CRAWFORDSVILLE COMMUNITY SCHOOL CORPORATION

GRADE LEVEL: FOURTH   **SUBJECT: SCIENCE**   **DATE: 2016-2017**

GRADING PERIOD: QUARTER 1

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	ISTEP
PHYSICAL SCIENCE					
• Transportation systems • Forces • Lift • Drag • Friction • Thrust • Gravity • Land • Water • Air • Space	**4.PS.1**: Investigate transportation systems and devices that operate on or in land, water, air and space and recognize the forces (lift, drag, friction, thrust and gravity) that affect their motion. **SEPS.7:** Engage in argument from evidence.	• Describe the forces of lift, drag, friction, thrust, and gravity. • Explain how these forces impact land, water, air, and space transportation. • Use reasoning and argument based on evidence. • Identify the best explanation for a natural phenomenon or the best solution to a design problem.	• Brain Pop: Flight • IXL: Force • Science notebook entry	• Transportation systems • Forces • Lift • Drag • Friction • Thrust • Gravity • Land • Water • Air • Space	YES+
• Speed • Energy	**4.PS.2:** Investigate the relationship of the speed of an object to the energy of that object. **SEPS.3:** Construct and perform investigations.	• Explain how an object's speed is related to the amount of energy in that object. • Construct and perform investigations in the field or laboratory. • Work collaboratively and individually.	• Brain Pop: Force • Science notebook entry • Cause/effect chart	• Speed • Energy • Potential energy • Kinetic Energy	YES

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	ISTEP
PHYSICAL SCIENCE					
	SEPS.3: (cont.)	• Evaluate to make changes and repeat investigation if necessary.			
• Simple machines	**4.PS.3:** Investigate how multiple simple machines work together to perform everyday tasks.	• Describe the six types of simple machines. • Identify examples of more than one simple machine working together. **(3-5.E.2)**	• Worksheet • Drawing a diagram • Brain Pop: Several on simple machines	• Inclined plane • Pulley • Wedge • Lever • Screw • Wheel & Axle • Work	YES
• Converted energy • Generated energy	**4.PS.4:** Describe and investigate the different ways in which energy can be generated and/or converted from one form of energy to another form of energy. **SEPS.1:** Posing questions (for science) and defining problems (for engineering)	• Describe different ways energy can be generated and converted. • Pose and refine questions that lead to descriptions and explanations of how the natural and designed world(s) work.	• Flow chart • Brain Pop: Wind Energy, Solar Energy, Natural Resources, Food Chain, Energy Pyramid • Science notebook • Class discussion	• Energy • Convert • Generate • Solar energy • Wind energy • Producers • Consumers • Food Chain • Food Web	YES+

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	ISTEP
PHYSICAL SCIENCE					
• Energy transfer	**4.PS.5:** Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. **SEPS.2:** Developing and using models and tools.	• Create an electric circuit that will transfer energy from a source to a receiver. • Demonstrate how energy can be transferred to make sound, light, and heat. **(3-5.E.1)** • Use and construct conceptual models that illustrate ideas and explanations.	• Classroom investigation • Science notebook	• Light energy • Sound energy • Heat energy • Electrical current • Conductor • Insulator • Circuit (open, closed, complete) • Receiver • Source	YES
3RD GRADE STANDARDS					

• Simple machines	**3.PS.2:** Identify types of simple machines and their uses. Investigate and build simple machines to understand how they are used.
	
	SEPS.2: Developing and using models and tools.
		• Create simple machines.
		• Use and construct conceptual models that illustrate ideas and explanations.
		
		• Use models to:
		  – Develop questions, predictions and explanations
		  – Analyze and identify flaws in systems
		  – Build and revise scientific explanations and proposed engineered systems
			• Classroom investigation
			• Science notebook
				• Inclined plane
				• Pulley
				• Wedge
				• Lever
				• Screw
				• Wheel & Axle
				• Work
					YES+

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	ISTEP
PHYSICAL SCIENCE					
3RD GRADE STANDARDS					
• Simple machines	**#PS.2: (cont.)** **SEPS.2: (cont.)**	– Communicate ideas			
• Sound energy	**3.PS.3:** Generate sound energy using a variety of materials and techniques, and recognize that it passes through solids, liquids, and gases (i.e. air). **SEPS.3:** Construct and perform investigations.	• Experiment with a variety of sounds using a variety of materials. • Describe how they interact with the various states of matter. **(3-5.E.3)** • Construct and perform investigations in the field or laboratory. • Evaluate to make changes and repeat investigation if necessary.	• Classroom investigation • Science notebook • Brain Pop Jr.: Sound	• Sound energy • Solid • Liquid • Gas	YES+
• Properties of sound	**3.PS.4:** Investigate and recognize properties of sound that include pitch, loudness (amplitude), and vibration as determined by the physical properties of the object making the sound. **SEPS.8**: Obtain, evaluate, and communicate information.	• Describe how the properties of sound change according to the physical properties of objects. • Communicate information and ideas in multiple ways: – Tables – Diagrams	• Classroom investigation • Science notebook • Brain Pop Jr.: Sound	• Pitch • Loudness • Amplitude • Vibration	YES+

CRAWFORDSVILLE COMMUNITY SCHOOL CORPORATION

GRADE LEVEL: FOURTH **SUBJECT: SCIENCE** **DATE: 2016-2017**

GRADING PERIOD: QUARTER 2

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	ISTEP
LIFE SCIENCE					
• Heredity • Inherited traits • Physical Characteristics • Survival	**4.LS.1:** Observe, analyze, and interpret how offspring are very much, but not exactly, like their parents or one another. Describe how these differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.	• Compare the similar characteristics of parents and offspring. • Explain how the differences in physical characteristics allow animals to adapt, reproduce, and survive.	• Class discussion • Science notebook • IXL: Traits and Heredity • BrainPOP: Heredity • Superteacher	• Heredity • Physical Characteristic • Trait • Parent • Offspring • Survival • Reproduction • Gene	YES+

• Environmental changes
 • Plant survival
 • Animal survival
 • Adaptation
	4.LS.2: Use evidence to support the explanation that a change in the environment may result in a plant or animal will survive and reproduce, move to a new location, or die.
	
	 SEPS.7: Engage in argument from evidence.
		• Identify the environmental changes that support the following:
		   – Survival
		   – Reproduction
		   – Relocation of an organism
		
		 • Use reasoning and argument based on evidence.
		 • Identify the best explanation for a natural phenomenon or the best solution to a design problem.
			• Class discussion
			 • Science notebook
			 • IXL: Adaptation
			 • Superteacher
				• Environment
				 • Plant survival
				 • Animal survival
				 • Adaptation
					YES+

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	ISTEP
LIFE SCIENCE					
• Adaptation • Animal behavior • Animal and plant survival • Animal and plant growth • Animal and plant reproduction	**4.LS.3:** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction in different ecosystems. **SEPS.7:** Engage in argument from evidence.	• Give examples of how internal structures support plant and animal survival. • Give examples of how external structures support plant and animal survival, growth, and behavior. • Use reasoning and argument based on evidence. • Identify the best explanation for a natural phenomenon or the best solution to a design problem.	• Class discussion • Science notebook • IXL: Animals • IXL: Plants • BrainPOP: Camouflage	• Adaptation • Survival • Growth • Behavior • Reproduction	YES
3rd GRADE STANDARDS					YES+
• Heredity • Plant traits • Animal traits	**3.LS.1:** Analyze evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. **SEPS.3:** Construct and perform investigations.	• Identify and describe the inherited plant and animal traits passed from parent to offspring. • Investigate and explain how plant traits are passed on and how these traits often appear in similar plants. • Construct and perform investigations in the field or laboratory.	• Investigation • Diagrams • Drawings • Worksheets • Quiz	• Inherited • Traits • Organisms	

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	ISTEP
LIFE SCIENCE					
3RD GRADE STANDARDS					

• Heredity
• Plant traits
• Animal traits
	3.LS.1: (cont.)
	
	SEPS.3: (cont.)
	
	SEPS.7: Engage in argument from evidence.
		• Construct investigations:
		  – Encompass identified variable and parameters
		  – Generate quality data
		
		• Monitor and record progress.
		
		• Use reasoning and argument based on evidence.
		• Identify the best explanation for a natural phenomenon or the best solution to a design problem.			

• Organism needs	**3.LS.2:** Plan and conduct an investigation to determine the basic needs of plants to grow, develop, and reproduce.
	
	SEPS.3: Construct and perform investigations.
		• Investigate the following needs of plants:
		  – Growth
		  – Development
		  – Reproduction
		(3-5.E.3)
		
		• Construct and perform investigations in the field or laboratory.
		• Construct investigations:
		  – Encompass identified variable and parameters
		  – Generate quality data
			• Investigation
			• Science notebook
			• Quiz
				• Plant
				• Growth
				• Development
				• Reproduction
					YES+

3

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY/ KEY TERMS	ISTEP
LIFE SCIENCE					
3RD GRADE STANDARDS					
	LS.2: (cont.) SEPS.3: (cont.) SEPS.5: Use mathematics and computational thinking.	• Monitor and record progress. • Recognize, express and apply quantitative relationships. • Predict the behavior of systems and test the validity of such predictions.			

CRAWFORDSVILLE COMMUNITY SCHOOL CORPORATION

GRADE LEVEL: FOURTH   **SUBJECT: SCIENCE**   **DATE: 2016-2017**

GRADING PERIOD: QUARTER 3

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ISTEP
EARTH AND SPACE SCIENCE					
• Moon • Earth • Solar eclipse • Lunar eclipse	**4.ESS.1:** Investigate how the moon appears to move through the sky and it changes day to day, emphasizing the importance of how the moon impacts the Earth, the rising and setting times, and solar and lunar eclipses. **SPES.6:** Construct explanations (for science) and design solutions (for engineering).	• Describe the phases of the moon. • Explain why the moon appears different in the sky depending on its position. • Define solar and lunar eclipse. • Connect the investigation to how the natural and designed world works.	• Class discussion • BrainPOP moon, moon phases, eclipse • Science notebook • Diagrams	• Moon • Sun • • Earth • Planet • Solar eclipse • Lunar eclipse	YES+
• Energy • Natural resources • Fossil fuels • Environment	**4.ESS.2:** Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. **SEPS.7:** Engage in argument from evidence	• Identify natural resources and fossil fuels. • Distinguish the difference between renewable and nonrenewable resources. • Explain how the use of natural resources can affect the environment. • Use reasoning and argument based on evidence. o	• T-chart • Presentation • BrainPOP natural resources, fossil fuels • Quiz	• Energy • Natural resources • Fossil fuels • Environment	YES+

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ISTEP
EARTH AND SPACE SCIENCE					
• Argumentation Process	**4.ESS.2: (cont.)**	• Identify the best explanation for a natural phenomenon or the best solution to a design problem. • Explain the process of argumentation and how it is used to reach evidence-based conclusions and solutions.		• Argumentation	

• Geological forces	**4.ESS.3:** Describe how geological forces change the shape of the land suddenly and over time.	• Identify the geological forces that can shape the land:
		  − Water
		  − Wind
		  − Ice
		• Describe the differences between sudden changes to the Earth's surface and changes that happen over time.
		• Identify solutions to prevent a negative geological impact. **(3-5.E.1, 3-5.E.2)**
			• Cooperative group investigations
			• Science notebook
			• Diagrams
			• Quiz
				• Geological forces
				• Glaciers
				• Landform
				• Erosion
				• Weathering
				• Deposition
				• Mudslide
				• Earthquake
				• Volcano
					YES

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ISTEP
EARTH AND SPACE SCIENCE					
• Geological Forces	**4.ESS.3: (cont.)** **SEPS.3:** Construct and perform investigations.	• Construct and perform investigations in the field or laboratory. • Work collaboratively and individually. • Monitor and record progress. • Evaluate to make changes and repeat investigation if necessary			

• Natural Environment
• Environmental Impact
	4.ESS.4: Develop solutions that could be implemented to reduce the impact of humans on the natural environment and the natural environment on humans.	• Describe our natural environment:
		    -biosphere (plants and animals)
		    -hydrosphere (water in, on, around the Earth)
		• Explain what it means to have a negative impact on the environment.
		• Identify solutions that would reduce impact people have on the environment.
		(3-5.E.1, 3-5.E.2)
			• Class discussion
			• Presentations
			• BrainPOP humans and the environment
			• Quiz
				• Natural Environment
				• Pollution
				• Environmental impact
				• Biosphere
				• Hydrosphere
				• Reduce
				• Reuse
				• Recycle
				• Rethink
				• Conservation
					YES

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ISTEP
EARTH AND SPACE SCIENCE					
• Environmental Impact	**4.ESS.4: (cont.)** **SEPS.1:** Posing questions (for science) and defining problems (for engineering).	**Science** • Pose and refine questions that lead to descriptions and explanations of how the natural and designed world(s) work. • Questions can be scientifically tested. **Engineering** • Questions clarify problems. • Determine criteria for possible solutions.			
3RD GRADE STANDARDS					

• Rocks
• Minerals
	3.ESS.3: Observe the detailed characteristics of rocks and minerals. Identify and classify rocks as being composed of different combinations of minerals.
	
	SEPS.8: Obtain, evaluate, and communicate information
		• Explain that rocks are made up of a combinations of minerals.
		• Identify the three types of rocks:
		    -sedimentary
		    -igneous
		    -metamorphic
		• Classify rocks based on their physical properties.
		
		• Critique and communicate ideas individually and in groups.
			• Classroom investigations
			• Graphic organizers
			• Class discussion
			• Quiz
				• Rocks
				• Minerals
				• Physical properties
				• Sedimentary
				• Igneous
				• Metamorphic
					YES+

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ISTEP
EARTH AND SPACE SCIENCE					
3RD GRADE STANDARDS					

• Rocks
• Minerals
	3.ESS.3: (cont.)
	
	SEPS.8: (cont.)
		• Communicate information and ideas in multiple ways:
		  – Tables
		  – Diagrams
		  – Graphs
		  – Models
		  – Equations
		  – Orally
		  – Writing
		  – Extended discussions
		• Employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.			

• Fossils	**3.ESS.4:** Determine how fossils are formed, discovered, layered over time, and used to provide evidence of the organisms and the environments in which they lived long ago. **SEPS.7:** Engage in argument from evidence	• Explain how fossils are formed. • Use evidence to describe what fossils teach us about the living environment long ago. • Use reasoning and argument based on evidence.	• BrainPOP fossils • Class discussions • IXL Fossils	• Fossils	YES+

CRAWFORDSVILLE COMMUNITY SCHOOL CORPORATION

GRADE LEVEL: FOURTH   **SUBJECT: SCIENCE**   **DATE: 2016-2017**

GRADING PERIOD: QUARTER 4

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ISTEP
• Problem solving • Design	**3-5.E.1:** Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.	• Identify a problem with the design of an object. • Apply a solution that addresses constraints put on materials, time, or cost.	• Investigation • Presentation • Science notebook • Diagram • Written summary	• Need • Want • Problem • Solution • Cost	
• Problem solving	**3-5.E.2:** Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	• Compare and contrast solutions to a problem. • Identify which solution will best meet the criteria and restrictions of the problem.	• Investigation • Presentation • Science notebook • Diagram • Written summary	• Plausible solution • Criteria • Constraints	
• Fair investigations • Variables	**3-5.E.3:** Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.	• Construct an investigation with a controlled variable and independent/ dependent variables. • Identify aspects of a model that could be improved.	• Investigation • T-chart • Science notebook	• Fair investigations • Independent variable • Dependent variable • Controlled variable	