ELEMENTARY SCIENCE GRADE 5 CURRICULUM

Course 50520

Fifth grade students will review some of the basic principles and practices of science. They will learn vocabulary and principles in a variety of topics from biology, physical science, Earth science, and ecology. Student will conduct simple investigations posing questions, making observations, using scientific tools, collecting data and posing conclusions. Students will use pictures, charts, diagrams, models, and maps to understand and represent scientific concepts.

FIFTH GRADE SCIENCE OUTLINE:

Goals	Skills	Summative Assessments	Time Frame	Main Resources
 To gain an understanding of problem solving and technological design processes. Classify organisms based on characteristics. Become familiar with some basic structures and systems within living organisms. Learn about ecosystems and change within them over time. Explore what makes a healthy ecosystem and what activities can negatively affect an ecosystem. Learn the characteristics of matter. To gain an understanding of the laws of motion. Know different forms of energy and the laws of energy. 	 Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results Observe and record change by using time and measurement. Generate questions about objects, organisms, or events that can be answered through scientific investigations. Select appropriate tools for making observations. 	Unit Tests	1-year	Daily Science Grade 5

FIFTH GRADE SCIENCE MAP:

TIME	BIG IDEAS	CONCEPTS	ESSENTIAL	STANDARDS	OBJECTIVES	DIFFERENTIATI	ASSESSMENT
FRAME			QUESTIONS			ON	
Chapter 1 (Weeks 1-3)	Technological design is a creative process that anyone can do which may result in new inventions and innovations.	1. What do scientists do? 2. How do scientists investigate? 3. How do scientist collect and interpret data? 4. How do scientist support their conclusions?	What steps are involved in technological design and problem solving when creating inventions and innovations?	Understand how theories are developed. Identify questions that can be answered through scientific investigations and evaluate the appropriateness of questions. Design and conduct a scientific investigation and understand that current scientific knowledge guides scientific investigations. Describe relationships using inference and prediction. Use appropriate tools and technologies to gather, analyze, and interpret data and understand that it enhances accuracy and allows scientists to analyze and quantify results of investigations. Develop descriptions, explanations, and models using evidence and understand that these emphasize evidence, have logically consistent arguments, and are based on scientific principles, models, and theories. Analyze alternative explanations and understanding that science advances through legitimate skepticism. Use mathematics in all aspects of scientific inquiry. Understand that scientific investigations may result in new ideas for study, new methods, or procedures for an investigation or new technologies to improve data collection. S3.A.1.1.1 Distinguish between fact and opinion. S5.A.1.1.1	The students will be able to: • Apply knowledge of scientific investigation or technological design to make inferences and solve problems.	one-on-one instruction modified tests modified testing locations guided notes selective grouping use of technology	unit worksheets teacher observation experiments Summative: Unit Test

Explain how certain questions can be answered through scientific inquiry and/or technological design (e.g., investigate to find out if all clay or foil boats designs react the same when filled with paperclips). S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship (e.g., make a claim based on information on a	
graph). S5.A.1.1.3 Describe how explanations, predictions, and models are	
developed using evidence. S5.A.2.1.1 Design a simple, controlled experiment (fair test) identifying the independent and dependent variables, how the dependent	
variable will be measured and which variables will be held constant (e.g., relate the effect of variables [mass, release height, length of string] to number of swings of a pendulum, investigate the relationships between variables in paper airplane designs).	
S5.A.2.1.2 Describe relationships between variables through interpretation of data and observations (i.e., make predictions for the outcome of a controlled experiment using data tables and graphs).	
S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions (e.g., use a	

 T T	
	thermometer to observe and
	compare the interaction of food
	coloring in water at different
	temperatures).
	S5.A.2.2.2
	Explain how technology extends
	and enhances human abilities for
	specific purposes (e.g., use hand
	lens to examine crystals in
	evaporation dishes; use
	graduated cylinders to measure
	the amount of water used in a
	controlled plant experiment).
	S5.A.3.1.1
	Make predictions based on
	patterns in natural systems (e.g.,
	phases of the Moon, time [day,
	month, and year], weather,
	seasons).
	S5.A.3.2.1
	Describe how models are used
	to better understand the
	relationships in natural systems
	(e.g., water cycle, Sun-Earth-
	Moon system, ecosystems,
	observe and draw a diagram to
	show the effects of flowing water
	in a watershed).
	S6.A.1.1.1
	Explain how certain questions
	can be answered through
	scientific inquiry and/or
	technological design (e.g.,
	consumer product testing,
	common usage of simple
	machines, modern inventions).
	S6.A.1.1.2
	Use evidence to support
	inferences and claims about an
	investigation or relationship (e.g.,
	common usage of simple
	machines).
	S6.A.1.1.3

			1	Predict the outcome of an		1	1
				experiment based on previously			
				collected data.			
Chapter 2	Technology is	1. What is	What methods	3.4.5.B1	The students will be	one-on-one	unit
(Weeks 4-	created, used	technology?	do humans	Explain how the use of	able to:	instruction	
6)	and modified by	2. How does	employ to	technology can have unintended	Explain how certain	inou doubli	worksheets
0)	humans.	technology	create, use,	consequences.	questions can be	modified tests	
	Tramano.	mimic living	and modify	concequences.	answered through	modified toolo	teacher
		things?	technologies?		scientific inquiry	modified testing	
		3. What is the	1000109.001		and/or	locations	observation
		design			technological		
		process?			design (e.g.,	guided notes	experiments
		F			investigate to find	garaca	
					out if all clay or foil	selective grouping	
					boats designs react		Summative:
					the same when	use of technology	- Unit Test
					filled with		
					paperclips).		
					Describe		
					relationships		
					between variables		
					through		
					interpretation of		
					data and		
					observations (i.e.,		
					make predictions		
					for the outcome of a		
					controlled		
					experiment using		
					data tables and		
					graphs).		
					Explain how		
					technology extends		
					and enhances		
					human abilities for		
					specific purposes		
					(e.g., use hand lens		
					to examine crystals		
					in evaporation		
					dishes; use		
					graduated cylinders		
					to measure the		
					amount of water		
					used in a controlled		
					plant experiment).		
					Describe how		
					models are used to		
					better understand		
					the relationships in		
					natural systems		
					(e.g., water cycle,]

					Sun-Earth- Moon		
					system,		
					ecosystems,		
					observe and draw a		
					diagram to show		
					the effects of		
					flowing water in a		
					watershed).		
Chapter 3	Aquatic,	1. How do we	How do	4.1.5.D	The students will be	one-on-one	unit worksheets
(Weeks 7-	terrestrial and	classify living	ecosystems	Explain the differences between	able to:	instruction	
9)	human-made	things?	differ and	threatened, endangered, and	Describe		teacher
	ecosystems	How do we classify	change over time?	extinct organisms.	relationships	modified tests	observation
	consist of diverse living and non-	animals?	ume?	4.4.5.C	between variables through	modified testing	experiments
	living	3. How do we		Investigate the factors	interpretation of	locations	охропшоню
	components that	classify plants?		influencing plant and animal	data and	1000110110	Summative:
	change over time	4. How can a key		growth. (e.g., soil, water,	observations (i.e.,	guided notes	Unit Test
	and among	help you		nutrients, and light)	make predictions		
	geographic	identify and			for the outcome of a	selective grouping	
	areas.	classify?		BIO.B.4.1.2	controlled		
				Describe characteristic biotic and	experiment using	use of technology	
				abiotic components of aquatic	data tables and		
				and terrestrial ecosystems.	graphs).		
				BIO.B.4.2.5			
				Describe the effects of limiting			
				factors on population dynamics			
				and potential species extinction.			
Chapter 4	 The survival of 	1. What are some	How do	3.1.5.A3	The students will be	one-on-one	unit worksheets
(Weeks	living things is	physical	adaptations	Compare and contrast the	able to:	instruction	
10-12)	dependent upon	structures in	enable an	similarities and differences in life	Describe		teacher
	their adaptations	living things?	organism to	cycles of different organisms.	relationships	modified tests	observation
	and ability to	2. How do	survive?	0.4.5.04	between variables		
	respond to	adaptations		3.1.5.C1	through	modified testing	experiments
	natural changes	help plants? 3. How do		Describe how organisms meet	interpretation of	locations	Summative:
	in and human influences on the	adaptations		some of their needs in an environment by using behaviors	data and observations (i.e.,	guided notes	Unit Test
	environment.	help animals?		(patterns of activities) in	make predictions	guided fioles	Offic 163t
	environinent.	4. What are some		response to information (stimuli)	for the outcome of a	selective grouping	
		life cycles of		received from the environment.	controlled	- 5.00m. 0 grouping	
		animals?			experiment using	use of technology	
				3.1.5.C2	data tables and		
				Give examples of how inherited	graphs).		
				characteristics (e.g., shape of	• S.5.A.3.1.1 Make		
				beak, length of neck, location of	predictions based		
				eyes, shape of teeth) may	on patterns in		
				change over time as adaptations	natural systems		
				to changes in the environment	(e.g., phases of the		
				that enable organisms to survive.	Moon, time [day,		
				S5 A 1 1 1	month, and year],		
				S5.A.1.1.1	weather, seasons).		

Explain how certain questions can be answered through scientific inquiry and/or • Describe how models are used to better understand
technological design (e.g., the relationships in investigate to find out if all clay or natural systems
foil boats designs react the same when filled with paperclips). (e.g., water cycle, Sun-Earth- Moon system,
S5.A.1.1.2 Explain how observations and/or experimental results are used to support inferences and claims about an investigation or relationship (e.g., make a claim based on information on a graph). ecosystems, observe and draw a diagram to show the effects of flowing water in a watershed). • Differentiate between inherited and acquired traits
S5.A.1.1.3 (e.g., scars, injuries). predictions, and models are (e.g., scars, injuries). • Explain how
S5.A.2.1.1 Design a simple, controlled experiment (fair test) identifying the independent variables, how the dependent variable will be measured and which variables will be held constant (e.g., relate the effect of variables [mass, release height, length of string] to number of swings of a pendulum, investigate the relationships between variables in paper airplane designs). inherited traits help organisms survive and reproduce in different environments. Explain how certain behaviors help organisms survive and reproduce in different environments. Explain how certain behaviors help organisms survive and reproduce in different environments. Explain how certain behaviors help organisms survive and reproduce in different environments. Explain how certain behaviors help organisms survive and reproduce in different environments. Explain how certain behaviors help organisms survive and reproduce in different environments.
S5.A.2.1.2 Describe relationships between variables through interpretation of data and observations (i.e., make predictions for the outcome of a controlled experiment using data tables and graphs).
S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions (e.g., use a

thermometer to observe and compare the interaction of food coloring in water at different temperatures).
S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes (e.g., use hand lens to examine crystals in evaporation dishes; use graduated cylinders to measure the amount of water used in a controlled plant experiment).
S5.A.3.1.1 Make predictions based on patterns in natural systems (e.g., phases of the Moon, time [day, month, and year], weather, seasons).
S5.A.3.2.1 Describe how models are used to better understand the relationships in natural systems (e.g., water cycle, Sun-Earth-Moon system, ecosystems, observe and draw a diagram to show the effects of flowing water in a watershed).
S5.B.1.1.1 Recognize that all organisms are composed of cells.
S5.B.1.1.2 Explain the concept of the cell as the basic structural unit of all living things.
S5.B.1.1.3 Compare the structure and function of basic cell parts in organisms (i.e., plants and animals).
S5.B.2.1.1 Differentiate between inherited and acquired traits (e.g., scars, injuries).

				S5.B.2.1.2 Explain how inherited traits help organisms survive and reproduce in different environments. S5.B.2.1.3 Explain how certain behaviors help organisms survive and reproduce in different environments. S5.B.2.1.4 Identify changes in environmental conditions that can affect the survival of populations and entire species.			
				S5.B.3.1.1 Describe the roles of producers, consumers, and decomposers within a local ecosystem.			
				S5.B.3.1.2 Describe the relationships between organisms in different food webs.			
				S5.B.3.2.1 Identify fossil fuels and alternative fuels used by humans.			
				S5.B.3.2.2 Describe the usefulness of Earth's physical resources as raw materials for the humanmade world.			
				S5.B.3.2.3 Explain how different items are recycled and reused.			
Chapter 5 (Weeks 13-15)	The health of all living things is directly related to the quality of the environment.	circulatory system? 2. What is the respiratory system? 3. What are the	How does the quality of environments affect the health of living things?	3.4.5.E1 Identify how technological advances have made it possible to create new devices and to repair or replace certain parts of the human body.	Students will be able to: Describe relationships between variables through interpretation of	one-on-one instruction modified tests modified testing locations	unit worksheets teacher observation experiments
		skeletal muscular systems?		S5.A.1.1.1 Explain how certain questions can be answered through	data and observations (i.e.,	guided notes	Summative: Unit Test

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4. What is the	scientific inquiry and/or	make predictions	selective grouping	
nervous	technological design (e.g.,	for the outcome of a		
system what	investigate to find out if all clay or	controlled	use of technology	
are some other	foil boats designs react the same	experiment using		
systems?	when filled with paperclips).	data tables and		
		graphs).		
	S5.A.1.1.2	 Describe how 		
	Explain how observations and/or	models are used to		
	experimental results are used to	better understand		
	support inferences and claims	the relationships in		
	about an investigation or	natural systems		
	relationship (e.g., make a claim based on information on a	(e.g., water cycle,		
		Sun-Earth- Moon		
	graph).	system,		
	S5.A.1.1.3	ecosystems, observe and draw a		
	Describe how explanations,	diagram to show		
	predictions, and models are	the effects of		
	developed using evidence.	flowing water in a		
	dovoloped dolling evidence.	watershed).		
	S5.B.1.1	matororiouj.		
	Describe how the cell is the basic			
	unit of structure and function for			
	all living things.			
	5 5			
	S5.B.1.1.2			
	Explain the concept of the cell as			
	the basic structural unit of all			
	living things.			
	S5.B.3.1.1			
	Describe the roles of producers,			
	consumers, and decomposers			
	within a local ecosystem.			
	S5.B.3.1.2			
	Describe the relationships between organisms in different			
	food webs.			
	1000 Webs.			
	S6.A.1.1.1			
	Explain how certain questions			
	can be answered through			
	scientific inquiry and/or			
	technological design (e.g.,			
	consumer product testing,			
	common usage of simple			
	machines, modern inventions).			
	S6.A.1.1.2			
	Use evidence to support			
	inferences and claims about an			
	investigation or relationship (e.g.,			

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				common usage of simple			
				machines).			
				S6.A.1.1.3			
				Predict the outcome of an			
				experiment based on previously			
				collected data.			
Chapter 6	 Sustainable use 	 What are some 	 Why is the 	3.1.5.A2	Students will be able	one-on-one	unit worksheets
(Weeks	of natural	parts of an	sustainable	Describe how life on earth	to:	instruction	
16-18)	resources is	ecosystem?	use of natural	depends on energy from the sun.	Describe		teacher
	essential to	2. How do	resources		relationships	modified tests	observation
	provide for the	organisms	necessary?	3.1.5.A3	between variables		
	needs and wants	interact in		Compare and contrast the	through	modified testing	experiments
	of all living things	ecosystems?		similarities and differences in life	interpretation of	locations	
	now and in the	3. How do		cycles of different organisms.	data and		Summative:
	future.	ecosystems			observations (i.e.,	guided notes	Unit Test
		change?		3.1.5.C1	make predictions		
		4. How do		Describe how organisms meet	for the outcome of a	selective grouping	
		humans impact		some of their needs in an	controlled		
		ecosystems?		environment by using behaviors	experiment using	use of technology	
		What heats up		(patterns of activities) in	data tables and		
		air?		response to information (stimuli)	graphs).		
				received from the environment.	Make predictions		
					based on patterns		
				S5.A.1.1.1	in natural systems		
				Explain how certain questions	(e.g., phases of the		
				can be answered through	Moon, time [day,		
				scientific inquiry and/or	month, and year],		
				technological design (e.g.,	weather,		
				investigate to find out if all clay or	Describe how		
				foil boats designs react the same	models are used to		
				when filled with paperclips).	better understand		
					the relationships in		
				S5.A.1.1.2	natural systems		
				Explain how observations and/or	(e.g., water cycle,		
				experimental results are used to	Sun-Earth- Moon		
				support inferences and claims	system,		
				about an investigation or	ecosystems,		
				relationship (e.g., make a claim	observe and draw a		
				based on information on a	diagram to show		
				graph).	the effects of		
				3.~~,,,			
				S5.A.1.1.3	flowing water in a		
				Describe how explanations,	watershed).		
				predictions, and models are	Identify changes in		
				developed using evidence.	environmental		
				astroped using evidence.	conditions that can		
				S5.A.2.1.1	affect the survival of		
				Design a simple, controlled	populations and		
				experiment (fair test) identifying	entire species.		
				the independent and dependent	Describe the roles		
				variables, how the dependent	of producers,		
L				variables, now the dependent			

variable will be measured and which variables will be held constant (e.g., relate the effect of variables [mass, release height, length of string] to number of swings of a pendulum, investigate the relationships between variables in paper airplane designs). S5.A.2.1.2 Describe relationships between
variables through interpretation of data and observations (i.e., make predictions for the outcome of a controlled experiment using data tables and graphs).
S5.A.2.2.1 Describe the appropriate use of instruments and scales to accurately measure time, mass, distance, volume, and temperature safely under a variety of conditions (e.g., use a thermometer to observe and compare the interaction of food coloring in water at different temperatures).
S5.A.2.2.2 Explain how technology extends and enhances human abilities for specific purposes (e.g., use hand lens to examine crystals in evaporation dishes; use graduated cylinders to measure the amount of water used in a controlled plant experiment).
S5.A.3.1.1 Make predictions based on patterns in natural systems (e.g., phases of the Moon, time [day, month, and year], weather, seasons).
S5.A.3.2.1 Describe how models are used to better understand the relationships in natural systems (e.g., water cycle, Sun-Earth-

Moon system, ecosystems,
observe and draw a diagram to
show the effects of flowing water in a watershed).
in a watershed).
S5.B.2.1.3
Explain how certain behaviors
help organisms survive and
reproduce in different environments.
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S5.B.2.1.4
Identify changes in
environmental conditions that
can affect the survival of populations and entire species.
populations and ontile species.
S5.B.3.1.1
Describe the roles of producers,
consumers, and decomposers within a local ecosystem.
within a local ecosystem.
S5.B.3.1.2
Describe the relationships
between organisms in different
food webs.
S5.B.3.2.1
Identify fossil fuels and
alternative fuels used by
humans.
S5.B.3.2.2
Describe the usefulness of
Earth's physical resources as
raw materials for the human-
made world.
S5.B.3.2.3
Explain how different items are
recycled and reused.
S6.A.1.1.1
Explain how certain questions
can be answered through
scientific inquiry and/or
technological design (e.g.,
consumer product testing, common usage of simple
machines, modern inventions).
S6.A.1.1.2

Chapter 7 (Weeks 19-21)	Solid, liquid and gaseous earth materials all circulate in large scale systems at a variety of time scales, giving rise to landscapes, the rock cycle, ocean currents, weather, and climate.	1. What is the water cycle? 2. What is the ocean? 3. What is weather? 4. How do clouds and precipitation form? 5. What is climate?	What causes the great variation at Earth's surface?	inferences and claims about an investigation or relationship (e.g., common usage of simple machines). S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data. 3.3.5.A4 Explain the basic components of the water cycle. 3.3.5.A5 Differentiate between weather and climate. Explain how the cycling of water, both in and out of the atmosphere, has an effect on climate S5.B.3.2.1 Identify fossil fuels and alternative fuels used by humans. S5.B.3.2.2 Describe the usefulness of Earth's physical resources as raw materials for the humanmade world. S5.B.3.2.3 Explain how different items are recycled and reused. S5.C.1.2.1 Describe how water changes from one state to another. S5.C.1.2.2 Identify differences between chemical and physical changes of matter. S5.D.1.1.1 Differentiate between abrupt changes in Earth's surface (e.g., earthquakes, volcanoes, meteor impacts, landslides) and gradual changes in Earth's surface (e.g., earthquakes, in Earth's surface (e.g., earthquakes, volcanoes, meteor impacts, landslides) and gradual changes in Earth's surface (e.g.,	The students will be able to" • Describe relationships between variables through interpretation of data and observations (i.e., make predictions for the outcome of a controlled experiment using data tables and graphs). • Make predictions based on patterns in natural systems (e.g., phases of the Moon, time [day, month, and year], weather, seasons). • Describe how models are used to better understand the relationships in natural systems (e.g., water cycle, Sun-Earth- Moon system, ecosystems, observe and draw a diagram to show the effects of flowing water in a watershed). • Explain how the cycling of water into and out of the atmosphere	one-on-one instruction modified tests modified testing locations guided notes selective grouping use of technology	unit worksheets teacher observation experiments Summative: Unit Test
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Chapter 8 (Weeks 22-24)	Aquatic, terrestrial and human-made ecosystems consist of diverse living and non- living components that change over time and among geographic areas.	1. What are minerals? 2. What are rocks? 3. What makes up soil? 4. What are erosion and deposition? 5. How does Earth's surface change?	How do ecosystems differ and change over time?	lifting up of mountains, wearing away by erosion). S5.D.1.1.2 Explain how geological processes observed today (e.g., erosion, changes in the composition of the atmosphere, volcanic eruptions, earthquakes) are similar to those in the past. S5.D.1.2.1 Identify physical, chemical, and biological factors that affect water quality. S5.D.1.2.2 Describe the importance of wetlands in an ecosystem. S5.D.2.1.1 Explain how the cycling of water into and out of the atmosphere impacts climatic patterns. S5.D.2.1.2 Explain the effects of oceans and lakes on climate. 3.3.5.A1 Describe how landforms are the result of a combination of destructive forces such as erosion and constructive erosion, deposition of sediment, etc. S5.B.3.2.1 Identify fossil fuels and alternative fuels used by humans. S5.B.3.2.2 Describe the usefulness of Earth's physical resources as raw materials for the humanmade world.	impacts climatic patterns. Explain the effects of oceans and lakes on climate. Students will be able to: Describe how models are used to better understand the relationships in natural systems (e.g., water cycle, Sun-Earth- Moon system, ecosystems, observe and draw a diagram to show the effects of flowing water in a watershed). Describe the usering	one-on-one instruction modified tests modified testing locations guided notes selective grouping use of technology	unit worksheets teacher observation experiments Summative: Unit Test
				raw materials for the human-	watershed). • Describe the		

			Describe how water changes from one state to another. S5.C.1.2.2 Identify differences between chemical and physical changes of matter. S5.D.1.1.1 Differentiate between abrupt changes in Earth's surface (e.g., earthquakes, volcanoes, meteor impacts, landslides) and gradual changes in Earth's surface (e.g., lifting up of mountains, wearing away by erosion). S5.D.1.1.2 Explain how geological processes observed today (e.g., erosion, changes in the composition of the atmosphere, volcanic eruptions, earthquakes) are similar to those in the past. S5.D.1.2.1 Identify physical, chemical, and biological factors that affect water quality. S5.D.1.2.2 Describe the importance of wetlands in an ecosystem. S5.D.2.1.1 Explain how the cycling of water into and out of the atmosphere impacts climatic patterns. S5.D.2.1.2 Explain the effects of oceans and lakes on climate.	Explain how different items are recycled and reused. Identify characteristic properties of matter that are independent of mass and volume.		
Chapter 9 (Weeks 25-27) • An object motion is result of acting of	the Earth move? all forces 2. What is a star?	What causes objects to move?	3.2.5.B1 Explain how mass of an object resists change to motion. 3.3.5.B1 Provide evidence that the earth revolves around (orbits) the sun in a year's time and that the earth rotates on its axis once approximately every 24 hours.	Students will be able to: Describe relationships between variables through interpretation of data and observations (i.e.,	one-on-one instruction modified tests modified testing locations guided notes	unit worksheets teacher observation experiments Summative: Unit Test

	comets, and		make predictions	selective grouping	
	moons?	S5.C.2.1.1	for the outcome of a	Selective grouping	
"	neono.	Describe how energy exists in	controlled	use of technology	
		many forms (e.g., electrical,	experiment using		
		mechanical, chemical, heat, light,	data tables and		
		sound) and can be transformed	graphs).		
		within a system.	Describe how		
		·	models are used to		
		S5.C.2.1.2	better understand		
		Describe how heat energy is	the relationships in		
		usually a byproduct of an energy	natural systems		
		transformation.	(e.g., water cycle,		
			Sun-Earth- Moon		
		S5.C.2.1.3	system,		
		Distinguish between kinetic and	ecosystems,		
		potential energy.	observe and draw a		
		05.004.4	diagram to show		
		S5.C.2.1.4	the effects of		
		Explain how energy is	flowing water in a		
		conserved.	watershed).		
		S5.C.3.1.1	Describe the		
		Differentiate between the mass	patterns of Earth's rotation and		
		and weight of an object.	rotation and revolution in		
		and weight of an object.	revolution in relation to the Sun		
		S5.C.3.1.2	and Moon (i.e.,		
		Explain how the mass of an	solar eclipse,		
		object resists change to motion	phases of the		
		(inertia).	Moon, and time).		
		,	Compare the		
		S5.C.3.2.1	general		
		Recognize that moving electric	characteristics of		
		charges produce magnetic forces	the inner planets of		
		and moving magnets produce	our solar system		
		electric forces	(i.e., size, orbital		
		(electromagnetism).	path, surface		
		05.0000	characteristics, and		
		S5.C.3.2.2	moons).		
		Identify the variables within an			
		electric current (i.e., voltage,			
		current, and resistance).			
		S5.D.3.1.1			
		Describe the patterns of Earth's			
		rotation and revolution in relation			
		to the Sun and Moon (i.e., solar			
		eclipse, phases of the Moon, and			
		time).			
		<i>'</i>			
		S5.D.3.1.2			
		Compare the general			
		characteristics of the inner			

				planets of our solar system (i.e., size, orbital path, surface characteristics, and moons).			
Chapter 10 (Weeks 28-30)	Solid, liquid and gaseous earth materials all circulate in large scale systems at a variety of time scales, giving rise to landscapes, the rock cycle, ocean currents, weather, and climate.	 What makes up matter? How can matter be described? What are solids, liquid, and gases? what are mixtures and solutions How does matter change? 	What causes the great variation at Earth's surface?	3.2.5.A1 Describe how water can be changed from one state to another by adding or taking away heat. S5.C.1.1.1 Identify characteristic properties of matter that are independent of mass and volume. S5.C.1.1.2 Differentiate between volume and mass. S5.C.1.2.1 Describe how water changes from one state to another. S5.C.1.2.2 Identify differences between chemical and physical changes of matter. S5.D.1.2.1 Identify physical, chemical, and biological factors that affect water quality. S5.D.1.2.2 Describe the importance of wetlands in an ecosystem. S5.D.2.1.1 Explain how the cycling of water into and out of the atmosphere impacts climatic patterns. S5.D.2.1.2 Explain the effects of oceans and lakes on climate.	Students will be able to: Describe relationships between variables through interpretation of data and observations (i.e., make predictions for the outcome of a controlled experiment using data tables and graphs). Identify characteristic properties of matter that are independent of mass and volume. Differentiate between volume and mass. Describe how water changes from one state to another. Identify differences between chemical and physical changes of matter. Identify physical, chemical, and biological factors that affect water quality.	one-on-one instruction modified tests modified testing locations guided notes selective grouping use of technology	unit worksheets teacher observation experiments Summative: Unit Test
Chapter 11 (Weeks 31-33)	Technological design is a creative process that anyone can do which may result in new	 What are forces? What are Newton's laws? What are machines? 	What steps are involved in technological design and problem solving when creating	3.2.5.B1 Explain how mass of an object resists change to motion. 3.2.5.B7 Understand how theories are developed.	Students will be able to: • Make predictions based on patterns in natural systems (e.g., phases of the Moon, time [day,	one-on-one instruction modified tests modified testing locations	unit worksheets teacher observation experiments

inventions and	inventions and	Identify questions that can be	month, and year],		Summative:
innovations.	innovations?	answered through scientific	weather, seasons).	guided notes	Unit Test
		investigations and evaluate the	Explain how the	J	
		appropriateness of questions.	mass of an object	selective grouping	
		Design and conduct a	resists change to		
		scientific investigation and	motion (inertia).	use of technology	
		understand that current scientific	Recognize that	0,	
		knowledge guides scientific	moving electric		
		investigations.	charges produce		
		Describe relationships using	magnetic forces		
		inference and prediction.	and moving		
		Use appropriate tools and	magnets produce		
		technologies to gather, analyze,	electric forces		
		and interpret data and	(electromagnetism).		
		understand that it enhances			
		accuracy and allows scientists to			
		analyze and quantify results of			
		investigations.			
		Develop descriptions,			
		explanations, and models using evidence and understand that			
		these emphasize evidence, have logically consistent arguments,			
		and are based on scientific			
		principles, models, and theories.			
		Analyze alternative			
		explanations and understanding			
		that science advances through			
		legitimate skepticism.			
		Use mathematics in all			
		aspects of scientific inquiry.			
		Understand that scientific			
		investigations may result in new			
		ideas for study, new methods, or			
		procedures for an investigation			
		or new technologies to improve			
		data collection.			
		S5.A.1.1.1			
		Explain how certain questions			
		can be answered through			
		scientific inquiry and/or			
		technological design (e.g.,			
		investigate to find out if all clay or			
		foil boats designs react the same			
		when filled with paperclips).			
		S5.A.1.1.2			
		Explain how observations and/or			
		experimental results are used to			
		support inferences and claims			
		about an investigation or			

relationship (e.g., make a claim
based on information on a
graph).
S5.A.1.1.3
Describe how explanations,
predictions, and models are
developed using evidence.
S5.A.2.1.1
Design a simple, controlled
experiment (fair test) identifying
the independent and dependent
variables, how the dependent
variable will be measured and
which variables will be held
constant (e.g., relate the effect of
variables [mass, release height,
length of string] to number of
swings of a pendulum,
investigate the relationships
between variables in paper
airplane designs).
S5.A.2.1.2
Describe relationships between
variables through interpretation
of data and observations (i.e.,
make predictions for the outcome
of a controlled experiment using
data tables and graphs).
data tabloo and grapho).
S5.A.2.2.1
Describe the appropriate use of
instruments and scales to
accurately measure time, mass,
distance, volume, and
temperature safely under a
variety of conditions (e.g., use a
thermometer to observe and
compare the interaction of food
coloring in water at different
temperatures).
S5.C.2.1.3
Distinguish between kinetic and
potential energy.
S5.C.2.1.4
Explain how energy is
conserved.

Chapter 12 (Weeks 34-36)	Energy is neither created nor destroyed. Energy can be transformed from one form to another, but transformation between forms often results in the loss of useable energy through the production of heat.	1. What is energy? 2. What is sound energy? 3. What is light energy?	How do energy transformations explain that energy is neither created nor destroyed?	S5.C.3.1.1 Differentiate between the mass and weight of an object. S5.C.3.1.2 Explain how the mass of an object resists change to motion (inertia). S6.A.1.1.2 Use evidence to support inferences and claims about an investigation or relationship (e.g., common usage of simple machines). S6.A.1.1.3 Predict the outcome of an experiment based on previously collected data. 3.2.5.B3 Demonstrate how heat energy is usually a byproduct of an energy transformation. 3.2.5.B4 Demonstrate how electrical circuits provide a means of transferring electrical energy when heat, light, sound, and chemical changes are produced. Demonstrate how electrical, mechanical changes are produced. S5.C.2.1.1 Describe how energy exists in many forms (e.g., electrical, mechanical, chemical, heat, light, sound) and can be transformed within a system. S5.C.2.1.2 Describe how heat energy is usually a byproduct of an energy transformation. S5.C.2.1.3 Distinguish between kinetic and potential energy.	Students will be able to: Describe relationships between variables through interpretation of data and observations (i.e., make predictions for the outcome of a controlled experiment using data tables and graphs). Identify characteristic properties of matter that are independent of mass and volume. Describe how energy exists in many forms (e.g., electrical, mechanical, chemical, heat, light, sound) and can be transformed within a system.	one-on-one instruction modified tests modified testing locations guided notes selective grouping use of technology	unit worksheets teacher observation experiments Summative: Unit Test
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S5.C.2.1.4 Explain how energy is conserved. S5.C.3.1.1 Differentiate between the mass and weight of an object. S5.C.3.1.2 Explain how the mass of an object resists change to motion (inertia). S5.C.3.2.1 Recognize that moving electric charges produce magnetic forces and moving magnets produce electric forces (electromagnetism).	
S5.C.3.2.2 Identify the variables within an electric current (i.e., voltage, current, and resistance).	