

**FOURTH GRADE SCIENCE
PACING GUIDE/PROGRESS MONITORING
2021 – 2022**




**WEST BOLIVAR
CONSOLIDATED SCHOOL DISTRICT**


FOURTH GRADE THEME: ENERGY AND CHANGE

BIG GOAL: Students will observe, research, and conduct investigations to discover patterns related to energy and change in the world around them.


FIRST NINE WEEKS					
WEEKS	INSTRUCTIONAL DAYS	PERFORMACNCE OBJ(S).	ACADEMIC FOCUS	OBJECTIVE STATEMENTS – MS CCRS	SCIENCE FUSION UNIT RESOURCES
AUG 5 – 13	7	SEP(s)	The Nature of Science: Science and Engineering Practices	SCIENCE AND ENGINEERING PRACTICES 1. Asking questions and defining problems 2. Planning and carrying out investigations 3. Analyzing and interpreting data 4. Developing and using models 5. Constructing explanations and designing solutions 6. Engaging in argument from evidence 7. Using mathematics and computational thinking 8. Obtaining, evaluating, and communicating information	TEACHER LED PROBLEM OR PROJECT-BASED LESSON
AUG 16 – SEPT 3	15	L.4.1.1 L.4.1.2 L.4.1.3	UNIT 1: The Human Body	L.4.1.1 Use technology or other resources to research and discover general system function (e.g., machines, water cycle) as they relate to human organ systems and identify organs that work together to create organ systems. L.4.1.2 Obtain and communicate data to describe patterns that indicate the nature of relationships between human organ systems, which interact with one another to control digestion, respiration, circulation, excretion, movement, coordination, and protection from infection. L.4.1.3 Construct models of organ systems (e.g. circulatory, digestive, respiratory, muscular, skeletal, nervous) to demonstrate both the unique function of the system and how multiple organs and organ systems work together to accomplish more complex functions.	GRADE 5: UNIT 3 LESSONS 1 – 6 PP. 101 – 168 GRADE 6: MODULE C
INSTRUCTIONAL DAYS					
12 INSTRUCTIONAL DAYS; UNIT REVIEW – 2 DAYS; UNIT TEST – 1 DAY					
SEPT 6 – 17	10	L.4.1.4 L.4.1.5	UNIT 2: Health and Medicine: Maintaining Hunan Body Systems	L.4.1.4 Research and communicate how noninfectious diseases (e.g. diabetes, heart disease) and infectious diseases (e.g. cold, flu) serve to disrupt the function of the body system. L.4.1.5 Using informational text, investigate how scientific fields, medical specialties, and research methods help us find new ways to maintain a healthy body and lifestyle (e.g. diet, exercise, vaccines, and mental health).	TEACHER LED PROBLEM OR PROJECT-BASED LESSON
INSTRUCTIONAL DAYS					
8 INSTRUCTIONAL DAYS; UNIT REVIEW – 1 DAY; UNIT TEST – 1 DAY					

SEPT 20 – 24	5	REVIEW		REVIEW – HUMAN BODY SYSTEMS	TEACHER LED PROBLEM OR PROJECT-BASED LESSON/REVIEW
SEPT 27 – OCT 1	5	REVIEW		REVIEW – HEALTH AND MEDICINE	TEACHER LED PROBLEM OR PROJECT-BASED LESSON/REVIEW
OCT 4 – 8	1 ST 9 WEEKS ASSESSMENT (CUMULATIVE UP TO THIS POINT)				

SECOND NINE WEEKS


WEEKS	INSTRUCTIONAL DAYS	PERFROMACNCE OBJ(S).	ACADEMIC FOCUS	OBJECTIVE STATEMENTS – MS CCRS	SCIENCE FUSION UNIT RESOURCES
OCT 11 – 22	10	L.4.2.1 L.4.2.2 L.4.1.4	UNIT 1: Life Cycles	L.4.2.1 Compare and contrast life cycles of familiar plants and animals. L.4.2.2 Develop and use models to explain the unique and diverse life cycles of organisms other than humans (e.g., flowering plants, frogs, or butterflies) including commonalities (e.g., birth, growth, reproduction, or death). L.4.1.4 Research and communicate how noninfectious diseases (e.g. diabetes, heart disease) and infectious diseases (e.g. cold, flu) serve to disrupt the function of the body systems.	GRADE 5: UNIT 4 LESSONS 3 – 6 PP. 191 – 240
INSTRUCTIONAL DAYS					
8 INSTRUCTIONAL DAYS; UNIT REVIEW – 1 DAY; UNIT TEST – 1 DAY					
OCT 25 – 29	5	E.4.9A.1	UNIT 2: Water Cycle	E.4.9A.1 Develop and use models to explain how the sun’s energy drives the water cycle. (e.g., evaporation, condensation, precipitation, transpiration, runoff, and groundwater).	GRADE 4: UNIT 5 LESSON 1 PP. 245 – 258
INSTRUCTIONAL DAYS					
3 INSTRUCTIONAL DAYS; UNIT REVIEW – 1 DAY; UNIT TEST – 1 DAY					
NOV 1 – 19	15	E.4.9B.1 E.4.9B.2 E.4.9B.3 P.4.6B.3	UNIT 3: Weather and Climate Patterns	E.4.9B.1 Analyze and interpret data (e.g., temperature, precipitation, wind speed/direction, relative humidity, or cloud types) to predict changes in weather over time. E.4.9B.2 Construct explanations about regional climate differences by analyzing maps and long-term data from various regions. E.4.9B.3 Design weather instruments utilized to measure weather conditions (e.g., barometer, hygrometer, rain gauge, anemometer, or wind vane). * P.4.6B.3 Develop and use models to communicate how light travels and behaves when it strikes an object, including reflection, refraction, and absorption.	GRADE 4: UNIT 5 LESSONS 2 – 4 PP. 259 – 288
INSTRUCTIONAL DAYS					
3 INSTRUCTIONAL DAYS; UNIT REVIEW – 1 DAY; UNIT TEST – 1 DAY					
NOV 22 – 26 THANKSGIVING BREAK					
NOV 29 – DEC 3	5	REVIEW		REVIEW LIFE CYCLES	TEACHER LED PROBLEM OR PROJECT-BASED LESSON/REVIEW
DEC 6 – 14	7	REVIEW		REVIEW WATER CYCLE (2 DAYS) REVIEW WEATHER AND CLIMATE PATTERNS (5 DAYS)	TEACHER LED PROBLEM OR PROJECT-BASED LESSON/REVIEW
DEC 15 – 21	2ND 9 WEEKS ASSESSMENT (CUMULATIVE UP TO THIS POINT)				
DEC 22 –JAN 4 WINTER BREAK					

THIRD NINE WEEKS

WEEKS	INSTRUCTIONAL DAYS	PERFROMACNCE OBJ(S).	ACADEMIC FOCUS	OBJECTIVE STATEMENTS – MS CCRS	SCIENCE FUSION UNIT RESOURCES	
JAN 6 – 28	15	E.4.9C.1 E.4.9C.2	UNIT 1: Natural Processes and Features	E.4.9C.1 Analyze and interpret data to describe and predict how natural processes (e.g., weathering, erosion, deposition, earthquakes, tsunamis, hurricanes, or storms) affect Earth’s surface. E.4.9C.2 Develop and use models of natural processes to explain the effect of the movement of water on the ocean shore zone, including beaches, barrier islands, estuaries, and inlets (e.g., marshes, bays, lagoons, fjord, or sound).	<u>GRADE 5: UNIT 8</u> LESSONS 1 – 3 PP. 365 – 402	
INSTRUCTIONAL DAYS						
12 INSTRUCTIONAL DAYS; UNIT REVIEW – 2 DAYS; UNIT TEST – 1 DAY						
JAN 31 – FEB 11	10	E.4.10.1 E.4.10.2	UNIT 3: Human Impact on the Environment	E.4.10.1 Organize simple data sets to compare energy and pollution output of various traditional, nonrenewable resources (e.g. coal, crude oil, wood). E.4.10.2 Use technology or informational text to investigate, evaluate, and communicate various forms of clean energy generation.	TEACHER LED PROBLEM OR PROJECT-BASED LESSON	
INSTRUCTIONAL DAYS						
8 INSTRUCTIONAL DAYS; UNIT REVIEW – 1 DAY; UNIT TEST – 1 DAY						
FEB 14 – 18	5	REVIEW		REVIEW – NATURAL PROCESSES AND FEATURES	TEACHER LED PROBLEM OR PROJECT-BASED LESSON/REVIEW	
FEB 21 – 25	5	REVIEW		REVIEW – HUMAN IMPACT ON THE ENVIRONMENT	TEACHER LED PROBLEM OR PROJECT-BASED LESSON/REVIEW	
FEB 28 - MAR 4	5	3RD 9 WEEKS ASSESSMENT (CUMULATIVE UP TO THIS POINT)				

FOURTH NINE WEEKS

WEEKS	INSTRUCTIONAL DAYS	PERFORMACNCE OBJ(S).	ACADEMIC FOCUS	OBJECTIVE STATEMENTS – MS CCRS	SCIENCE FUSION UNIT RESOURCES
MAR 7-11	5	P.4.6A.1 P.4.6A.2 P.4.6A.3	UNIT 1: Heat Energy	P.4.6A.1 Obtain and communicate information to compare how different processes (including burning, friction, and electricity) serve as sources of heat energy. P.4.6A.2 Plan and conduct scientific investigations to classify different materials as either an insulator or conductor of electricity. P.4.6A.3 Develop models demonstrating how heat and electrical energy can be transformed into other forms of energy (e.g., motion, sound, heat, or light). Focus on heat energy in this grouping.	<u>GRADE 4: UNIT 9</u> LESSONS 1 – 2 PP. 429 – 446 LESSONS 3 – 6 PP. 447 – 474
INSTRUCTIONAL DAYS					
3 INSTRUCTIONAL DAYS; UNIT REVIEW – 1 DAY; UNIT TEST – 1 DAY					
MAR 14 – 18					
SPRING BREAK					
MAR 21 – APR 1	10	P.4.6A.3 P.4.6A.4 P.4.6A.5	UNIT 2: Electrical Energy	P.4.6A.3 Develop models demonstrating how heat and electrical energy can be transformed into other forms of energy (e.g., motion, sound, heat, or light). Focus on electrical energy in this grouping. P.4.6A.4 Develop models that demonstrate the path of an electric current in a complete, simple circuit (e.g., lighting a light bulb or making a sound). P.4.6A.5 Use informational text and technology resources to communicate technological breakthroughs made by historical figures in electricity (e.g. Alessandro Volta, Michael Faraday, Nicola Tesla, Thomas Edison, incandescent light bulbs, batteries, Light Emitting Diodes) P.4.6A.6 Design a device that converts any form of energy to another form (e.g., construct a musical instrument that will convert vibrations to sound by controlling varying pitches, a solar oven that will convert energy from the sun to heat energy, or a simple circuit that can be used to complete a task).*	<u>GRADE 4: UNIT 9</u> LESSONS 1 – 2 PP. 429 – 446 <u>GRADE 4: UNIT 10</u> LESSONS 1 – 5 PP. 483 – 530
INSTRUCTIONAL DAYS					
8 INSTRUCTIONAL DAYS; UNIT REVIEW – 1 DAY; UNIT TEST – 1 DAY					
APR 4 – 15	10	P.4.6B.1 P.4.6B.2 P.4.6B.3 P.4.6B.4	UNIT 3: Light Energy	P.4.6B.1 Construct scientific evidence to support the claim that white light is made up of different colors. Include the work of Sir Isaac Newton to communicate results. P.4.6B.2 Obtain and communicate information to explain how the visibility of an object is related to light. P.4.6B.3 Develop and use models to communicate how light travels and behaves when it strikes an object, including reflection, refraction, and absorption. P.4.6B.4 Plan and conduct scientific investigations to explain how light behaves when it strikes transparent, translucent, and opaque materials.	<u>GRADE 5: UNIT 14</u> LESSONS 3 – 5 PP. 667 – 692
INSTRUCTIONAL DAYS					
8 INSTRUCTIONAL DAYS; UNIT REVIEW – 1 DAY; UNIT TEST – 1 DAY					
APR 18 – 29	10	P.4.6C.1 P.4.6C.2 P.4.6C.3	UNIT 4: Sound Energy	P.4.6C.1 Plan and conduct scientific investigations to test how different variables affect the properties of sound (i.e. pitch and volume).	<u>GRADE 5: UNIT 14</u> LESSONS 1 – 2 PP. 647 – 666

				<p>P.4.6C.2 In relation to how sound is perceived by humans, analyze and interpret data from observations and measurements to report how changes in vibration affect the pitch and volume of sound.</p> <p>P.4.6C.3 Obtain and communicate information about scientists who pioneered in the science of sound, (e.g., Alexander Graham Bell, Robert Boyle, Daniel Bernoulli, and Guglielmo Marconi).</p>	
INSTRUCTIONAL DAYS					
8 INSTRUCTIONAL DAYS; UNIT REVIEW – 1 DAY; UNIT TEST – 1 DAY					
MAY 2 – 6	5	REVIEW		REVIEW – HEAT AND LIGHT ENERGY	TEACHER LED PROBLEM OR PROJECT-BASED LESSON/REVIEW
MAY 9 - 13	5	REVIEW		REVIEW – ELECTRICAL AND SOUND ENERGY	TEACHER LED PROBLEM OR PROJECT-BASED LESSON/REVIEW
MAY 16 – 20	5	REVIEW SEPs 4TH TERM/FINAL ASSESSMENT			

*Enrichment objectives are marked with an asterisk. While they may not be tested per say, please use these performance objectives to explore and use their higher order thinking skills. Students should be provided a safe environment for failure without consequence, which is one of the most powerful drivers in learning. Providing many opportunities for students to fail, learn, and try again, with appropriate levels of support, fosters a deeper level of understanding and greater student interest and engagement. (MS CCRS, p. 13)