

Physical Science

Syllabus 2026-2027

Teacher Name: Jeremy Kelly

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Teacher Availability:

7:15-7:45 every day, after 3:00 by appointment, and during 4th Block by appointment

Classroom Rules and Expectations/Discipline Policy:

- Be On Time
 - Come in, Put Cell phone in assigned slot, Get a textbook, Sit in your assigned seat and get out your Chromebook, Begin Bellwork
- Be Prepared
 - Bring ALL necessary materials to class with you!
- Be Respectful
 - Treat others as you would like to be treated.
- You are also expected to follow all other Giles County High School rules and policies.
- Tardies will be written up as a disciplinary action. It is your responsibility to be in class on time!
- If you have a cell phone during class, it will be taken to administration and kept until the end of the day!

Grading Policy:

Assessments(tests and quizzes)/Projects.....	45%
Classwork/Homework.....	55%

Discipline Policy:

Any violation of lab safety or classroom rules will result in a verbal warning or a referral to the school administration depending on the severity of the violation. Multiple violations, as well as any other violation of school rules as outlined in the school board policies will also be referred to the school administration.

Instructional Materials:

Giles County High will make instructional materials available for review within 10 days of a written parental request.

Classroom Supply List:

- Charged Chromebook
- 1" Binder with pockets
- Paper
- Pencils

Major Assignments and Field Trips (if applicable):

Students will have numerous formative assessments throughout the semester to check for understanding of the material. These will be in the form of orally answering questions during class, essay writing assignments, Kahoot, Quizizz, and Gimkit assignments, and practice assignments. At the end of each unit, there will be a summative assessment given. This will be in the form of tests or quizzes that include multiple choice, short answer, true/false, matching, drawing and labeling, and long answer questions. There will also be labs/projects that apply the concepts that we are learning in class.

Standards/Topics Covered:

- Lab Safety
- Scientific Method
- Interpreting Graphs
- Standards of Measurement
- Unit Conversions
- Waves and their applications
- Motion and Stability
- Forces and their interactions
- Types of Energy
- Properties and States of Matter
- Gas Laws
- Atomic Structure
- Periodic Table
- Naming Compounds
- Balancing Equations
- Chemical Reactions
- Acids and Bases

Unit	Time Frame	Standards	Major Topics/Concepts: Motion and Forces
Unit 1 Module 1	7 days	<i>No Specific Physical Science Standards... Science and engineering practices are embedded throughout the content standards.</i>	- Identify safe and unsafe behaviors in a given scenario. - Identify and describe the use of lab equipment given a picture or actual piece of equipment. Given data, be able to determine if it is accurate, precise, or both. - Be able to use the SI measurement system, convert between units, and utilize Dimensional Analysis when necessary. - Given a sample experiment, be able to write a hypothesis and identify the independent variable, dependent variable, constants, control group, and experimental group(s). - Be able to organize data from an experiment in a chart, table, or graph and interpret it.
CFA 1			August 18
Module 2	2 days	PS2.1	- Distinguish between distance and displacement. - Clarify the difference between speed and velocity. - Calculate speed, distance and displacement
	2 day	PS2.2	- Use dimensional analysis (from Unit 1) to convert speed and velocity units. - Calculate velocity and acceleration
CFA 2			August 25
Module 3	1 day	PS2.4	- Explore types and characteristics of forces. - Explore Newton's laws of motion.
	1 day	PS2.3	- Explore the interactions between force, acceleration, and momentum.
	3 days	PS2.5	- Design, evaluate, and refine a device that minimizes the force on an object during a collision.
CFA 3			September 1

Unit	Time Frame	Standards	Major Topics/Concepts: Energy
Unit 2 Module 4	3 days	PS3.3	- Design, build, and refine a device within design constraints that has a series of simple machines.
	1 days	PS3.1	- Use mathematical and computational thinking to solve problems regarding the work-energy theorem and power using various forms of energy (e.g., kinetic, gravitational potential, elastic potential),

	1 days	PS3.4	- Plan and carry out an investigation to examine the relationships among kinetic, potential, and total energy within a closed system (i.e., the Law of Conservation of Energy).
CFA 4			September 9
Module 5	2 days	PS3.2	- Plan and conduct an investigation to provide evidence that thermal energy will move as heat between objects of two different temperatures, resulting in a more uniform energy distribution among objects.
	1 days	PS3.4	- Plan and carry out an investigation to examine the relationships among kinetic, potential, and total energy within a closed system (i.e., the Law of Conservation of Energy).
CFA 5			September 14
Module 6	3 days	PS3.5	- Design, build, and construct simple series circuits and simple parallel circuits using Ohm's Law.
CFA 6			September 17
Module 7	4 days	PS2.6	- Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field.
CFA 7			September 23

Unit	Time Frame	Standards	Major Topics/Concepts: Waves
Unit 3 Module 9	3 days	PS4.1	- Construct an explanation to compare and contrast the properties of transverse and longitudinal waves, including examples of each.
CFA 8			September 28
Module 11	3 days	PS4.2	- Obtain, evaluate, and communicate information to describe the similarities and differences across the electromagnetic spectrum, including devices used to measure the characteristics of the electromagnetic spectrum.
CFA 9			October 2
Unit	Time Frame	Standards	Major Topics/Concepts: Matter
Unit 4 Module 13	3 days	PS1.1 PS1.2	- Students will explore the kinetic theory and how it connects the arrangement and behavior of atoms, ions, and molecules to the common states of matter. - Students will explore the properties and behavior of fluids, including three of the major principles that describe fluids-Archimedes', Pascal's, and

			Bernoulli's. - Students will explore how gases are affected by changes in pressure, volume, and temperature. They will apply Boyle's and Charles's laws to calculate how one variable responds to changes in another.
CFA 10			October 15
Module 14	2 days	PS1.1 PS1.3 PS1.7	- Use a model to explain the changes of state of solids, liquids, gases, and plasma using the kinetic molecular theory and heat flow considerations. - Engage in an argument from evidence to explain physical and chemical changes. - Develop, or use, a model to illustrate the claim that atoms and mass are conserved during a chemical reaction (i.e., balancing chemical equations).
CFA 11			October 19
Module 15	4 days	PS1.4 PS1.5	- Use a model to predict the relative properties of elements on the periodic table. - Predict how elements may combine using the patterns of electrons in the outermost energy level.
CFA 12			October 23

Module 16	3 days	PS1.3 PS1.4 PS1.5	- Students will explore metals and their properties. - Students will explore nonmetals and their properties. - Students will explore mixed groups, semiconductors, and metalloids.
CFA 13			October 29
Unit	Time Frame	Standards	Major Topics/Concepts: Reactions
Unit 5 Module 17	4 days	PS1.4 PS1.5 PS1.6 PS1.7	- Students will explore how and why compounds form. - Students will explore ionic and covalent bonds. - Students will explore methods for writing chemical formulas, the importance of oxidation numbers, and how to name polyatomic ions.
CFA 14			November 6
Module 18	3 days	PS1.3 PS1.7	- Students will explore chemical reactions. - Students will explore the different types of chemical reactions. - Students will explore the relationships between chemical reactions and energy.

			- Students will explore reaction rates and equilibria.
CFA 15			November 12
Unit	Time Frame	Standards	Major Topics/Concepts: Applications of Chemistry
Unit 6 Module 21	3 days	PS1.7 PS1.8	- Students will explore acids and bases. - Students will explore what makes an acid or a base either strong or weak. - Students will explore what a salt is and how it forms.
CFA 16			November 18
Module 22	4 days	PS1.3 PS1.5	- Understand organic compounds and hydrocarbons. - Explore substituted hydrocarbons. - Understand how organic compounds can combine to form polymers. - Explore the four major types of biological molecules.
CFA 17			December 1