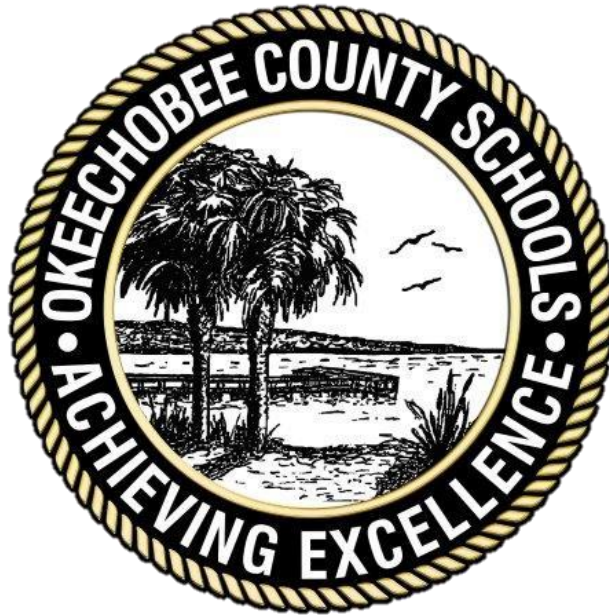


Okeechobee County Comprehensive Science 1 Curriculum Map

Prepared by Christina Gagliardi, MSP Grant Participant



Parts of the Curriculum Map

Units: the broadest organizational structure used to group content and concepts within the curriculum map assessed through Common Unit Assessments (CUA).

Pacing: recommended time frames created by teacher committees, using CCE and CUA data, within which the course should be taught in preparation for the CCE and SSA (formerly known as FCAT.)

Topics: a grouping of standards and skills that form a subset of a unit; all topics under a unit are assessed on the Common Unit Assessments (CUA.)

Learning Targets and Skills: the content knowledge, processes, and skills that will ensure successful mastery of the standards.

Standards: the Next Generation Sunshine State Standards (NGSSS) required by course descriptions posted on CPALMS by FLDOE.

Vocabulary: the content-specific vocabulary or phrases both teachers and students should use, and be familiar with, during instruction.

Resources: a listing of available, high quality and appropriate materials, including: strategies, lessons, textbooks, videos and other media sources, that are aligned with the standards.

Teacher Hints: a listing of considerations when planning instruction, including guidelines to content that is inside and outside the realm of the course descriptions on CPALMS.

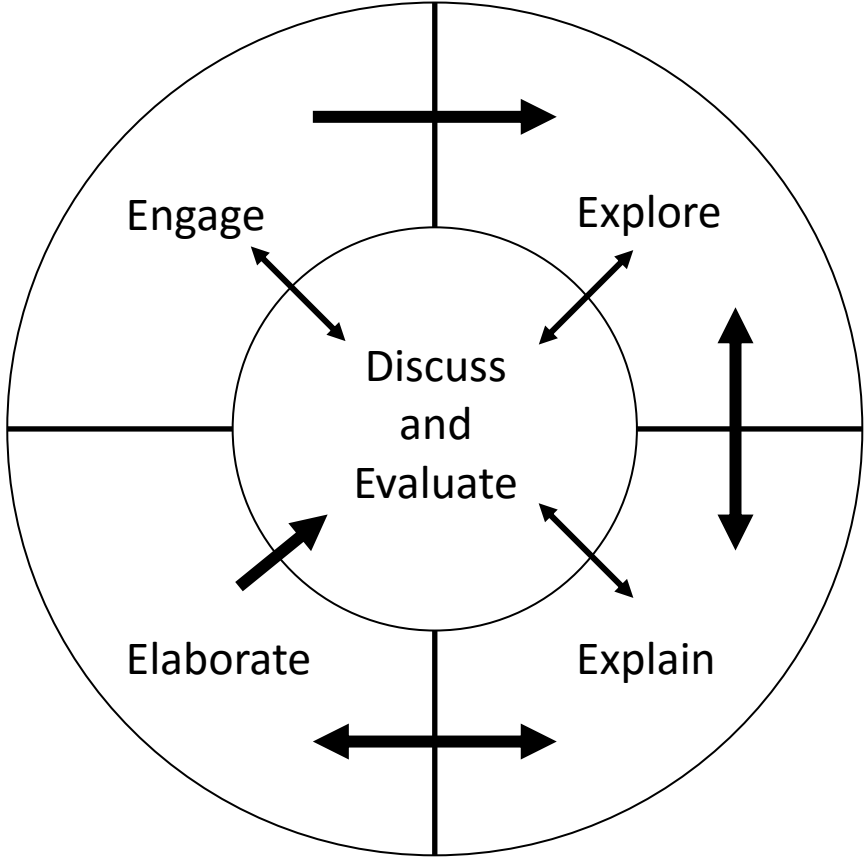
Sample FOCUS Questions: Sample questions aligned to the standards and in accordance with SSA style, rigor, and complexity guidelines; they do NOT represent all the content should be taught, but merely a sampling of it.

Common Labs: The NSTA recommends that all students experience and participate in at least one hands-on, inquiry-based, lab per week. At least two labs per grading period should have a written lab report with analysis and conclusion. Some labs were created in conjunction with the MSP Grant and are written in a 5-E format. Some are found in the **Essential Science Labs Binder (ESLB.)**

CUA: (Common Unit Assessments) are content-specific tests developed by the district and MSP Grant Participants to assist in student progress monitoring. The corollary goal is to prepare students for CCE and SSA, formerly known as FCAT Science, through similar rigor, complexity, and style guidelines as state assessment.

IA: Interim Assessment (aka Performance Matters) will be utilized 3 times during the school year for progress monitoring as required by the District.

Okeechobee County Science 5E Instructional Model

	Description	Implementation
Engage	Learners engage with an activity that captures their attention, stimulates their thinking, and helps them access prior knowledge. A successful engagement activity will reveal existing misconceptions to the teacher and leave the learner wanting to know more about how the problem or issue relates to his/her own world. <i>(e.g. ISN-preview, Probe, Teacher Demonstration...)</i>	<p>The diagram below shows how the elements of the 5E model are interrelated. Although the 5E model can be used in linear order (engage, explore, explain, elaborate and evaluate), the model is most effective when it is used as a cycle of learning.</p>  <p>Each lesson begins with an engagement activity, but evaluation occurs throughout the learning cycle. Teachers should adjust their instruction based on the outcome of the evaluation. In addition, teachers are encouraged to differentiate at each state to meet the needs of individual students.</p>
Explore	Learners explore common, hands-on experiences that help them begin constructing concepts and developing skills related to the learning target. The learner will gather, organize, interpret, analyze and evaluate data. <i>(e.g. investigations, labs...)</i>	
Explain	Learners explain through analysis of their exploration so that their understanding is clarified and modified with reflective activities. Learners use science terminology to connect their explanations to the experiences they had in the engage and explore phases. <i>(e.g. Lecture, ISN-notes, Research, Close-reading, reading to learn, videos, websites...)</i>	
Elaborate	Learners elaborate and solidify their understanding of the concept and/or apply it to a real world situation resulting in a deeper understanding. Teachers facilitate activities that help the learner correct remaining misconceptions and generalize concepts in a broader context. <i>(e.g. labs, web-quest, presentations, debate, discussion, ISN-reflection...)</i>	
Evaluate	Teachers and Learners evaluate proficiency of learning targets, concepts and skills throughout the learning process. Evaluations should occur before activities, to assess prior knowledge, after activities, to assess progress, and after the completion of a unit to assess comprehension. <i>(i.e. formatives and summatives)</i>	

*Adapted from The BSCS 5E Instructional Model: Origins, Effectiveness, and Applications, July 2006, Bybee, et.al, pp. 33-34.

Cognitive Complexity

The benchmarks in the Next **Generation Sunshine State Standards (NGSSS)** identify knowledge and skills students are expected to acquire at each grade level, with the underlying expectation that students also demonstrate critical thinking.

The categories—**low complexity, moderate complexity, high complexity**—form an ordered description of the demands a test item may make on a student. Instruction in the classroom should match, at a minimum, the complexity level of the learning target in the curriculum map.

Low	Moderate	High
<p>This category relies heavily on the recall and recognition of previously learned concepts and principles. Items typically specify what the student is to do, which is often to carry out some procedure that can be performed mechanically. It is not left to the student to come up with an original method or solution.</p>	<p>This category involves more flexible thinking and choice among alternatives than low complexity items. They require a response that goes beyond the habitual, is not specified, and ordinarily has more than a single step or thought process. The student is expected to decide what to do—using formal methods of reasoning and problem-solving strategies—and to bring together skill and knowledge from various domains.</p>	<p>This category makes heavy demands on student thinking. Students must engage in more abstract reasoning, planning, analysis, judgment, and creative thought. The items require that the student think in an abstract and sophisticated way often involving multiple steps.</p>
<p>Students will:</p> <ul style="list-style-type: none"> • retrieve information from a chart, table, diagram, or graph • recognize a standard scientific representation of a simple phenomenon • complete a familiar single-step procedure or equation using a reference sheet 	<p>Students will:</p> <ul style="list-style-type: none"> • interpret data from a chart, table, or simple graph • determine the best way to organize or present data from observations, an investigation, or experiment • describe examples and non-examples of scientific processes or concepts • specify or explain relationships among different groups, facts, properties, or variables • differentiate structure and functions of different organisms or systems • predict or determine the logical next step or outcome • apply and use concepts from a standard scientific model or theory 	<p>Students will:</p> <ul style="list-style-type: none"> • analyze data from an investigation or experiment and formulate a conclusion • develop a generalization from multiple data sources • analyze and evaluate an experiment with multiple variables • analyze an investigation or experiment to identify a flaw and propose a method for correcting it • analyze a problem, situation, or system and make long-term predictions • interpret, explain, or solve a problem involving complex spatial relationships

*Adapted from Webb's Depth of Knowledge and FLDOE FCAT 2.0 Specification Documentation, Version 2.

Comprehensive Science 1

Comprehensive Science 1			
Week	Date	Topic(s)	Unit CUA
1-4 (19 days)	15 August- 9 September	Science Processes	IA 1 (Performance Matters) (August 15-26)
		Energy	Unit 1 Test: Energy (September 8- 9)
5-8 (19 days)	12 September – 7 October	Forces	Unit 2 Test: Force and Motion (October 6-7)
		Motion of Objects	
9 (5 days)	10 October – 14 October	1 st Quarter Review	1 st Quarterly Assessment (October 13-14)
End of 1 st 9 Weeks			
10 - 14 (25 days)	17 October- 18 November	The Sun’s Energy	Unit 3 Test: Weather and Climate (November 16-17)
		Weather and Climate	
15 – 16 (10 days)	28 November – 9 December	Earth’s Structures and Changes	Unit 4 Test: Earth’s Structures & Changes (December 8-9)
17 (5 days)	12 December – 16 December	2 nd Quarter Review	2 nd Quarterly Assessment (December 14-15)
End of 2 nd 9 Weeks – Winter Break			
18 – 21 (17 days)	4 January – 27 January	Earth’s Systems and Patterns	Unit 5 Test: Earth’s Systems and Patterns (January 27)
			IA 2 (Performance Matters) January 5-6
22 - 26 (25 days)	30 January – 3 March	Cell Theory and Organization of Life	Unit 6 Test: Cells (March 2-3)
		Cell Structure and Function	
27 (5 days)	6 March- 10 March	3 rd Quarter Review	3 rd Quarterly Assessment (March 8-9)
End of 3 rd 9 Weeks – Spring Break			
28 – 32 (23 days)	20 March – 21 April	Human Body Systems during Standardized Testing	Unit 7 Test: Human Body Systems (April 19-20)
			IA 3 (Performance Matters)
33 – 34 (10 days)	24 April – 5 May	Classification	Unit 8 Test: Classification (May 4-5)
35-36 (10 days)	8 May – 19 May	CCE Review	Common Course Exam (May 18-19)
37 (5 days)	22 May- 27 May	Microscope End of Year Activities	
End of 4 th 9 Weeks – Summer Break			

The Nature of Science

*Nature of Science Standards, NOS focus, are explicitly applied in content throughout the year

Topics	Learning Targets and Skills	Standards	Vocabulary
The Nature of Science	Students will: <ul style="list-style-type: none"> • describe science as the study of the natural world • give examples and non-examples of science • describe science as both long lasting and strongly supported by data through experimentation, yet open to change • understand scientists can have varied backgrounds, talents, interests, and goals 	SC.6.N.2.1 SC.6.N.2.2 SC.6.N.2.3	non-science pseudoscience science
	Students will: <ul style="list-style-type: none"> • plan and carry out various types of scientific investigations • differentiate between an experiment (control group and variables) and other types of scientific investigations • discuss the importance of repeating experiments and multiple trials • differentiate the benefits and limitations of different types of science investigations • make predictions or form a hypothesis • identify and distinguish between test variables and outcome variables in an experiment • identify control groups for each experiment • take measurements • collect and organize data • interpret and analyze data • draw and defend conclusions 	SC.6.N.1.1 also SC.6.N.1.2 SC.6.N.1.3 SC.6.N.1.4 SC.6.N.1.5	analyze differentiate interpret conclusion control group data experiment investigation hypothesis prediction observation outcome variable (dependent) Test variable (independent)
	Students will: <ul style="list-style-type: none"> • recognize and explain that laws only predict an outcome and theories explain why the outcome happens • recognize and explain that a scientific law is a description of a specific relationship under given conditions in the natural world 	SC.6.N.3.2	

Unit 1: Science Processes		Weeks 1-2	
Topics	Learning Targets and Skills	Standards	Vocabulary
Get Ready	<p>Students will:</p> <ul style="list-style-type: none"> get to know YOU as a scientist and WHY you LOVE science set up a science notebook to be used all year long develop a class list of lab safety procedures in the lab practice classroom and laboratory routines and procedures 		lab safety science notebook scientist
Get Set	<p>Students will:</p> <ul style="list-style-type: none"> describe science as the study of the natural world cite examples of science (can it be tested) understand the need for common system of measurement, metric system, among scientists practice using measurement techniques discuss the VARIOUS methods used by scientists to answer questions or solve problems (controlled experiments, observational studies, engineering by design, trial and error, simulations, modeling, etc.) <p>***Work to break the misconception that there is only 1 method used by scientists***</p> <p><u>NOS Focus: Making observations.</u></p>	SC.6.N.2.1 SC.6.N.1.3	science metric system mass volume length gram (g) liter (l) meter (m) degrees Celsius (C)
GO DO SCIENCE	<p>Students will:</p> <ul style="list-style-type: none"> engage in 1 OR MORE labs where students: <ul style="list-style-type: none"> make a prediction/inference use proper measuring techniques design a procedure using repeated trials control variables collect data draw a conclusion based on evidence conduct research before or after experimentation <p><u>NOS Focus: Predicting outcomes, controlling variables, collecting data, and analyzing data.</u></p> <p>*Students complete CL1 in the 1st 9 weeks during the Science Processes Unit.*</p>	SC.6.N.1.1	prediction inference repetition data evidence conclusion

Science Processes Resources

Textbook and NOS Focus	Text Book – Chapter NOS NOS Focus: Making observations, Predicting outcomes, controlling variables, collecting data, and analyzing data.																												
Safari Montage/Videos	Safari Montage - “Science as Inquiry in Action” Schlessinger Media																												
Websites																													
Keeley Probes	Volume 3 #5 (Hot and Cold Balloons) Volume 3 #13 (Hypothesis)																												
Teacher Hints & Instruction Focus	• An interactive science notebook (ISN) is a compilation of student learning that provides a partial record of the instructional experiences for a student. Some teachers use spiral-bound notebooks, some use composition notebooks, while others use 3-ring binder to organize. Pages should not be taken out of the ISN so careful consideration should be given to the type of notebook that is used.		• Develop a science notebook that will be used all year by students. • Develop a class list of lab safety procedures in the lab. • Identify the various tools used by scientists in various disciplines as they are relevant. • Vocabulary is used to assist students with understanding of terminology that may be assessed or used on assessments. These terms should be primarily used regularly throughout instruction. • Scientists learn from doing investigations AND from reading non-fiction reference materials, such as, journals, newspapers, etc.																										
Common Labs (CL)	Common Lab (CL) CL 1- Newton’s Wild Ride This lab provides an opportunity for students to design and build the fastest roller coaster ride they can that delivers a marble safely to the end. All resources can be found in the 6 th grade CL folder on Google Drive.																												
Labs and Activities			Sample FOCUS Question																										
The following labs and activities can be found on Google Drive in 6th grade Science Resources folder: <ul style="list-style-type: none">The Four Question Research Strategy ActivityNewton’s Wild Ride CL 1Gummy Bear Lab			Dan tests the number of paperclips a small refrigerator magnet can pick up, using paperclips that are all the same size and material. He tests the refrigerator magnet four times and records his results. He then repeats this process for two other magnets, which are different sizes. His results are shown in table below. <table><tr><th>Magnet Size</th><th>Trial 1</th><th>Trial 2</th><th>Trial 3</th><th>Trial 4</th><th>Mean Number of Paper Clips Picked Up</th></tr><tr><td>Small</td><td>4</td><td>3</td><td>5</td><td>4</td><td>4</td></tr><tr><td>Medium</td><td>15</td><td>14</td><td>14</td><td>13</td><td>14</td></tr><tr><td>Large</td><td>30</td><td>29</td><td>30</td><td>31</td><td>30</td></tr></table> <p>What do the four trials with each magnet allow Dan to do, which he could not do with only a single trial?</p> <p>A. draw conclusions </p>			Magnet Size	Trial 1	Trial 2	Trial 3	Trial 4	Mean Number of Paper Clips Picked Up	Small	4	3	5	4	4	Medium	15	14	14	13	14	Large	30	29	30	31	30
Magnet Size	Trial 1	Trial 2	Trial 3	Trial 4	Mean Number of Paper Clips Picked Up																								
Small	4	3	5	4	4																								
Medium	15	14	14	13	14																								
Large	30	29	30	31	30																								

Unit 1: Energy		Weeks 3-4	
Topics	Learning Targets and Skills	Standards	Vocabulary
Energy	<p>Students will:</p> <ul style="list-style-type: none"> describe a scientific law as a description of a specific relationship under given conditions in the natural world or a prediction of an outcome to some phenomenon describe laws as a prediction to an outcome and a theory as an explanation as to why the outcome happens recognize and explain what a theory is and how a theory is used in science versus how theory is used differently in everyday life <p><u>NOS Focus: differentiate and cite examples of scientific laws, societal laws, and theories.</u></p>	<p>SC.6.N.3.2</p> <p>SC.6.N.3.3</p> <p>SC.6.N.3.1</p>	<p>scientific laws</p> <p>scientific theory</p>
	<p>Students will:</p> <ul style="list-style-type: none"> describe and cite examples of the Law of Conservation of Energy differentiate between kinetic and potential energy identify and demonstrate energy transformation from kinetic to potential energy and vice versa 	<p>SC.6.P.11.1</p> <p>SC.6.N.1.1</p> <p>SC.6.N.3.4</p>	<p>energy transformation</p> <p>kinetic energy</p> <p>Law of Conservation of Energy</p> <p>potential energy</p> <p>work</p>
CUA 1: Energy		9 September	

Energy Resources

Textbook and NOS Focus	Energy Chapter 7: Lessons 1 & 2	
	NOS Focus: differentiate and cite examples of scientific laws, societal laws, and theories.	
Safari Montage/Videos	Safari Montage - "Science of Disney Imagine" Disney Educational Productions Science of the Olympic winter games http://www.nsf.gov/news/special_reports/sos/ The science of Speed videos with emphasis on racing and NASCAR	
Websites	Puck Chuck – PBS Kids PhET lab – Energy Skate Park Study Jams – Acceleration	Brain Pop - Kinetic Energy Brain Pop - Potential Energy Study Jams – Force and Motion
Keeley Probes	Volume 3 #8 (Apple on a Desk) Volume 3 #10 (Dropping Balls)	
Teacher Hints & Instruction Focus	<ul style="list-style-type: none"> • Students may design a roller coaster or machine to demonstrate energy transformation from kinetic to potential energy. • A pendulum can be used as well. • Items will not assess transformations involving nuclear energy or energy in living systems. • Students need to understand that a theory is a well-supported and widely accepted explanation of nature and is NOT simply a claim posed by an individual. • Items may assess student's ability to recognize up to five energy transformations in one system. 	
Labs and Activities		Sample FOCUS Question
<p>The following labs and activities can be found on Google Drive in 6th grade Science Resources folder:</p> <ul style="list-style-type: none"> • Lab: PhET Energy Skate Park Basic • Lab: Ball Bounce Lab • Lab: Hot-Wheeler Coaster • Launch Lab: Is energy lost when it changes form? • Launch Lab: Can you change matter? • ESLB: Building a Roller Coaster (pg. 58) 		<p>Amber likes riding her bicycle through her neighborhood where there are lots of hills. She rides down a very steep hill, and then goes up a small hill. She doesn't need to pedal as her bicycle carries her up the small hill. How does Amber's kinetic energy and potential energy change as she goes uphill?</p> <p>A. Her kinetic energy and her potential energy both increase. B. Her kinetic energy and her potential energy both decrease. C. Her kinetic energy increases and her potential energy decreases. D. Her kinetic energy decreases and her potential energy increases.</p>

Unit 2: Forces and Motion		Weeks 5-8	
Topics	Learning Targets and Skills	Standards	Vocabulary
Forces	Students will: • investigate and describe types of forces, including: ○ <i>Forces at a distance: electrical, magnetic, and gravitational</i> ○ <i>Contact forces: normal, applied, friction</i>	SC.6.P.13.1	applied force contact force electrical force forces friction
	Students will: • explore the Law of Gravity by recognizing that every object exerts gravitational force on every other object and that force depends on how much mass the objects have and how far apart they are	SC.6.P.13.2	gravitational force Law of Gravity magnetic force mass normal force
Motion of Objects	Students will: • investigate and explain how an unbalanced force acting on an object changes its speed or direction of motion (or both)	SC.6.P.13.3	balanced force motion
	Students will: • Analyze and Interpret graphs and data tables of distance and time for an object moving at a constant speed • measure and graph distance versus time for an object moving at a constant speed	SC.6.P.12.1	negative acceleration positive acceleration unbalanced force distance-time graph
	Students will: • design an investigation to test the effect a variable (mass, tire size, ramp incline, etc.) has on the speed of an object using a minimum of 10 trials ○ collect data and organize it in a table ○ <banalyze< b=""> the data through graphing ○ <bdraw< b=""> conclusions from the analysis about the speed and position of the object as well as the forces acting on it • discuss and compare methods used, results obtained, and proposed explanations among groups of students conducting the same investigation • explain why scientific investigation should be replicable <u>NOS Focus: Differentiate between replication and repetition.</u> <u>NOS Focus: Build an experiment to identify, test, and control variables.</u></bdraw<></banalyze<>	SC.6.N.1.1 SC.6.N.1.4 SC.6.N.1.2	Test (independent) variable Outcome (dependent) Variable Control variable
		CUA 2: Force and Motion	7 October

Forces and Motion of Objects Resources	
Textbook and NOS Focus	Force and Motion Chapter 8: Lesson 1, 2 and 3 NOS Focus: Differentiate between replication and repetition. Build an experiment to identify, test, and control variables.
Safari Montage/Videos	Safari Montage – “Forces” Schlessinger Media
Websites	PBS Kids – Puck Chuck Brain Pop – Force Brain Pop – Acceleration (positive & negative)
Keeley Probes	Volume 3 #9 (Rolling Marbles)
Teacher Hints & Instruction Focus	<ul style="list-style-type: none"> • This is the only time this concept is taught in middle school. • Items will not require the calculations of acceleration or nonparallel vectors. • The formula required to be used is speed = distance / time, all others are conceptual only. • Items will not require knowledge of coefficient of friction. • Items may assess understanding of friction as a force in both sliding and stationary situations.
Labs and Activities	
The following labs and activities can be found on Google Drive in 6th grade Science Resources folder: <ul style="list-style-type: none"> • Activity Puck Chuck – this activity is used to teach forces using an interactive game on pbskids.org (see website above) • Lab New Speed Challenge – Students will find the speed as they walk, skip, run, etc. • Levitation Engineers: Exploring Forces 5E • Launch Lab: What effects the way objects fall? • Launch Lab: What does a graph show? • Lab: Constant Speed or Acceleration • Lab: Average Speed and Graphing • ESLB: Rocket Car (pg. 62) • ESLB: Balloon Rocket (pg. 80) 	
Sample FOCUS Question	
<p>An object travels at constant speed, and its distance and time are shown in the graph. What is the average constant speed of the object between 2 and 5 seconds?</p> <p>A. 25 m/s B. 50 m/s C. 150 m/s D. 300 m/s</p>	

Review for 1 st Quarter Test		Week 9	
Topics	Learning Targets and Skills	Standards	Unit
Review	Scientific Processes	SC.6.N.1.1 SC.6.N.1.2 SC.6.N.1.3 SC.6.N.1.4 SC.6.N.1.5 SC.6.N.2.1 SC.6.N.2.2 SC.6.N.2.3 SC.6.N.3.1 SC.6.N.3.2 SC.6.N.3.3 SC.6.N.3.4	Unit 1
	Energy	SC.6.P.11.1	Unit 1
	Forces	SC.6.P.13.1 SC.6.P.13.2	Unit 2
	Motion of Objects	SC.6.P.12.1 SC.6.P.13.3	Unit 2
1st Quarter Assessment		13-14 October	

2nd Quarter

Unit 3: Weather and Climate		Weeks 10-12	
Topics	Learning Targets and Skills	Standards	Vocabulary
The Sun's Energy	<p>Students will:</p> <ul style="list-style-type: none"> explain how energy provided by the sun influences global patterns, including: <ul style="list-style-type: none"> atmospheric movement (wind) temperature differences between air (atmosphere), land (geosphere), and water (hydrosphere) create a model to investigate how the sun's energy causes changes in temperature of air, land, and water, such as: <ul style="list-style-type: none"> a diagram showing how different surfaces reflect or absorb heat (i.e. snow vs. ocean) a 3D representation of uneven heating because of the Earth's tilt (i.e. using a globe) 	<p>SC.6.E.7.5</p> <p>SC.6.N.3.4</p>	<p>energy scientific model temperature thermometer wind</p>
	<p>Students will:</p> <ul style="list-style-type: none"> differentiate the three mechanisms by which thermal energy is transferred through the Earth's systems: <ul style="list-style-type: none"> <i>Radiation</i> <i>Conduction</i> <i>Convection</i> investigate radiation, conduction, and convection in terms of their influence on Earth's systems (geosphere, hydrosphere, and atmosphere) <ul style="list-style-type: none"> <i>thermal energy is transferred on Earth from a warmer substance to a cooler substance from direct contact through conduction</i> <i>thermal energy is transferred in the Earth's atmosphere and hydrosphere through convection currents</i> <i>the transfer of energy in the form of radiation from the Sun to the Earth through the atmosphere.</i> <p><u>NOS Focus: Benefits and limitations of model.</u></p> <p>*Students complete CL 2 during the 2nd 9 weeks with the Sun's Energy Unit.*</p>	<p>SC.6.E.7.1</p> <p>SC.6.N.1.1</p>	<p>conduction convection convection currents energy transfer heat radiation thermal energy</p>

The Sun's Energy Resources	
Textbook and NOS Focus	Energy Transfer in the Atmosphere Ch. 4: Lesson 2 <u>NOS Focus: Benefits and limitations of models</u>
Safari Montage/Videos	Safari Montage - "Methods of Heat Transfer" VEA "Heat" Bill Nye
Websites	Nasa -The difference between weather and climate - Brain Pop – Forms of Energy Study Jams –Energy and Matter
Keeley Probes	Volume 3 #21 (Where did water come from?) Volume 4 #19 (Camping)
Teacher Hints & Instruction Focus	<ul style="list-style-type: none"> • Temperature will be shown in degrees Celsius with Fahrenheit in parenthesis. • Items assessing radiation, conduction and convection should be done in the context of the atmosphere, geosphere and hydrosphere on Earth. Students need to identify convection, radiation and conduction on a diagram or picture.
Common Labs (CL)	Common Lab (CL) CL 2 – Things Are Starting To Heat Up This lab allows students to create a model of how the sun's energy causes changes in temperature of land and water. <i>All resources can be found in the 6th grade CL folder on Google Drive.</i>
Labs and Activities	
Sample FOCUS Question	
The following labs and activities can be found on Google Drive in 6th grade Science Resources folder: <ul style="list-style-type: none"> • Lab: Things are Starting to Heat Up CL 2 • Lab: Conduction, Convection, Radiation • Lab: Heat transfer- Conduction, Convection, Radiation • Launch Lab: What happens to air as it warms • ESLB: The Many Forms of Energy (pg. 44) • ESLB: Showing off the Heat (pg.19) • CPalms Lab: Conduction and Convection in Pictures • CPalms Lab: Energy Transfer through Earth Systems 	
The sun's energy causes water to evaporate from Earth's surface and become water vapor. What is the most likely result when water vapor condenses into clouds? A. Heat from the water is released, causing the clouds to produce snow. B. Heat from the water retained, causing the surrounding air to deflate. C. Heat from the water is released, causing the surrounding air to expand. D. Heat from the water is retained, causing the clouds to move higher in the atmosphere	

Unit 3: Weather and Climate		Weeks 13-14	
Topics	Learning Targets and Skills	Standards	Vocabulary
Weather and Climate	Students will: <ul style="list-style-type: none"> differentiate between weather and climate describe the four atmospheric factors that make up weather, including: <ul style="list-style-type: none"> <i>thermal energy, air pressure, winds, and moisture</i> 	SC.6.E.7.6	air pressure climate moisture thermal energy weather
	Students will: <ul style="list-style-type: none"> explain how the cycling of water between the atmosphere and hydrosphere affects weather patterns and climate investigate how the water cycle affects local climate and weather 	SC.6.E.7.2 SC.6.N.1.1	condensation evaporation precipitation transpiration water cycle
	Students will: <ul style="list-style-type: none"> explain how global patterns such as the jet stream and ocean currents influence local weather in measurable terms, such as: <ul style="list-style-type: none"> <i>air temperature and pressure</i> <i>wind direction and speed</i> <i>humidity and precipitation</i> <i>fronts</i> investigate how natural disasters have affected human life in Florida <u>NOS Focus: Differentiate the benefits and limitations of different types of science investigations.</u>	SC.6.E.7.3 SC.6.N.1.1	front Gulf stream humidity jet stream ocean currents temperature wind wind direction wind speed
CUA 3: Weather and Climate		16-17 November	

Weather and Climate Resources		
Textbook and NOS Focus	Weather and Climate Ch. 1: Lesson 2 or Ch. 5: Lesson 1 <u>NOS Focus: Differentiate the benefits and limitations of different types of science investigations.</u>	
Safari Montage/Videos	Safari Montage - “The Weather Channel” “Global Warming” Schlessinger Media Weather vs Climate- YouTube	
Websites	Study Jams – Weather and Climate NASA - What’s the Difference Between Weather and Climate? https://weather.com/ Brain Pop - Weather	
Keeley Probes	Volume 1 #21 (Wet Jeans) Volume 3 #20 (What are Clouds)	
Teacher Hints & Instruction Focus	<ul style="list-style-type: none"> • The water cycle shouldn’t be taught or assessed in isolation but through application • Students will describe and or explain how the cycling of water and global patterns influence local weather and climate. 	<ul style="list-style-type: none"> • The climate of an area is determined by a minimum of 30 years of average weather data. • Students will be assessed on atmospheric conditions and their resulting weather phenomena such as hurricanes, tornadoes, lightning, fronts and precipitation.
Common Labs (CL)	Common Lab (CL) <i>All resources can be found in the 6th grade CL folder on Google Drive.</i>	
Labs and Activities		Sample FOCUS Question
The following labs and activities can be found on Google Drive in 6 th grade Science Resources folder: <ul style="list-style-type: none"> • Launch Lab: How can you model the cycling of water? • Lab: Climate vs. Weather • Lab: Water Cycle and Weather • ESLB: Melting Ice (pg. 23) 		El Niño is a weather pattern in which the normally cool ocean currents of the tropical Pacific Ocean become warmer. How does this most likely affect weather along the West Coast of the United States? A. It does not affect weather in West Coast states B. It makes summers colder C. It makes winters warmer D. It makes storms more predictable

Unit 4: Earth Structures and Changes		Weeks 15-16	
Topics	Learning Targets and Skills	Standards	Vocabulary
Earth Structures and Changes	<p>Students will:</p> <ul style="list-style-type: none"> describe and cite examples of ways in which Earth's surface is built up and torn down by physical and chemical weathering, erosion, and deposition explain and differentiate the processes of physical weathering, chemical weathering, erosion, and deposition create a model to investigate ways to prevent the erosion of Florida's landforms <p><u>NOS Focus: benefits and limitations of models.</u></p>	<p>SC.6.E.6.1</p> <p>SC.6.N.3.4</p>	<p>chemical weathering deposition erosion physical weathering weathering</p>
	<p>Students will:</p> <ul style="list-style-type: none"> identify there are different types of landforms found on Earth's surface, including: <ul style="list-style-type: none"> <i>Coastlines, Dunes, Rivers, Mountains, Glaciers, Deltas, Lakes</i> differentiate landforms found in Florida (such as aquifers, caverns, and sinkholes, etc.) from those found outside Florida (such as mountains, glaciers, etc.) 	SC.6.E.6.2	<p>coastlines deltas dunes glaciers lakes landforms mountains rivers sinkholes</p>
	<p>Students will:</p> <ul style="list-style-type: none"> investigate the effects of physical weathering on the Earth's Surface investigate the effects of chemical weathering on the Earth's Surface investigate the effects of erosion and deposition on the Earth's Surface <p><u>NOS Focus: Identify and understand the purpose of a control group in an experiment.</u></p>	SC.6.N.1.1	control group
CUA 4: Earth Structures and Changes		8-9 December	

Earth's Structures and Changes Resources	
Textbook and NOS Focus	Weathering and Erosion Chapter 2: Lesson 1 and Chapter 2: Lesson 2 & 3 NOS Focus: Benefits and limitations of models. Identify and understand the purpose of a control group in an experiment.
Safari Montage/Videos	Safari Montage - "Weathering and Erosion" Schlessinger Media "Land Formations" Schlessinger Media
Websites	Study Jams – Weathering and Erosion
Keeley Probes	Volume 1 #22 (Where Sand Comes From) Volume 4 #10 (Is it a Model)
Teacher Hints & Instruction Focus	<ul style="list-style-type: none"> • Focus on the building up and tearing down of landforms. • Plate tectonics is NOT taught in sixth grade. • Physical and chemical weathering were covered in fifth grade. Review these topics to ensure mastery. • Scientific laws predict an outcome – theories explain the process to the outcome.
Labs and Activities	
The following labs and activities can be found on Google Drive in 6th grade Science Resources folder: <ul style="list-style-type: none"> • Cleaning with Ketchup- Chemical vs. Mechanical Weathering • Launch Lab: How can rocks be broken down? • Launch Lab: How do the shape and size of sediment differ? • Lab: Let's get moving • CPalms Lab: The Amazing Land of Florida 	
Sample FOCUS Question	
<p>Many people often confuse the terms "weathering" and "erosion." Which of the following events is the best example of erosion?</p> <p>A. The rolling of a pebble along the bottom of a streambed B. The splitting of sedimentary rock because water has frozen in a crack C. The dissolving of rock by rainwater D. The crumbling of bedrock to form soil</p>	

Review for 2 nd Quarter Test		Week 17	
Topics	Learning Targets and Skills	Standards	Unit
Review	The Sun's Energy	SC.6.E.7.1 SC.6.E.7.5	Unit 3
	Weather and Climate	SC.6.E.7.2 SC.6.E.7.3 SC.6.E.7.6	Unit 3
	Earth's Structures and Changes	SC.6.E.6.1 SC.6.E.6.2	Unit 4
		2nd Quarter Assessment	14-15 December

3rd Quarter

Unit 5: Earth Systems and Patterns		Weeks 18 - 21	
Topics	Learning Targets and Skills	Standards	Vocabulary
Earth Systems and Patterns	<p>Students will:</p> <ul style="list-style-type: none"> differentiate among the Earth's <ul style="list-style-type: none"> Geosphere Hydrosphere Cryosphere Atmosphere Biosphere describe the interactions between the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere 	<p>SC.6.E.7.4</p> <p>SC.6.N.3.4</p>	<p>atmosphere biosphere cryosphere geosphere hydrosphere interactions ground water mineral rock</p>
	<p>Students will:</p> <ul style="list-style-type: none"> describe the composition and structure of the Earth's atmosphere describe the functions of the four main layers of Earth's atmosphere: <ul style="list-style-type: none"> <i>Exosphere, Thermosphere, Mesosphere, Stratosphere, Troposphere</i> explain how Earth's atmosphere protects life and insulates the planet including the ozone layer discuss the impacts to life if Earth's atmosphere is compromised, such as: <ul style="list-style-type: none"> <i>climate change and ozone depletion</i> <p><u>NOS Focus: Reading and analyzing charts and graphs.</u></p>	<p>SC.6.E.7.9</p>	<p>atmosphere mesosphere ozone layer stratosphere thermosphere troposphere water vapor ionsphere</p>
CUA 5: Earth Systems and Patterns		27 January	

Earth's Systems and Patterns Resources	
Textbook and NOS Focus	Earth Systems Chapter 1: Lesson 1 and Chapter 4: Lesson 1 NOS Focus: Reading and analyzing charts and graphs.
Safari Montage/Videos	Safari Montage - "Atmosphere" Bill Nye "Earth's Atmosphere" Schlessinger Media
Websites	Brain Pop – Earth's Atmosphere Brain Pop – Earth's Structure
Keeley Probes	Volume 3 #22 (Rainfall)
Teacher Hints & Instruction Focus	<ul style="list-style-type: none"> • Students should know the layers of the atmosphere and their functions. • Focus on the effects if the atmosphere were compromised, not the causes. • Climate change may include global warming; it is a long-term change in the Earth's climate, or of a region on Earth. Global warming: the increase in Earth's average surface temperature due to rising levels of greenhouse gases.
Labs and Activities	
The following labs and activities can be found on Google Drive in 6th grade Science Resources folder: <ul style="list-style-type: none"> • Launch Lab: How can you describe Earth? • Launch Lab: How does air apply pressure? • ESLB: Modeling the Greenhouse Effect (pg. 28) • ESLB: Using a Solar Cooker to Demonstrate Energy Transfer (pg. 34) • CPalms Lab: Earth Systems Interactions • CPalms Lab: Earth's Sphere's Posters 	
Sample FOCUS Question	
<p>The interaction between the cryosphere and the hydrosphere has the ability to dramatically change our global climate. Which of the following events shows an interaction between the cryosphere and the hydrosphere?</p> <p>A. A large iceberg melting in the ocean. B. Evaporated water condensing to form clouds. C. Trees releasing oxygen into the environment. D. The Himalayan Mountains being pushed upward.</p>	

	CUA 6: Cells	10 March
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Cell Structure and Function Resources		
Textbook and NOS Focus	Cells Ch. 10: Lesson 1 and Lesson 2 NOS Focus: Benefits and limitations of models.	
Safari Montage/Videos	Safari Montage - "Cells" Schlessinger Media "Cells" Bill Nye Cell Rap - You Tube	
Websites	Cells Alive - Interactive Diagram of a Plant and Animal Cell Study Jams – Plant Cells Study Jams – Animal Cells	
Keeley Probes	Volume 3 #16 (Sam's Puppies) Volume 1 #18 (Is it Made of Cells?)	
Teacher Hints & Instruction Focus	<ul style="list-style-type: none"> • Items on FCAT may use terms like cellular respiration and photosynthesis in the context of homeostasis but will not assess knowledge of these processes. • Time should not be spent teaching the parts of an atom. • Items will not assess the scientists who contributed to the cell theory or the historical development of the cell theory. • Mitosis and Meiosis will not be assessed at the 6th grade level. 	<ul style="list-style-type: none"> • This is the only time this concept is taught in middle school. • Make sure students have shown mastery of the organelles in the learning targets before adding organelles that will not appear on FCAT. • The cell wall, cell membrane, nucleus, cytoplasm, chloroplast, mitochondria, and vacuole are the only structures required. • Testing scenarios will require a differentiation of the structures and functions of organelles in plant and/or animal cells.
Common Labs (CL)	<u>Common Lab (CL)</u> CL 3 – Microscope Lab This lab allows students to view cells under microscopes. <i>All resources can be found in the 6th grade CL folder on Google Drive.</i>	
Labs and Activities		Sample FOCUS Question
The following labs and activities can be found on Google Drive in 6th grade Science Resources folder: <ul style="list-style-type: none"> • Launch Lab: What is in a Cell? • Launch Lab: Why do eggs have shells? • ESLB: Using the Microscope (pg.88) • ESLB: Comparing Plant and Animal Cells (pg. 93) • CPalms: "Me & My Cells" : An Introductory Look at Plant & Animal Cells 		In an animal, a muscle cell requires more energy than other cells. Because of this, you would expect to find more of which type of organelles in muscle cells than in other cells? A. vacuoles B. chloroplasts C. cell walls D. mitochondria

Review for 3 rd Quarter Test		Week 27	
Topics	Learning Targets and Skills	Standards	Unit
Review	Earth's System and Patterns	SC.6.E.7.4 SC.6.E.7.9	Unit 5
	Cell's (Theory, Organization of Life, Structure, & Function)	SC.6.L.14.2 SC.6.L.14.3 SC.6.L.14.4	Unit 6
3 rd Quarter Assessment		8-9 March	

4th Quarter

Human Body Systems	<p>Students will:</p> <ul style="list-style-type: none"> • Identify the major systems of the human body, including: <ul style="list-style-type: none"> ○ <i>Digestive</i> ○ <i>Respiratory</i> ○ <i>Circulatory</i> ○ <i>Excretory</i> ○ <i>Lymphatic (Immune)</i> ○ <i>Nervous</i> ○ <i>Muscular</i> ○ <i>Skeletal</i> • describe the general functions of the major systems of the human body • describe ways that the major systems of the human body interact to maintain homeostasis, such as: <ul style="list-style-type: none"> ○ <i>maintain constant temperature – i.e. sweating while running</i> ○ <i>response to stimuli – i.e. pull back after touching a hot surface</i> <p><u>NOS Focus: Collecting and analyzing data</u></p>	SC.6.L.14.5	circulatory digestive excretory homeostasis immune muscular skeletal nervous respiratory lymphatic
	<p>Students will:</p> <ul style="list-style-type: none"> • recognize different types of infectious agents that may affect the human body, such as: <ul style="list-style-type: none"> ○ <i>virus- cold</i> ○ <i>bacteria – strep throat</i> ○ <i>Fungi – athlete's foot</i> ○ <i>Parasite - cholera</i> • compare and contrast treatments for viruses versus bacterial infections 	SC.6.L.14.6	bacteria fungi infectious agent parasite virus
	<p>Students will:</p> <ul style="list-style-type: none"> • describe and identify patterns in the hierarchical organization of organisms from atoms to molecules and cells to tissues to organs to organ systems to organisms, for example: <p><i>atom → molecule → cell → tissue → organ → organ system → organism</i></p>	SC.6.L.14.1	atoms cells molecules organ systems organisms organs tissues

CUA 7: Human Body Systems

19-20 April

Unit 7: Human Body Systems

Weeks 28 – 32

Topics	Learning Targets and Skills	Standards	Vocabulary
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Human Body Systems Resources

Textbook and NOS Focus	Human Body Systems Ch. 12: Lesson 1 and Lesson 2 Bacteria and Viruses Ch. 13 Lesson 1 and Lesson 3 NOS Focus: Collecting and analyzing data.		
Safari Montage/Videos	Safari Montage - “Interrelationship of the Body Systems” Schlessinger Media		
Websites	Study Jams – Human Body Brain Pop – Human Body Systems		
Keeley Probes	Volume 4 #17 (Catching a Cold) Volume 4 #18 (Digestion)		
Teacher Hints & Instruction Focus	<ul style="list-style-type: none"> • This is the only time this concept is taught in middle school. • Items are limited to the human digestive, respiratory, circulatory, reproductive, excretory, immune, nervous, and musculoskeletal systems. • Items will not assess individual structures or functions of individual organs in isolation BUT their interaction with each other 	<ul style="list-style-type: none"> • Items assessing interactions of systems to maintain homeostasis should include a reference to homeostasis and are limited to the organismal level. • Items will not require specific knowledge of diseases that affect the human body or the causal agents. • Items will not assess the interactions of more than three systems. • Diagrams of the human reproductive system will not be used. 	
Common Labs (CL)	Common Lab (CL) CL 4 – Muscle Fatigue Lab This provides an opportunity for students to experience muscle fatigue. <i>All resources can be found in the 6th grade CL folder on Google Drive.</i>		
Labs and Activities		Sample FOCUS Question	
The following labs and activities can be found on Google Drive in 6 th grade Science Resources folder: <ul style="list-style-type: none"> • Launch Lab: Which tool can transport water quickly? • Launch Lab: Why is the skeletal system so important? • CPalms Lab: Circulatory and Respiratory Systems working together to maintain Homeostasis 		In an animal, a muscle cell requires more energy than other cells. Because of this, you would expect to find more of which type of organelles in muscle cells than in other cells? A. vacuoles	

<ul style="list-style-type: none"> CPalms Lab: Body Systems and Homeostasis 	B. chloroplasts C. cell walls D. mitochondria
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Unit 8: Classification		Weeks 33 - 34	
Topics	Learning Targets and Skills	Standards	Vocabulary
Classification	<p>Students will:</p> <ul style="list-style-type: none"> analyze the classification of organisms in terms of shared characteristics in the Linnaean System explain why organisms are organized into a hierarchy of classification: <ul style="list-style-type: none"> <i>Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species</i> classify organisms into the three domains: <ul style="list-style-type: none"> <i>Bacteria</i> <i>Archea</i> <i>Eukarya</i> classify living organisms into kingdoms based on shared characteristics <ul style="list-style-type: none"> <i>Protist</i> <i>Fungus</i> <i>Plant</i> <i>Animal</i> Classify living organisms into specific domains and kingdoms using: <ul style="list-style-type: none"> <i>Energy needs: Heterotroph vs. autotroph</i> <i>Organisms structure: unicellular vs. multicellular</i> <i>Cell Structure: Cell wall vs. cell membrane</i> <i>Environment: Extreme conditions vs. surface conditions</i> <p>NOS Focus: Draw and defend conclusions. Understand that scientists use a variety of methods to solve problems.</p>	SC.6.L.15.1	binomial nomenclature Linnaean System classification common name scientific name domain Archaea Bacteria Eukarya kingdom phylum class order family genus species heterotroph autotroph unicellular multicellular prokaryotic eukaryotic

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CUA 8: Classification**4-5 May****Classification Resources**

Textbook and NOS Focus	Classification Ch. 9 Lessons 1 and Lesson 2 <u>NOS Focus: Draw and defend conclusions. Understand that scientists use a variety of methods to solve problems.</u>
Safari Montage/Videos	Safari Montage - “Animal Classification” Schlessinger Media
Websites	Brain Pop – Classification Brain Pop – Six Kingdoms
Keeley Probes	Volume 1 #16 (Is it an Animal?)

Teacher Hints & Instruction Focus	<ul style="list-style-type: none"> • This is the one and only time this concept is taught in middle school. • Items assessing the classification of organisms into domains are limited to Bacteria, Archaea and Eukarya. • Items assessing the classification of organisms into kingdoms are limited to Protist, Fungus, Plant, and Animal.
Common Labs (CL)	<p>Common Lab (CL) CL 5- The Classification of Living Things 5E This lab will have students identify methods of classification used for living things by sorting and classifying everyday objects, exploring organisms through a digital scavenger hunt, creation of a graphic organizer, and through collaborative engagement. Students will understand that all organisms are classified based on shared characteristics. <i>All resources can be found in the 6th grade CL folder on Google Drive.</i></p>
Labs and Activities	Sample FOCUS Question
<p>The following labs and activities can be found on Google Drive in 6th grade Science Resources folder:</p> <ul style="list-style-type: none"> • Launch Lab: Is it alive? • Launch Lab: How do you identify similar items? 	<p>According to the modern classification system, which list is written correctly from least specific to most specific?</p> <p>A. species, genus, family, order B. phylum, class, genus, order C. class, order, genus, species D. phylum, order, species, family</p>

Common Course Exam Review		Weeks 35-36	
Topics	Learning Targets and Skills	Standards	Unit
Review	<u>Review 1st Quarter:</u> Scientific Processes Energy Forces Motion of Objects	SC.6.N.1.1 SC.6.N.1.2 SC.6.N.1.3 SC.6.N.1.4 SC.6.N.1.5 SC.6.N.2.1 SC.6.N.2.2 SC.6.N.2.3 SC.6.N.3.1 SC.6.N.3.2 SC.6.N.3.3 SC.6.N.3.4 SC.6.P.11.1 SC.6.P.13.1 SC.6.P.13.2 SC.6.P.12.1 SC.6.P.13.3	Unit 1-2
	<u>Review 2nd Quarter:</u> The Sun's Energy Weather and Climate Earth's Structures and Changes	SC.6.E.7.1 SC.6.E.7.5 SC.6.E.7.2 SC.6.E.7.3 SC.6.E.7.6 SC.6.E.6.1 SC.6.E.6.2	Unit 3-4

	<u>Review 3rd Quarter:</u> Earth Systems and Patterns Cell's	SC.6.E.7.4 SC.6.E.7.9 SC.6.L.14.2 SC.6.L.14.3 SC.6.L.14.4	Unit 5-6
	<u>Review 4th Quarter:</u> Human Body Systems Classification	SC.6.L.14.1 SC.6.L.14.5 SC.6.L.14.6 SC.6.L.15.1	Unit 7-8
		CCE Exam	18-19 May