: 1st Marking Period
Date Created: June 2012		BOE Approval Date:
Pacing		
Essential Questions	<ul style="list-style-type: none"> • How do geologic events occurring today provide insight into Earth's past? • What are the characteristics of the different types of rocks? • What is erosion and how can it be reduced? • How are landforms created? 	
Content	<ul style="list-style-type: none"> • Sedimentary, igneous, and metamorphic rocks • Deposition and erosion • Landforms/surface features • Rock layers 	
Skills	<ul style="list-style-type: none"> • Interpret rock layer pictorial representation • Examine and identify surface features • Describe landform creation • Describe how people can reduce erosion • Locate areas being created and destroyed on a map 	
Assessments	<ul style="list-style-type: none"> • Formative- Topic Probe, teacher observation, graphic organizers, homework, whiteboards • Summative- Tests, quizzes, projects 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Visual Aides • Manipulatives • Kinesthetic activities 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Reading Graphic Resources 	
Lesson resources / Activities	<ul style="list-style-type: none"> • Chapter 7 MacMillan McGraw-Hill <u>Science</u> • Landform maps • Internet • Topic Probe 	
2009 NJCCCS		
Standard: 5.4 Earth Systems Science		
Strand(s): B: History of Earth/ C: Properties of Earth Materials/ D: Tectonics		
Content Statement(s):	CPI # / CPI(s):	
Successive layers of sedimentary rock and the fossils contained in them tell the factual story of the age, history, changing life forms, and geology of Earth.	5.4.6.B.1- Interpret a representation of a rock layer sequence to establish oldest and youngest layers, geologic events, and changing life forms.	
Earth's current structure has been influenced by both sporadic and gradual events.	5.4.6.B.2 – Examine Earth's surface features and identify those created on a scale of human life or on a geologic time scale.	
Moving water, wind, and ice continually shape Earth's surface by eroding rock and soil in some areas and depositing them in others areas	5.4.6.B.3 – Determine if landforms were created by processes of erosion (e.g., wind, water, and/or ice) based on evidence in pictures, video, and/or maps.	
Erosion plays an important role in the formation of soil, but too	5.4.6.B.4 – Describe methods people use to reduce soil erosion.	

<p>much erosion can wash away fertile soil from ecosystems, including farms.</p>	
<p>The rock cycle is a model of creation and transformation of rocks from one form (sedimentary, igneous, or metamorphic) to another. Rock families are determined by the origin and transformations of the rock.</p>	<p>5.4.6.C.2 – Distinguish physical properties of sedimentary, igneous, or metamorphic rocks and explain how one kind of rock could eventually become a different kind of rock.</p>
<p>Earth’s landforms are created through constructive and destructive processes.</p>	<p>5.4.6.D.2 – Locate areas that are being created (deposition) and destroyed (erosion) using maps and satellite images.</p>
<p>Earth has a magnetic field that is detectable at the surface with a compass.</p>	<p>5.4.6.D.3 – Apply knowledge of Earth’s magnetic fields to successfully complete an orienteering challenge.</p>

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Unit Title: Energy		Unit #: 4
Course or Grade Level: 5		Length of Time: 2 nd Marking Period
Date Created: June 2012		BOE Approval Date:
Pacing		
Essential Questions	How is light's travel path influenced by an object or material? How does light allow the eye to see? How do you get color from white light?	
Content	Reflected and refracted light Prisms Opaque, transparent, translucent materials Convex, concave lenses	
Skills	<ul style="list-style-type: none"> • Predict the path of reflected/refracted light • Describe how prisms can be used to demonstrate that light from the Sun is made up of different colors 	
Assessments	<ul style="list-style-type: none"> • Formative- Topic Probe, experiment, teacher observation, graphic organizers, homework, whiteboards • Summative- Tests, quizzes, lab reports 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Visual Aides • Manipulatives • Kinesthetic activities 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Reading/Writing – Making Predictions 	
Lesson resources / Activities	<ul style="list-style-type: none"> • Chapter 16 MacMillan McGraw-Hill <u>Science</u> • Internet • Topic Probe • Prism Kits 	
2009 NJCCCS		
Standard: Physical Science		
Strand(s): C: Forms of Energy		
Content Statement(s):	CPI # / CPI(s):	
Light travels in a straight line until it interacts with an object or material. Light can be absorbed, redirected, bounced back, or allowed to pass through. The path of reflected or refracted light can be redirected.	5.2.6.C.1 – Predict the path of reflected or refracted light using reflecting and refracting telescopes as examples	
Visible light from the Sun is made up of a mixture of all colors of light. To see an object, light emitted or reflected by that object must enter the eye.	5.2.6.C.2 – Describe how prisms can be used to demonstrate that visible light from the Sun is made up of different colors.	

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Unit Title: Circuits		Unit #: 5
Course or Grade Level: 5		Length of Time: 2 nd Marking Period
Date Created: Jue 2012		BOE Approval Date:
Pacing		
Essential Questions	<ul style="list-style-type: none"> • How does a battery produce electrical charge? • What are the conditions that allow electricity to flow? 	
Content	<ul style="list-style-type: none"> • Simple Circuits with different arrangements 	
Skills	<ul style="list-style-type: none"> • Use simple circuits to compare and predict the current flow with different circuit arrangements 	
Assessments	<ul style="list-style-type: none"> • Formative – topic probe, teacher observations, class discussions • Summative - Circuit model/lab 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Visual Aides • Manipulatives • Kinesthetic activities 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Writing – Lab Reports 	
Lesson resources / Activities	<ul style="list-style-type: none"> • MacMillan McGraw-Hill <u>Science</u> pgs. E91-E93 • Internet • Topic Probe • Circuit Boards 	
2009 NJCCCS		
Standard: 5.2 Physical Science		
Strand(s): D: Energy Transfer and Conservation		
Content Statement(s):	CPI # / CPI(s):	
The flow of current in an electric circuit depends upon the components of the circuit and their arrangement, such as in series or parallel. Electricity flowing through an electrical circuit produces magnetic effects in the wires.	5.2.6.D.1- Use simple circuits involving batteries and motors to compare and predict the current flow with different circuit arrangements.	