

Salisbury Township School District

Course Guide

Name:	Science
Grade(s):	4 th
Length:	<i>Place an X next to the correct option</i>
	Full-Year (180 Sessions)
X	Semester (90 Sessions) Approximately 113 Lessons
	Quarter (45 Sessions)
	Other (Specify):
Text:	N/A
Approved on:	

Six thematic units of study:

- Unit 1: Human Machine
- Unit 2: Animal and Plant Adaptations
- Unit 3: The Birth of Rocks
- Unit 4: Waves of Sound
- Unit 5: Energizing Everything
- Unit 6: Electricity, Light, and Heat

Science- 4th Grade

Unit 1: Human Machine: Human Body, Vision, and the Brain

Unit Length: 19 Sessions (30-40 Minutes Each)

Science-4th Grade

Unit 2: Animal & Plant Adaptations

Unit Length: 12 Sessions (30-40 Minutes Each)

ESSENTIAL QUESTION- ESSENTIAL CONTENT		PERFORMANCE OBJECTIVES	STANDARDS	ASSESSMENT/ACTIVITY	
How do plants and animals adapt to survive in their environments? How do changes in an ecosystem affect the plants and animals that live there?	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	3.1.4.A. (LS1.A) 3.1.4.B. (LS1.D)	Mystery Science		
			Up in the Trees (Phenomenon)	3.1.4.A.	
			Why do some sea creatures look so strange?	3.1.4.A.	
			Why would a sea turtle eat a plastic bag?	3.1.4.B.	
			Why don't the same trees grow everywhere?	3.1.4.A.	
			How do sloths survive? (Performance Task)	3.1.4.A.	
Science and Engineering Practices (SEP)		Disciplinary Core Ideas (DCI)		Crosscutting Concepts (CCC)	
Constructing Explanations and Designing Solutions: Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem. Engaging in Argument From Evidence:		LS1.A: Structure and Function LS1.D: Information Processing		Systems and System Models	

Construct an argument with evidence to support a claim.		
Developing and Using Models: Use a model to represent relationships in the natural world.		

Science-4th Grade

Unit 3: Birth of Rocks: Earth's Features and Processes

Unit Length: 25 Sessions (30-40 Minutes Each)

ESSENTIAL QUESTION- ESSENTIAL CONTENT	PERFORMANCE OBJECTIVES	STANDARDS	ASSESSMENT/ACTIVITY	
How do natural processes like erosion, earthquakes, and volcanoes shape Earth's surface? How do humans impact Earth's features and how can we reduce negative effects?	Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. Analyze and interpret data from maps to describe patterns of Earth's features. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	3.3.4.C. (ESS2.B) 3.3.4.A. (ESS1.C) 3.3.4.B. (ESS2.A & ESS2.E) 3.3.4.E. (ESS3.B & ETS1.B)	Mystery Science	
			Fossil Finds (Phenomenon)	
			Could a volcano pop up where you live?	3.3.4.C.
			Why do some volcanoes explode?	3.3.4.A.
			Will a mountain last forever?	3.3.4.B.
			What did your town look like 1000 million years ago?	3.3.4.A.
			How could you survive a landslide?	3.3.4.E.
			How can you figure out where a rock came from? (Performance)	

			Task)	
Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)		
Constructing Explanations and Designing Solutions: Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem. Planning and Carrying Out Investigations: With guidance, plan and conduct an investigation in collaboration with peers. Engaging in Argument From Evidence: Construct an argument with evidence to support a claim. Analyze and Interpret Data: Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. Developing and Using Models: Use a model to represent relationships in the natural world.	ESS2.B Plate Tectonics and Large-Scale System Interactions ESS1.C: The History of Planet Earth ESS2.A: Earth Materials and Systems ESS2.E: Biogeology ESS3.B: Natural Hazards ETS1.B: Designing Solutions to Engineering Problems	Patterns Cause and Effect		

Science- 4th Grade

Unit 4: Waves of Sound: Sounds, Waves, and Communication

Unit Length: 19 Sessions (30-40 Minutes Each)

ESSENTIAL QUESTION- ESSENTIAL CONTENT	PERFORMANCE EXPECTATIONS	STANDARDS	ASSESSMENT/ACTIVITY	
How do sound and light waves help us communicate and interact with the world?		3.2.4.G. (PS4.C & ETS1.C) 3.2.4.E. (PS4.A & ETS1.B)	Mystery Science	
			(Phenomenon)	
			How do you send a secret code?	3.2.4.G.
			How far can a whisper travel?	3.2.4.E.
			What would happen if you screamed in outer space?	3.2.4.E.
			Why are some sounds high and some sounds low?	3.2.4.E.
			(Performance Task)	
Science and Engineering Practices (SEP)		Disciplinary Core Ideas (DCI)		Crosscutting Concepts (CCC)
Constructing Explanations and Designing Solutions: Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific		PS4.C: Information Technologies and Instrumentation ETS1.C: Optimizing the Design		Patterns

problem. Developing and Using Models: Use a model to represent relationships in the natural world. Planning and Carrying Out Investigations: Scientists use different ways to study the world. Make observations (firsthand or from media) to collect data that can be used to make comparisons.	Solution PS4.A: Wave Properties ETS1.B: Developing Possible Solutions	
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Science- 4th Grade

Unit 5: Energizing Everything: Energy and Energy Transfer

Unit Length: 25 Sessions (30-40 Minutes Each)

ESSENTIAL QUESTION- ESSENTIAL CONTENT	PERFORMANCE EXPECTATIONS	STANDARDS	ASSESSMENT/ACTIVITY	
How does energy move from one place to another? How do we use energy in our daily lives?		3.2.4.A. (PS3.A & PS3.B) 3.2.4.C. (PS3.A, PS3.B & PS3.C) 3.2.4.D. (PS3.A, PS3.B, PS3.C, ETS1.A, ETS1.B & ETS1.C)	Mystery Science	
			(Phenomenon)	
			How is your body similar to a car?	3.2.4.A.
			What makes roller coasters go so fast?	3.2.4.A.
			How can marbles save the world?	3.2.4.C.
			Could you knock down a building using only dominoes?	3.2.4.D.
			Can you build a chain reaction machine?	3.2.4.D.
			(Performance Task)	
Science and Engineering Practices (SEP)		Disciplinary Core Ideas (DCI)		Crosscutting Concepts (CCC)
Constructing Explanations and Designing		PS3.A: Definitions of Energy		Energy and Matter

Solutions: Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem. Developing and Using Models: Use a model to represent relationships in the natural world. Analyze and Interpret Data: Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. Asking Questions and Defining Problems: Ask questions based on observations to find more information about the designed world.	PS3.B: Conservation of Energy and Energy Transfer PS3.C: Relationship Between Energy and Forces ETS1.A: Defining and Delimiting Engineering Problems ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution	Systems and System Models
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Science- 4th Grade

Unit 6: Electricity, Light & Heat

Unit Length: 13 Sessions (30-40 Minutes Each)

ESSENTIAL QUESTION- ESSENTIAL CONTENT	PERFORMANCE EXPECTATIONS	STANDARDS	ASSESSMENT/ACTIVITY	
How does electricity power the things we use? How do light and heat interact with different materials?		3.3.4.D. (ESS3.A) 3.2.4.B. (PS3.B, PS3.D, ETS1.A, ETS1.B, ETS1.C) 3.2.4.D. (PS3.B, PS3.D, ETS1.A, ETS1.B, ETS1.C)	Mystery Science	
			(Phenomenon)	
			What's the best way to light up a city?	3.3.4.D.
			What if there were no electricity?	3.2.4.B. 3.2.4.D.
			How long did it take to travel across the country before cars and planes?	3.2.4.B. 3.2.4.D.
			(Performance Task)	
Science and Engineering Practices (SEP)		Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)	
Constructing Explanations and Designing Solutions: Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem. Developing and Using Models: Use a		ESS3.A: Natural Resources PS3.B: Conservation of Energy and Energy Transfer PS3.D: Energy in Chemical Processes and Everyday Life	Energy and Matter Cause and Effect	

model to represent relationships in the natural world. Obtaining, Evaluating, and Communicating Information: Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. Read grade appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world. Planning and Carrying Out Investigations: Scientists use different ways to study the world. Make observations (firsthand or from media) to collect data that can be used to make comparisons. Using Mathematics and Computational Thinking: xxx	ETS1.A: Defining and Delimiting Engineering Problems ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution	
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