**Physical Science Syllabus**

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**Planning Period:** 1st semester = 2nd pd 2nd semester = 3rd pd

**Website link:** [**www.rogersphysicalscience.weebly.com**](http://www.rogersphysicalscience.weebly.com)

**Course Description**: Physical Science is a course in which the student will engage in scientific inquiry, demonstrate proficiency in scientific disciplines, and acquire the facts, concepts, principles and approaches through which one can understand the interactions of nonliving matter, its expression of energy, and its relationship to the universe.

**Curriculum:** There are three major areas of study in this course, but they will interact and overlap.

1) **Scientific Methods of Investigation & Measurement-** conversions, laboratory safety, & foundations of inquiry.

2) **The Foundations of Physics**- motion, waves, sound, light, electricity, power and vector motion

3) **The Chemical World**- atomic theory, elements, particle motion, solutions, reactions, acid-base chemistry, and radioactivity.

**Course Scope and Sequence**

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| --- | --- | --- |
| **1st Six Weeks (25% of grade)** | **2nd Six Weeks (25% of grade)** | **3rd Six Weeks (25% of grade)** |
| Content:  **Introduction to Science**   * Measure * Convert * Lab Safety * Density   **Assessment**  **Goal: 1.11 & 1.1.2**   * Motion * Speed * Acceleration (calculations & graphing)   **Assessment**  **Goal: 1.2.1 & 1.2.2 & 1.2.3**   * Forces * Gravity * Friction Types   **Assessment**  **Goal:** **3.1.1 -3.1.4**   * Energy and Heat * Law of Conservation of Energy * Work, Power, Simple Machines   **Assessment** | Content:  **Goal: 3.2.1-3.2.4**   * Waves-transverse, longitudinal (compression), wave parts, velocity, identification, particle direction * Electromagnetic   **Assessment**  **Goal 2.22 & 2.2.3; 2.1.1 & 2.1.2**   * Matter * States Of Matter * Solubility Curves * Solutions * Physical & Chemical Changes   **Assessment**  **Goal 2.1.4 & 2.2.1**   * Atoms * Bohr Models * Periodic Tables * Lewis Dot Structures * Radiation (alpha, beta, gamma) * Half-lives   **Assessment** | Content:  **Goal: 2.2.1-2.2.5**   * Chemical Bonding (ionic) * Chemical Bonding (covalent and metallic) * Nomenclature * Balancing Chemical Equations * Types of Chemical Reactions   **Assessment**  **Goal: 2.2.6; 2.3**   * Acids & Bases * Radiation   **Assessment**  **Goal 3.3**   * Electricity * Magnetism   **Assessment**  Review days  **Exam**  Administered last 5 days of semester  **(25% of grade)** |

**Moving to College and Career Readiness**: Students will use scientific instruments, equipment and computers to research, gather information, analyze, and discuss the data from laboratory and class activities. Students will present data and conclusions from the learning activities orally and written. Collaboration and group work during labs and presentations are important to discovering and learning the content.

* **Modeling Physical Science:** Instruction is organized into [***modeling cycles***](http://modeling.asu.edu/modeling/mod_cycle.html)which move students through all phases of model development, evaluation and application in concrete situations -- thus promoting an integrated understanding of modeling processes and acquisition of coordinated modeling skills.
* The teacher sets the stage for student activities, typically with a demonstration and class discussion to establish common understanding of a question to be asked of nature. Then, in small groups, students ***collaborate*** in planning and conducting experiments to answer or clarify the question.
* Students are required to present and justify their conclusions in oral and/or written form, including a ***formulation*** of models for the phenomena in question and ***evaluation*** of the models by comparison with data.
* Technical terms and concepts are introduced by the teacher only as they are needed to sharpen models, facilitate modeling activities and improve the quality of discourse.
* The teacher is prepared with a definite ***agenda*** for student progress and ***guides*** student inquiry and discussion in that direction with "Socratic" questioning and remarks.
* The teacher is equipped with a ***taxonomy*** of typical student misconceptions to be addressed as students are induced to articulate, analyze and justify their personal beliefs. (http://modeling.asu.edu/modeling/synopsis.html)

Since most students may not be accustomed to this style of teaching and responses to questions, they may exhibit signs of frustration. However, with cooperation, patience and effort they may discover they have a greater understanding and better retention of the scientific concepts than with traditional teacher led classes.

**Text(s) & Resources**: *Glencoe Physical Science 2012© ISBN978-0-07-894583-0*. Textbooks will be used as general reference materials in the class. Students will be issued a text per student/parent requests and/or teacher referral. Access codes to the online textbook and activities will be provided.

**Grading Policy**: Unit Assessments 40% Independent Practice 30% Learning Activities: 30%

Tests & Student Notebook Quizzes, Labs, Projects Homework , Classwork,

**A = 100- 90 B = 89 - 80 C 79 - 70 D = 69 - 60 F < 59.5**

**Preparation for the Measurement of Student Learning Exam**

**Grading Policy (cont.)**: Following each goal, students will have a unit assessment which tests the concepts taught of the current unit. In order to prepare for the exam each test may contain reinforcement questions from previous goals. Test will be announced at least three days before it is administered. All projects, E-learning activities, lab reports and homework are due on their due date.

**Make-Up Work Policy:**

Students with excused absence(s) have 3 days to complete their assignments and update the ISN.

Students with excessive unexcused absences may lose their privilege to due make-up assignments. Teacher/Parent contact required regarding unexcused absences and assignments.

Students are responsible for obtaining the material in order to complete their missed assignments.

**Late work Policy**: Students should be advised that late work is unacceptable; the expectation is that students complete their work in a timely fashion. Due to a large amount of grading, discussion and correction of homework assignments in class, late work will receive a maximum score of **53**. This is the only time a **53** will appear as a grade.

**Progress reports:**  Progress reports will be issued every three weeks. Grades will be updated weekly (every Wednesday) in PAM.

**PowerSchool Parental Portal Information**: Parents are encouraged to sign up for the PowerSchool Parent Portal. Please see the data manager, Mrs. Angela Collins, in our guidance office, to acquire your account information. The Parent Portal, allows you to have access to your students’ grades, upcoming assignments, class average, absences, GPA, etc. Please call or email me if you have questions about your student’s progress in my course.

**Absentee and Tardy Policies**:

I will abide and follow the HCHS Attendance and Tardy Policies as outlined in the HCHS Student Handbook.

Students must be in their seats when the tardy bell rings.

**20/20** **Rule:**  During the first and last 20 minutes of class no hall passes will be issued. Students must stay in class.

**Restroom Policy**: Three passes for each 6 weeks; passes located in the student’s notebook, do not interrupt Mr. Rogers during instruction; bring the completed pass to the teacher to sign; sign the notebook to check out and sign back in upon returning. If a student needs more passes a doctor’s note may be required.

**Extra Help**:

Tutoring will be offered on your student’s scheduled day during Power Block. I may be available after school for additional tutoring by request. No after school sessions on Tuesdays.

\*\*\*Note during power block/tutoring only students in physical science classes may attend.\*\*\*

**Computers and Electronic Devices:**

**Cell Phones** and electronic devices are not to be used or seen during the class. Each student is expected to place their phone into the provided numbered envelope and place it in the designated box. If a student chooses not to follow this procedure and the device is rings, vibrates or is used, a school administrator will be called and the student will be escorted out of class.

**Computers** will be used to enhance the course. Students must stay on the website that is to be used for the lesson. Failure to do this may result in a loss of computer privileges.

**Expected Policies in the Classroom and Laboratory**:

* You are expected to remain QUIET while the teacher, announcements or someone else (e.g. another student, visitor, etc.) is addressing the class.
* Your behavior in class and lab is expected be good natured, courteous, mature, and respectful of all others.
* You are expected to class prepared! This includes completed homework, notebook, paper, writing utensils, and any other necessary materials when you enter the classroom. You will not be allowed to return to your locker for anything.
* You are expected to be in your seat by the time the bell to start the class rings or you will be considered tardy. Running in to the class at the last second is a safety hazard and will not be tolerated.
* Appropriate behavior is expected at all times. The use of foul or vulgar language is inexcusable and will not be tolerated. Horseplay and foolishness will not be tolerated, nor will hurtful comments or coarse jokes.
* There will be absolutely no eating or drinking (except clear bottled water) in class. Anyone caught eating or drinking in class will be asked to put it away and may be subject to administrative action.
* Apart from school issued computers, the use of all other electronic devices is strictly prohibited. All cell phones are to be rendered upon entering the classroom by placing them in the designated location. If you fail to do so and your cell phone is visible during class, you will be asked to place it in the designated location. If you do not comply with the request, an administrator will be summoned immediately and your phone confiscated.
* Computers will be used to enhance the class. Students must stay on the assigned website. Failure to do so may result in a loss of computer privileges.
* Following an absence, it is your responsibility to obtain any missed assignments and to make up any missed quizzes and or tests. There is no excuse for anyone not completing their makeup work in a timely manner following an absence. You have THREE days to make up quizzes and tests. Late work is subject to grade reduction (maximum 53) at the discretion of the teacher.
* Cheating on tests, quizzes, homework or any other critical assignment, will result in an automatic “0” on that assignment and expect parents to be notified of the situation.
* It is expected for all of us to keep our classroom clean. Please place all trash in the trash can and tidy up around your space before you leave.
* Students are expected to do their own work at all times! Students will be allowed to work in groups, but all write ups and graded assignments must be done individually (unless specifically stated by the teacher).
* If I notice that your homework and class work is not turned in, the quality of work and grades are deteriorating, or if you do very poorly on tests, I will contact your parents/guardians. We all want you to be successful. If you are having difficulty assist me by informing me. A private email (harnettstudent accounts only – crogers@harenttstudents.org), or a note discreetly left for me to read can initiate extra assistance, discussion for changes to instruction, tutoring, etc.
* Please take care of your water and restroom needs prior to or after class. You will be allowed to go to the restroom when there is an emergency. Use your passes wisely. Failure to go directly to the bathroom or water fountains on our hall may result in the loss of unused passes. You will not be allowed to leave the classroom 20 minutes after the class starts or 20 minutes before it ends.
* You are expected to take care of all materials and classroom items. Take pride in the supplies we have.

Everything we do in life has consequences, including your behavior. Violation of the basic rules of the class will be dealt with in the manner described below. **Of course there are behaviors that will warrant an immediate administrative write-up. Examples of this include gross insubordination or violent behavior.**

1st: Verbal warning

2nd: Phone call home

3rd: Parent/teacher conference

4th: Administrative write up

As a general rule treat each person with respect, keep hands, feet and negative, degrading, unwanted comments to yourself. You will get as much out of learning the concepts in Physical Science as you choose to put into it.

**Helpful Websites**: <http://phet.colorado.edu/> <http://funbasedlearning.com/> <https://www.khanacademy.org/>

The Science Olympiad Teams will be learning, training and competing this year. Please let me know if you are interested in joining this club/team.

Parents who have experience and expertise in a field of science are encouraged to assist our students.