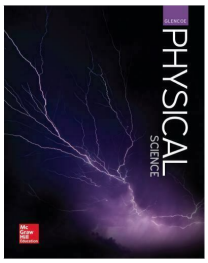
2023-24 Rock Hill Schools Physical Science Curriculum Map

Schedule	Standards		McGraw Hill Glencoe Physical Science	
Week 1 **Aug 21-25**	**Introduction** **Lab Safety** **Scientific Method** **Social** **Contracts/Expectations**		Scientific Process/Method Lab Safety Lab Equipment; signs Measurement and conversion factors Variables: DV, IV Scientific Method Lab	p. 6-13 p. 16T-20T p. 21-25 p. 26-34
Week 2 **Aug 28-Sep 1**	HS-PS1-1. Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms. HS-PS2-6. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.		Density Lab 1- Unit 1 Review Unit 1 Test/ feedback and results Career Project Due!	p. 498-507
Week 3 **Sep 4-8**	HS-PS2-6. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. HS-PS1-2. Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.		Structure of the atom Isotopes Periodic Table Properties and Trends Key Elements (1-20)	p. 488-495 p. 498-507 p. 496-497
Week 4 **Sep 11-15**	HS-PS2-6. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. HS-PS1-5. Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs. HS-PS3-2. Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects). [		Classification of Matter Kinetic Theory of Matter Physical and Chemical Properties	p. 460-467 p. 468-77

Week 5 **Sep 18-22**	HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles. HS-PS3-2. Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects).	States of Matter: solid, liquid, gas Thermal Energy	p. 428-433 p. 434-437
Week 6 **Sep 25-29**	HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles. HS-PS1-4. Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.	Stability in Bonding Ions, Valence, Chemical formula, chemical bonds Types of Bonds Ionic and covalent (LG 4.2) Bohr Model Naming Compounds and writing formulas Naming polyatomic ion	p. 556-557 p. 558-564 p. 565-571
Week 7 **Oct 2-6**	HS-PS1-2. Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties. HS-PS1-7. Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction. [	Chemical Reactions Balancing Reactions	p. 582-589 p. 590-600
Week 8 **Oct 9-13**	HS-PS1-6. Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium HS-PS1-8. Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.	Acids and Bases Nuclear Reactions Fission and Fusion	p. 590-597 p. 583-589
Week 9 **Oct 16-20**	**Oct 19 Mid-term Exam**	**Mid-term**	
Week 10 **Oct 23-27**	HS-PS3-2. Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects). HS-PS3-3. Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.	Energy Transformations of Energy Different types of Energy Work and Power	p. 100-105 p. 107-108 p. 120-130

Week 11 **Oct 30- Nov 3**	HS-PS3-1. Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known. HS-PS3-4. Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).	Thermal Energy definition Specific Heat Heat Flow Properties of Waves Mechanical vs. EM waves	p. 158-163 p. 174-179 p. 290-301 p. 302-310 p. 354-356 p. 384-388
Week 12 **Nov 6-10**	HS-PS4-1. Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. HS-PS4-2. Evaluate questions about the advantages of using digital transmission and storage of information. HS-PS4-3. Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other. HS-PS4-4. Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter. HS-PS4-5. Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.	EM Waves and Technology Assign Adopt an EM technology	p. 356-360 p. 360-365 p. 367-373
Week 13 **Nov 13-17**	HS-PS2-4. Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects HS-PS2-5. Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current. HS-PS3-5. Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.	Doppler Effect Non-contact Forces Electricity and Ohm's Law Practice Ohm's Law Power and electrical device	p. 331-332 p. 192-205
Week 14 **Nov 20-21**	HS-PS2-4. Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects	Magnetism Law of Universal Gravitation **Thanksgiving Break (Nov 22-24)**	p. 224-230 p. 75-81

Week 15 **Nov 27-Dec 1**	HS-PS2-1. Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration. HS-PS2-2. Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system	Distance, Displacement and Speed/Velocity Newton's 1st and 2nd Law	p. 38-45 p. 54-56
Week 16 **Dec 4-7**	HS-PS2-1. Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration. HS-PS2-2. Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system. HS-PS2-3. Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision	Continue 2nd Law Balanced and Unbalanced Forces Momentum and Collisions Newton's 3rd Law	p. 52-55 p. 68-74 p. 83-88
Week 17		**Review/Field Study**	
Week 18	**TBD**	**Final Exam**	