Thomas County Central High School
Regular Physical Science Syllabus

4686 U.S. Hwy 84 Bypass
Thomasville, GA 31792

229-225-5050
Mrs. Michele McCorkle
mmccorkle@tcjackets.net

Materials: Pen or pencil

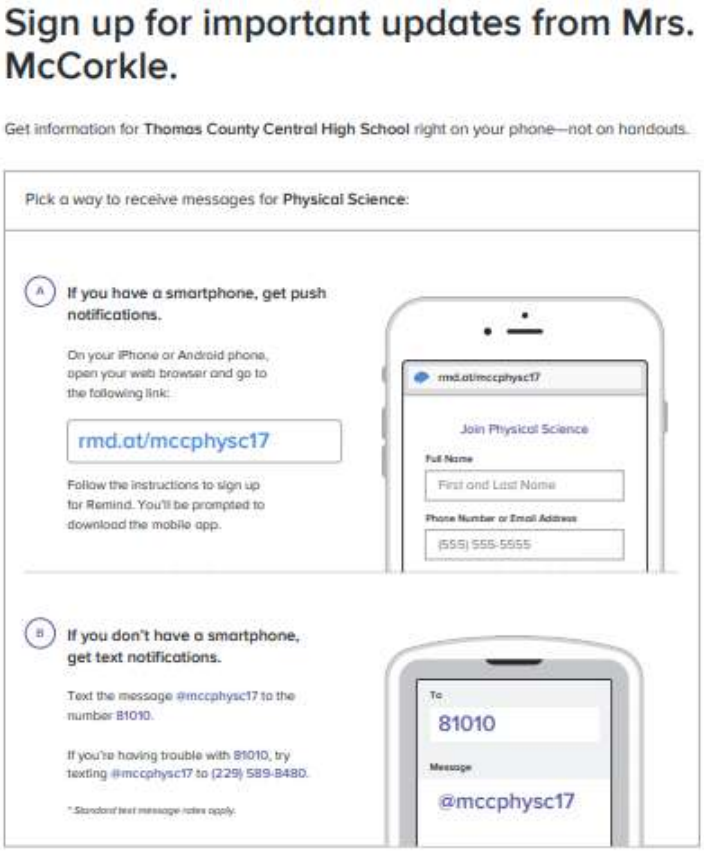
Three ring binder

Chromebook or personal laptop

Color pencils and color markers will be used in projects, but are not required.

Calculator with scientific functions (may be the same as your math class)

Textbooks: Pearson Concepts of Physical Science(Digital copy) and Physics of Superheros (replacement cost -$13.93)
(Students are responsible for books that they check out. They will be given an Indebtedness notice if not returned by the end of the year, which will need to be cleared to be able to march in graduation ceremony.)



Course Description: Physical Science is the study of matter and energy. Students in this course will be introduced to basic principles of chemistry and physics. The course will cover a variety of topics, including motion and forces, states of matter, atomic structure, the periodic table, electricity, and magnetism. Students are also required to read an outside novel as part of the Common Core Reading standards for science.

Rules:
Be on Time.
Be courteous to others
Follow all written and oral directions
Respect others and their property.
Obey all of the TCCHS handbook rules.

Zoom Rules:
Mute your audio when you join
Be sure to begin with your video on for attendance
Do NOT use cell phones or other electronic devices
"Raise Hand" to speak
Ask Questions in Chat
Don't Forget the 5 "P"s

1. Be Prompt
2. Be Prepared
3. Be Polite
4. Be Positive
5. Participate

Tutoring: I provide tutoring to all of my students before or after school by appointment only. Tutoring is available in the afternoon until 3:30. Students may stay longer in the afternoons only with prior notice and with transportation arrangements made in advance. It is important for students to master the concept before the day of the test and I would recommend students to come to tutoring if they are unable to complete a quiz or daily practice problem without the help of others.

Grading:	**Benchmark**	**20%**
	Tests	**30%**
	Daily	**25%**
	Labs	**25%**
		100%

Students will receive four nine-week averages, these nine week averages will average for the students two semester averages. There will not be any retakes on tests or other assignments. All students will also have an outside reading selection for physical science to cover the Common Core Literacy standards in science. Any major outside project or assignment that is turned in late will have a reduction of the final grade by ten points each day that the student fails to turn in the assignment. A failure to turn in a major project could result in a failing grade for the nine weeks and possibly the year.

Labs: All students are required to sign a lab safety contract at the beginning of the year. Please look for this in the first day materials. Labs are performed in group settings and as individuals. If the student doesn't turn in a paper as an individual or if the group doesn't turn in a paper a Missing grade will be given until the paper is turned in. Students who are absent on the day of a lab may be given a different assignment over the same standards to be completed at home.

Daily: Students may have homework assignments or classroom assignments that must be turned in at the beginning of class on the date that it is due. Students who are absent on the day of a quiz will have a missing grade in the computer and will be replaced by the student's final test grade for that unit. If a student has taken all of the quizzes I will replace the lowest quiz grade with their test grade if it is higher than the lowest quiz grade.

Tests: Tests are designed with multiple choice questions, constructed responses and word problems that will help prepare your student for the benchmark exams at the end of the first three nine weeks and will prepare them for their Benchmark test. If your student is absent on the day of the test, he or she can make an appointment to take the test before school, during class, or after school. If the student chooses to take the test during class, he or she will be responsible for the notes and assignments during that class period for homework. Cheating on a test by communicating with a student physically in the class or outside of the class electronically will result in a zero for the test grade.

Physical Science Pacing Guide 2020-2021

Unit	STANDARD	Estimated Time
1st 9 Weeks		
Motion (28%)	**SPS8. Obtain, evaluate, and communicate information to explain the relationships among force, mass, and motion.** a. Plan and carry out an investigation and analyze the motion of an object using mathematical and graphical models. (*Clarification statement:* Mathematical and graphical models could include distance, displacement, speed, velocity, time and acceleration.)	**3 Weeks**
Forces (28%)	**SPS8. Obtain, evaluate, and communicate information to explain the relationships among force, mass, and motion.** b. Construct an explanation based on experimental evidence to support the claims presented in Newton's three laws of motion. (*Clarification statement:* Evidence could demonstrate relationships among force, mass, velocity, and acceleration.) c. Analyze and interpret data to identify the relationship between mass and gravitational force for falling objects.	**3 Weeks**
Work & Machines (28%)	**SPS8. Obtain, evaluate, and communicate information to explain the relationships among force, mass, and motion.** d. Use mathematics and computational thinking to identify the relationships between work, mechanical advantage, and simple machines.	**2 Weeks**
2nd 9 Weeks		
Energy (28%) • Transformation • Thermal & Molecular Motion • Heat Capacity	**SPS7. Obtain, evaluate, and communicate information to explain transformations and flow of energy within a system.** a. Construct explanations for energy transformations within a system. (*Clarification statement:* Types of energy to be addressed include chemical, mechanical, electromagnetic, light, sound, thermal, electrical, and nuclear.) b. Plan and carry out investigations to describe how molecular motion relates to thermal energy changes in terms of conduction, convection, and radiation. c. Analyze and interpret specific heat data to justify the selection of a material for a practical application (e.g., insulators and cooking vessels).	**3 Weeks**
Waves (22%)	**SPS9. Obtain, evaluate, and communicate information to explain the properties of waves.** a. Analyze and interpret data to identify the relationships among wavelength, frequency, and energy in electromagnetic waves and amplitude and energy in mechanical waves. b. Ask questions to compare and contrast the characteristics of electromagnetic and mechanical waves. c. Develop models based on experimental evidence that illustrate the phenomena of reflection, refraction, interference, and diffraction. d. Analyze and interpret data to explain how different media affect the speed of sound and light waves. e. Develop and use models to explain the changes in sound waves associated with the Doppler Effect.	**3 Weeks**
Electricity & Magnetism (22%)	**SPS10. Obtain, evaluate, and communicate information to explain the properties of and relationships between electricity and magnetism.** a. Use mathematical and computational thinking to support a claim regarding relationships among voltage, current, and resistance. b. Develop and use models to illustrate and explain the conventional flow (direct and alternating) of current and the flow of electrons in simple series and parallel circuits. (*Clarification statement:* Advantages and disadvantages of series and parallel circuits should be addressed.) c. Plan and carry out investigations to determine the relationship between magnetism and the movement of electrical charge. (*Clarification statement:* Investigations could include electromagnets, simple motors, and generators.)	**2 Weeks**
3rd 9 weeks		
Matter (28%)	**SPS5. Obtain, evaluate, and communicate information to compare and contrast the phases of matter as they relate to atomic and molecular motion.** a. Ask questions to compare and contrast models depicting the particle arrangement and motion in solids, liquids, gases, and plasmas. b. Plan and carry out investigations to identify the relationships among temperature, pressure, volume, and density of gases in closed systems. (*Clarification statement:* Using specific Gas laws to perform calculations is beyond the scope of this standard; emphasis should focus on the conceptual understanding of the behavior of gases rather than calculations.) **SPS7. Obtain, evaluate, and communicate information to explain transformations and flow of energy within a system.**	2 weeks

	d. Analyze and interpret data to explain the flow of energy during phase changes using heating/cooling curves.	
Atoms (28%) • Atomic Structure • Isotopes • Patterns of Periodic table	**SPS1. Obtain, evaluate, and communicate information from the Periodic Table to explain the relative properties of elements based on patterns of atomic structure.** a. Develop and use models to compare and contrast the structure of atoms, ions and isotopes. (*Clarification statement:* Properties include atomic number, atomic mass and the location and charge of subatomic particles.) b. Analyze and interpret data to determine trends of the following: • Number of valence electrons • Types of ions formed by main group elements • Location and properties of metals, nonmetals, and metalloids • Phases at room temperature c. Use the Periodic Table as a model to predict the above properties of main group elements.	3 weeks
Bonding (28%)	**SPS2. Obtain, evaluate, and communicate information to explain how atoms bond to form stable compounds.** a. Analyze and interpret data to predict properties of ionic and covalent compounds. (*Clarification statement:* Properties are limited to types of bonds formed, elemental composition, melting point, boiling point, and conductivity.) b. Develop and use models to predict formulas for stable, binary ionic compounds based on balance of charges. c. Use the International Union of Pure and Applied Chemistry (IUPAC) nomenclature for translating between chemical names and chemical formulas. (*Clarification statement:* Limited to binary covalent and binary ionic, containing main group elements, compounds but excludes polyatomic ions.)	2 weeks
Reactions (22%)	**SPS3. Obtain, evaluate, and communicate information to support the Law of Conservation of Matter.** a. Plan and carry out investigations to generate evidence supporting the claim that mass is conserved during a chemical reaction. (*Clarification statement:* Limited to synthesis, decomposition, simple replacement, and double replacement reactions.) b. Develop and use a model of a chemical equation to illustrate how the total number of atoms is conserved during a chemical reaction. (*Clarification statement:* Limited to chemical equations that include binary ionic and covalent compounds and will not include equations containing polyatomic ions.)	2 weeks
4th 9 Weeks		
Solutions, Acids & Bases (22%)	**SPS6. Obtain, evaluate, and communicate information to explain the properties of solutions.** a. Develop and use models to explain the properties (solute/solvent, conductivity, and concentration) of solutions. b. Plan and carry out investigations to determine how temperature, surface area, and agitation affect the rate solutes dissolve in a specific solvent. c. Analyze and interpret data from a solubility curve to determine the effect of temperature on solubility. d. Obtain and communicate information to explain the relationship between the structure and properties (e.g., pH, and color change in the presence of an indicator) of acids and bases. (*Clarification statement:* Limited to only the structure of simple acids and bases (e.g., HCl and NaOH) that demonstrates the presence of an H^+ or OH^-. e. Plan and carry out investigations to detect patterns in order to classify common household substances as acidic, basic, or neutral.	4 weeks
Radioactivity (22%)	**SPS4. Obtain, evaluate, and communicate information to explain the changes in nuclear structure as a result of fission, fusion and radioactive decay.** a. Develop a model that illustrates how the nucleus changes as a result of fission and fusion. b. Use mathematics and computational thinking to explain the process of half-life as it relates to radioactive decay. (*Clarification statement:* Limited to calculations that include whole half-lives.) c. Construct arguments based on evidence about the applications, benefits, and problems of nuclear energy as an alternative energy source.	2 weeks

Syllabus and Contact Information

Please List the best way to be contacted during the day and evening hours.

Home Phone:_____

Cell Phone:_____

Work Phone:_____

E-mail:_____

I understand that the rules and requirements listed in the syllabus. I understand that my failure to uphold these rules and regulations could result in detention, parent conference, and/or referral to the administration.

Student's Name:_____

Student's Signature:_____

I understand the guidelines set in the syllabus. My child has read and fully understands the requirements in the class. I will give my child the appropriate support and guidance during the course.

Parent's Name:_____

Parent's Signature:_____

I will provide a safe, positive learning environment by upholding school policies set in the TCCHS student handbook. I will monitor your student's progress throughout the course and will provide updates on student's grades as needed.

Teacher's Names:____**Mrs. McCorkle** _____

Teacher's Signature:_____