MOBILE COUNTY PUBLIC SCHOOLS
DIVISION OF CURRICULUM & INSTRUCTION
PACING GUIDE AT A GLANCE
2017-2018
Subject: _____**Physical Science**_____

Standard #	Quarter	Standards/Objectives
1	1 & 3	1. Use the periodic table as a model to predict the relative properties and trends (e.g., reactivity of metals; types of bonds formed, including ionic, covalent, and polar covalent; numbers of bonds formed; reactions with oxygen) of main group elements based on the patterns of valence electrons in atoms.
2	1 & 3	2. Plan and carry out investigations (e.g., squeezing a balloon, placing a balloon on ice) to identify the relationships that exist among the pressure, volume, density, and temperature of a confined gas.
3	1 & 3	3. Analyze and interpret data from a simple chemical reaction or combustion reaction involving main group elements.
5	1 & 3	5. Use mathematical representations to support and verify the claim that atoms, and therefore mass, are conserved during a simple chemical reaction.
4	1 & 3	4. Analyze and interpret data using acid-base indicators (e.g., color-changing markers, pH paper) to distinguish between acids and bases, including comparisons between strong and weak acids and bases.
6	1 & 3	6. Develop models to illustrate the concept of half-life for radioactive decay. a. Research and communicate information about types of naturally occurring radiation and their properties. b. Develop arguments for and against nuclear power generation compared to other types of power generation.
7	2 & 4	7. Analyze and interpret data for one- and two-dimensional motion applying basic concepts of distance, displacement, speed, velocity, and acceleration (e.g., velocity versus time graphs, displacement versus time graphs, acceleration versus time graphs).
8	2 & 4	8. Apply Newton's laws to predict the motion of a system by constructing force diagrams that identify the external forces acting on the system, including friction (e.g., a book on a table, an object being pushed across a floor, an accelerating car).
9	2 & 4	9. Use mathematical equations (e.g., $(m_1v_1 + m_2v_2)$ before = $(m_1v_1 + m_2v_2)$ after) and diagrams to explain that the total momentum of a system of objects is conserved when there is no net external force on the system. a. Use the laws of conservation of mechanical energy and momentum to predict the result of one-dimensional elastic collisions.
10	2 & 4	10. Construct simple series and parallel circuits containing resistors and batteries and apply Ohm's law to solve typical problems demonstrating the effect of changing values of resistors and voltages.
11	2 & 4	11. Design and conduct investigations to verify the law of conservation of energy, including transformations of potential energy, kinetic energy, thermal energy, and the effect of any work performed on or by the system.
12	2 & 4	12. Design, build, and test the ability of a device (e.g., Rube Goldberg devices, wind turbines, solar cells, solar ovens) to convert one form of energy into another form of energy.*
13	2 & 4	13. Use mathematical representations to demonstrate the relationships among wavelength, frequency, and speed of waves (e.g., the relation $v = \lambda f$) traveling in various media (e.g., electromagnetic radiation traveling in a vacuum and glass, sound waves traveling through air and water, seismic waves traveling through Earth).
14	2 & 4	14. Propose and defend a hypothesis based on information gathered from published materials (e.g., trade books, magazines, Internet resources, videos) for and against various claims for the safety of electromagnetic radiation.
15	2 & 4	15. Obtain and communicate information from published materials to explain how transmitting and receiving devices (e.g., cellular telephones, medical-imaging technology, solar cells, wireless Internet, scanners, Sound Navigation and Ranging [SONAR]) use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.