Pine Hill Public Schools Curriculum			
Content Area:	**Science**		
Course Title/ Grade Level:	Science / Grade 4		
Unit 1:	**Life Science**	Month:	**3weeks**
Unit 2:	**Weather**	Month:	**2 weeks**
Unit 3:	**Solar System**	Month:	**6 weeks**
Unit 4:	**Electricity**	Month:	**5 weeks**
Unit 5:	**Heat and Energy**	Month:	**5 weeks**
Date Created or Revised:	June 26, 2012		
BOE Approval Date:	8/28/12		

Pine Hill Public Schools Science Curriculum		
Unit Title: Life Science		**Unit #: 1**
Course or Grade Level: Science – Grade 4	**Length of Time: 3 weeks**	
Date Created: 6/26/12	**BOE Approval Date:**	
Pacing	3 weeks	
Essential Questions	▪ How do organisms interact in their ecosystems? ▪ How do organisms react to change? ▪ What are abiotic and biotic characteristics?	
Content	▪ Ecosystems ▪ Adaptations ▪ Interactions/consequences of systems ▪ Sources of energy ▪ abiotic and biotic characteristics ▪ succession	
Skills	▪ Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences. ▪ Use outcomes of investigations to build and refine questions, models, and explanations ▪ Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments. ▪ Design and follow simple plans using systematic observations to explore questions and predictions. ▪ Measure, gather, evaluate, and share evidence using tools and technologies. ▪ Formulate explanations from evidence. ▪ Communicate and justify explanations with reasonable and logical arguments. ▪ Monitor and reflect one's own knowledge regarding how ideas change over time ▪ Revise predictions or explanations on basis of learning new information ▪ Present evidence to interpret and/ or predict cause and effect outcomes of investigations ▪ Create a model of ecosystems in two different locations, and compare and contrast the living and nonliving components. ▪ Describe ways that humans can improve the health of ecosystems around the world. ▪ Evaluate similar populations in an ecosystem with regard to their ability to thrive and grow. ▪ Model an adaptation to a species that would increase its chances of survival, should the environment become wetter, dryer, warmer, or colder over time. ▪ Compare and contrast structures that have similar functions in various organisms, and explain how those functions may be carried out by structures that have different physical appearances. ▪ Describe the interactions of systems involved in carrying out everyday life activities. ▪ Identify sources of energy (food) in a variety of settings (farm, zoo, ocean, forest). ▪ Explain the consequences of rapid ecosystem change (e.g., flooding, wind storms, snowfall, volcanic eruptions), and compare them to consequences of gradual ecosystem change (e.g., gradual increase or decrease in daily temperatures, change in yearly rainfall). ▪ Predict the abiotic and biotic characteristics of an unfamiliar organism's habitat.	
Assessments	**Summative:** Tests, quizzes, projects, experiments **Formative:** teacher observations, learning log/science notebook, worksheets	
Interventions / differentiated instruction	• Group work • Visual clues • Diagrams • Posters	
Inter-disciplinary Connections	• Storytown-*Weaving a California Tradition(L9), Mimicry and Camouflage(L11), Mountains(L12), Fire Storm(L13), Grand Canyon: A Trail Through Time(L27)* • Math lesson on temperature • Storytown- L30 paired selection *Producers and Consumers*	
Lesson resources / Activities	• 4th grade Science Book- Unit B Ch 1, Ch 4 L6 • Distance Learning-Eat or Be Eaten from Alaska(Alaskan sealife)	
2009 NJCCCS		

Standard:	
Strand(s):	
Content Statement(s):	**CPI # / CPI(s):**
	5.1.4.A.1 , 5.1.4.A.2 , 5.1.4.A.3 , 5.1.4.B.1, 5.1.4.B.2, 5.1.4.B.3, 5.1.4.B.4, 5.1.4.C.1, 5.1.4.C.2, 5.1.4.C.3, 5.4.6.G.2 , 5.4.6.G.3, 5.3.4.C.1 5.3.4.E.1, 5.3.4.E.2, 5.3.4.A.2, 5.3.4.A.3 , 5.3.4.B.1, 5.3.4.C.2 ,

Pine Hill Public Schools Science Curriculum		
Unit Title: Weather		**Unit #: 2**
Course or Grade Level: Science – Grade 4	**Length of Time: 2 weeks**	
Date Created: 6/26/12	**BOE Approval Date:**	
Pacing	2 weeks	
Essential Questions	▪ How do clouds form? ▪ What are the different types of precipitation? ▪ What are the different types of weather instruments? ▪ What are the properties of water?	
Content	▪ Clouds/patterns ▪ Types of precipitation ▪ Temperature ▪ Water cycle ▪ Properties of water ▪ Weather instruments	
Skills	▪ Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences. ▪ Use outcomes of investigations to build and refine questions, models, and explanations ▪ Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments. ▪ Design and follow simple plans using systematic observations to explore questions and predictions. ▪ Measure, gather, evaluate, and share evidence using tools and technologies. ▪ Formulate explanations from evidence. ▪ Communicate and justify explanations with reasonable and logical arguments. ▪ Monitor and reflect one's own knowledge regarding how ideas change over time ▪ Revise predictions or explanations on basis of learning new information ▪ Present evidence to interpret and/ or predict cause and effect outcomes of investigations ▪ Explain how clouds form. ▪ Observe daily cloud patterns, types of precipitation, and temperature, and categorize the clouds by the conditions that form precipitation. ▪ Trace a path a drop of water might follow through the water cycle. ▪ Model how the properties of water can change as water moves through the water cycle. ▪ Identify patterns in data collected from basic weather instruments.	
Assessments	**Summative:** Tests, quizzes, projects, experiments **Formative:** teacher observations, learning log/science notebook, worksheets	
Interventions / differentiated instruction	• Diagrams • Posters • Group work • Visual clues	
Inter-disciplinary Connections	• Storytown- *Mountains(L12), Fire Storm(L13), Grand Canyon: A Trail Through Time(L27)* • Math lesson on temperature • Math lesson on graphs	
Lesson resources / Activities	• 4th grade science book: Unit D Ch 8 L1&2, Ch 9 L6&7 • Graphs of temperatures, precipitation	
2009 NJCCCS		
Standard:		
Strand(s):		
Content Statement(s):	**CPI # / CPI(s):**	
	5.1.4.A.1 , 5.1.4.A.2 , 5.1.4.A.3 , 5.1.4.B.1, 5.1.4.B.2, 5.1.4.B.3,	

	5.1.4.B.4, 5.1.4.C.1, 5.1.4.C.2, 5.1.4.C.3, 5.4.4.G.1 , 5.4.4.G.2 , 5.4.4.G.3, 5.4.4.G.4, 5.4.4.F.1

Pine Hill Public Schools Science Curriculum		
Unit Title: Solar System		**Unit #: 3**
Course or Grade Level: Science – Grade 4	**Length of Time: 6 weeks**	
Date Created: 6/26/12	**BOE Approval Date:**	
Pacing	6 weeks	
Essential Questions	▪ How does the daily motion of the Sun across the sky cause shadows? ▪ What are the phases of the moon? ▪ What are the objects in the solar system?	
Content	▪ Daily shadow description ▪ Moon patterns/position ▪ Solar system objects ▪ Gravity	
Skills	▪ Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences. ▪ Use outcomes of investigations to build and refine questions, models, and explanations ▪ Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments. ▪ Design and follow simple plans using systematic observations to explore questions and predictions. ▪ Measure, gather, evaluate, and share evidence using tools and technologies. ▪ Formulate explanations from evidence. ▪ Communicate and justify explanations with reasonable and logical arguments. ▪ Monitor and reflect one's own knowledge regarding how ideas change over time ▪ Revise predictions or explanations on basis of learning new information ▪ Present evidence to interpret and/ or predict cause and effect outcomes of investigations ▪ Formulate a general description of the daily motion of the Sun across the sky based on shadow observations. ▪ Identify patterns of the Moon's appearance and make predictions about its future appearance based observational data. ▪ Generate a model with explanatory value that explains both why objects roll down ramps as well as why the Moon orbits Earth. ▪ Analyze and evaluate evidence in the form of data tables and photographs to categorize and relate solar system objects (e.g., planets, dwarf planets, moons, asteroids, and comets).	
Assessments	**Summative:** Tests, quizzes, projects, experiments **Formative:** teacher observations, learning log/science notebook, worksheets	
Interventions / differentiated instruction	• Diagrams • Posters • Group work • Visual clues	
Inter-disciplinary Connections	• Math lesson on diameter • Math lesson on mass/weight • Math lesson on temperature • Creation of Moon Map/ Log	
Lesson resources / Activities	• Planet projects • Postcards(using information about individual planets) • Compare/contrast of 2 planets • 4th grade science book: Unit C ch 6&7 • Distance Learning with NASA-Solar Vacation • Flashlight activities-demonstration of sun and earth • Sun dials • Magic School Bus video-Solar System	
2009 NJCCCS		
Standard:		
Strand(s):		

Content Statement(s):	CPI # / CPI(s):
	5.1.4.A.1 , 5.1.4.A.2 , 5.1.4.A.3 , 5.1.4.B.1, 5.1.4.B.2, 5.1.4.B.3, 5.1.4.B.4, 5.1.4.C.1, 5.1.4.C.2, 5.1.4.C.3, 5.4.4.A.1 , 5.4.4.A.2 , 5.4.4.A.3, 5.4.4.A.4,

Pine Hill Public Schools Science Curriculum		
Unit Title: Electricity		**Unit #: 4**
Course or Grade Level: Science – Grade 4	**Length of Time: 5 weeks**	
Date Created: 6/26/12	**BOE Approval Date:**	
Pacing	5 weeks	
Essential Questions	▪ What are the different types of circuits? ▪ How do objects absorb or reflect light and conduct heat or electricity?	
Content	▪ Circuits-closed/open ▪ Light reflection	
Skills	▪ Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences. ▪ Use outcomes of investigations to build and refine questions, models, and explanations ▪ Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments. ▪ Design and follow simple plans using systematic observations to explore questions and predictions. ▪ Measure, gather, evaluate, and share evidence using tools and technologies. ▪ Formulate explanations from evidence. ▪ Communicate and justify explanations with reasonable and logical arguments. ▪ Monitor and reflect one's own knowledge regarding how ideas change over time ▪ Revise predictions or explanations on basis of learning new information ▪ Present evidence to interpret and/ or predict cause and effect outcomes of investigations ▪ Categorize objects based on the ability to absorb or reflect light and conduct heat or electricity. ▪ Repair an electric circuit by completing a closed loop that includes wires, a battery (or batteries), and at least one other electrical component to produce observable change.	
Assessments	**Summative:** Tests, quizzes, projects, experiments, creation of circuits **Formative:** teacher observations, learning log/science notebook, worksheets	
Interventions / differentiated instruction	• Diagrams • Posters • Group work • Visual clues	
Inter-disciplinary Connections	• Explanatory essay of how circuits function • relating to real world careers ie electricians	
Lesson resources / Activities	• 4th grade science book: Unit E ch 13 • Creating circuits •	
2009 NJCCCS		
Standard:		
Strand(s):		
Content Statement(s):	**CPI # / CPI(s):**	
	5.1.4.A.1 , 5.1.4.A.2 , 5.1.4.A.3 , 5.1.4.B.1, 5.1.4.B.2, 5.1.4.B.3, 5.1.4.B.4, 5.1.4.C.1, 5.1.4.C.2, 5.1.4.C.3, 5.2.4.A.4, 5.2.4.D.1	

Pine Hill Public Schools Science Curriculum		
Unit Title: Heat and Energy		**Unit #: 5**
Course or Grade Level: Science – Grade 4	**Length of Time: 5 weeks**	
Date Created: 6/26/12	**BOE Approval Date:**	
Pacing	5 weeks	
Essential Questions	▪ What are the different forms of energy? ▪ How does heat flow through metals and nonmetals? ▪ What happens when light travels from air into water?	
Content	▪ Forms of energy ▪ Metals/nonmetals ▪ Energy transference ▪ Travel of light ▪ Conductors/reflectors	
Skills	▪ Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences. ▪ Use outcomes of investigations to build and refine questions, models, and explanations ▪ Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments. ▪ Design and follow simple plans using systematic observations to explore questions and predictions. ▪ Measure, gather, evaluate, and share evidence using tools and technologies. ▪ Formulate explanations from evidence. ▪ Communicate and justify explanations with reasonable and logical arguments. ▪ Monitor and reflect one's own knowledge regarding how ideas change over time ▪ Revise predictions or explanations on basis of learning new information ▪ Present evidence to interpret and/ or predict cause and effect outcomes of investigations ▪ Compare various forms of energy as observed in everyday life and describe their applications. ▪ Compare the flow of heat through metals and nonmetals by taking and analyzing measurements. ▪ Draw and label diagrams showing several ways that energy can be transferred from one place to another. ▪ Illustrate and explain what happens when light travels from air into water. ▪ Categorize objects based on the ability to absorb or reflect light and conduct heat or electricity.	
Assessments	**Summative:** Tests, quizzes, projects, experiments **Formative:** teacher observations, learning log/science notebook, worksheets	
Interventions / differentiated instruction	• Diagrams • Posters • Group work • Visual clues	
Inter-disciplinary Connections	• Careers • Math lesson on temperature& measurement •	
Lesson resources / Activities	• 4th grade science book: Unit F ch 12 L1-4	
2009 NJCCCS		
Standard:		
Strand(s):		
Content Statement(s):	**CPI # / CPI(s):**	
	5.1.4.A.1 , 5.1.4.A.2 , 5.1.4.A.3 , 5.1.4.B.1, 5.1.4.B.2, 5.1.4.B.3, 5.1.4.B.4, 5.1.4.C.1, 5.1.4.C.2, 5.1.4.C.3, 5.2.4.C.1, 5.2.4.C.2, 5.2.4.C.3, 5.2.4.C.4, 5.2.4.A.4,	