

Pine Hill Public Schools Curriculum

Content Area:	Science		
Course Title/ Grade Level:	Science / Grade 1		
Unit 1:	Life science	Month:	September-October
Unit 2:	Arctic winter	Month:	January-February
Unit 3:	Physical Science	Month:	March
Unit 4:	Growth & Conservation	Month:	April-May-June
Date Created or Revised:	6/18/2012 F. Glynn/ B. Sommers		
BOE Approval Date:	07/17/2012		

**Pine Hill Public Schools
Science Curriculum**

Unit Title: Life Science		Unit #: 1
Course or Grade Level: Science – Grade 1		Length of Time: 4 weeks
Pacing	September-October	
Essential Questions	<ul style="list-style-type: none"> • What changes occur during a life cycle? • How do we group living and nonliving things according to their characteristics? • How do organisms use their physical characteristics in different environments? • How do animals meet their energy needs (food)? 	
Content	<ul style="list-style-type: none"> • Plant life cycles (apples) • Living and nonliving things • Nocturnal animals (bats and owls) 	
Skills	<ul style="list-style-type: none"> • Sequence life cycle of an apple • Sort characteristics of living and nonliving things • Identify the basic anatomy of bats and owls • Compare /contrast defining characteristics of bats and owls • Compare/contrast how bats find food 	
Assessments	<ul style="list-style-type: none"> • Formative: teacher observation, anecdotal records, class assignments • Summative: oral responses 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Heterogeneous groups, visual prompts, small groups, individual help as needed 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Literature, charts and graphs, writing responses, Scholastic News 	
Lesson resources / Activities	<ul style="list-style-type: none"> • Sequencing activities, sorting activities, read alouds, Scholastic News, worksheets 	

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Standard:5.3 Life Science

**Strand(s): A. Organization and Development
B. Energy and Matter Transformations
E. Evolution and Diversity**

**5.3.2.A.1 Group living and nonliving things according to the characteristics that they share.
5.3.2.B.1 Describe the requirements for the care of plants and animals related to meeting their energy needs.
5.3.2.E.2 Describe how similar structures found in different organisms (e.g., eyes, ears, mouths) have similar functions and enable those organisms to survive in different environments.**

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Unit Title: Arctic winter		Unit #: 2
Course or Grade Level: Science – Grade 1		Length of Time: 6 weeks
Pacing	January-February	
Essential Questions	<ul style="list-style-type: none"> • What are the 3 different forms of matter? • What types of animals live in arctic habitats? • What special characteristics do arctic animals have? 	
Content	<ul style="list-style-type: none"> • Matter (solids, liquids, and gas) • Winter weather • Snow • Arctic habitats 	
Skills	<ul style="list-style-type: none"> • Sort objects based on their physical properties • Analyze how matter can change form • Identify animals that live in arctic habitats • Describe the characteristics of arctic habitats • Describe animal adaptations in arctic habitats • Discuss ways humans can protect animal habitats 	
Assessments	<ul style="list-style-type: none"> • Formative: teacher observation, anecdotal records, class assignments • Summative: oral responses 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Heterogeneous groups, visual prompts, small groups, individual help as needed 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Literature, charts and graphs, writing responses, Scholastic News 	
Lesson resources / Activities	<ul style="list-style-type: none"> • Sorting activity • Experiments with heating and cooling (water, wax, shortening) • Read alouds • Alaska Sealife Center video conference • Scholastic News 	
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Standard:5.2 Physical Science, 5.3 Life Science, 5.4 Earth Systems Science		
Strand(s): A. Properties of Matter, B. Changes in Matter, C. Interdependence, F. Climate and Weather,		
Content Statement(s): 5.2.2.A.1 Sort and describe objects based on the materials of which they are made and their physical properties. 5.2.2.A.2 Identify common objects as solids, liquids, or gases. 5.2.2.B.1 Generate accurate data and organize arguments to show that not all substances respond the same way when heated or cooled, using common materials, such as shortening or candle wax. 5.3.2.C.1 Describe the ways in which organisms interact with each other and their habitats in order to meet basic needs. 5.3.2.C.2 Identify the characteristics of a habitat that enable the habitat to support the growth of many different plants and animals. 5.4.2.F.1 Observe and document daily weather conditions and discuss how the weather influences your activities for the day. 5.3.2.C.3		

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Unit Title: Physical Science		Unit #: 3
Course or Grade Level: Science – Grade 1		Length of Time: 4 weeks
Pacing	March	
Essential Questions	<ul style="list-style-type: none"> • What are the effects of sunlight? • How do batteries affect the function of an object? • What materials are attracted to magnets? • How does force affect the motion of an object? 	
Content	<ul style="list-style-type: none"> • Shadows • Light • Magnets • Sound • Batteries • Force • Motion 	
Skills	<ul style="list-style-type: none"> • Compare the effects of sunlight on different colored objects • Demonstrate that when there is no light, objects cannot be seen (night and day) • Experiment with different solid shapes and the shadows that they cast • Predict the results of varying battery strengths (light, volume, brightness, heat) • Experiment with magnets and different materials • Predict the effects of various forces (wind) 	
Assessments	<ul style="list-style-type: none"> • Formative: teacher observation, anecdotal records, class assignments • Summative: oral responses 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Heterogeneous groups, visual prompts, small groups, individual help as needed 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Literature, charts and graphs, writing responses, Scholastic News 	
Lesson resources / Activities	<ul style="list-style-type: none"> • Construction paper experiment (fading), silhouettes, flashlights and solid shapes • Variety of batteries, objects that use batteries • Magnets and variety of different materials • Fans and various objects • Read alouds • Scholastic News 	

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Standard: 5.2 Physical Science, 5.4 Earth Systems Science

Strand(s): C. Forms of Energy, D. Energy Transfer and Conservation, E. Forces and Motion, A. Objects in the Universe

Content Statement(s): 5.2.2.C.1 Compare, citing evidence, the heating of different colored objects placed in full sunlight.
 5.2.2.C.2 Apply a variety of strategies to collect evidence that validates the principle that if there is no light, objects cannot be seen.
 5.2.2.C.3 Present evidence that represents the relationship between a light source, solid object, and the resulting shadow.
 5.2.2.D.1 Predict and confirm the brightness of a light, the volume of sound, or the amount of heat when given the number of batteries, or the size of batteries.
 5.2.2.E.2 Predict an object's relative speed, path, or how far it will travel using various forces and surfaces.
 5.2.2.E.3 Distinguish a force that acts by direct contact with an object (e.g., by pushing or pulling) from a force that can act without direct contact (e.g., the attraction between a magnet and a steel paper clip).
 5.4.2.A.1 Determine a set of general rules describing when the Sun and Moon are visible based on actual sky observations.

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Unit Title: Growth & Conservation		Unit #: 4
Course or Grade Level: Science – Grade 1		Length of Time: 6 weeks
Pacing	April-May-June	
Essential Questions	<ul style="list-style-type: none"> • What are the parts of a plant? • What are the basic needs of plants and animals? • What are the stages in the life cycles of plants and animals? • What physical characteristics do parents and offspring share? • What physical changes occur to water? • How can water be conserved? • What are the characteristics of Earth Materials? 	
Content	<ul style="list-style-type: none"> • Plants • Chick Life Cycle • Evaporation and Condensation • Water Conservation • Natural Resources • Earth Materials 	
Skills	<ul style="list-style-type: none"> • Label parts of a plant • Identify basic needs of a plant • Observe the stages of growth of plants and animals • Compare/contrast the similarities and differences of parents and offspring • Observe and discuss evaporation and condensation • Demonstrate ways water can be conserved • Identify how natural resources can be used to make manufactured products • Describe the characteristics of a variety of Earth materials (soil, rocks, water) 	
Assessments	<ul style="list-style-type: none"> • Formative: teacher observation, anecdotal records, class assignments • Summative: oral responses 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Heterogeneous groups, visual prompts, small groups, individual help as needed 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Literature, charts and graphs, writing responses, Scholastic News, 	
Lesson resources / Activities	<ul style="list-style-type: none"> • Grow seeds, plant journal, Quiver Farm Hatching project, make terrariums to observe evaporation and condensation, Scholastic News, read alouds 	

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Standard: 5.3 Life Science, 5.4 Earth Systems Science,

Strand(s): B. Matter and Energy Transformations, D. Heredity and Reproduction, E. Evolution and Diversity, C. Properties of Earth Materials, G. Biogeochemical Cycles

Content Statement(s): 5.3.2.B.3 Explain that most plants get water from soil through their roots and gather light through their leaves.
 5.3.2.D.1 Record the observable characteristics of plants and animals to determine the similarities and differences between parents and their offspring.
 5.3.2.D.2 Determine the characteristic changes that occur during the life cycle of plants and animals by examining a variety of species, and distinguish between growth and development.
 5.3.2.E.1 Describe similarities and differences in observable traits between parents and offspring.
 5.4.2.C.1 Describe Earth materials using appropriate terms, such as hard, soft, dry, wet, heavy, and light.
 5.4.2.G.1 Observe and discuss evaporation and condensation.
 5.4.2.G.2 Identify and use water conservation practices.
 5.4.2.G.3 Identify and categorize the basic needs of living organisms as they relate to the environment.
 5.4.2.G.4 Identify the natural resources used in the process of making various manufactured products.

6.1.4.B.5 Describe how human interaction impacts the environment in New Jersey and the United States. (see Social Studies Standards)
5.3.2.B.2
5.4.2.E.1