

# Physical Science A

## Course Syllabus

**Dr. Briggs**

email: wbriggs@bonnyeagle.org; web: DrBriggsScience.weebly.com  
phone: (207) 642-9080 ext. 917

### Course Description

**Physical Science A** is a chemistry course intended to meet the needs of students entering the work force or a 2-year college. This course is not intended to meet admission requirements for a four-year college program. This chemistry course introduces students to the modern science of the atom. We investigate matter in both the macro and microcosms. The study of atomic structure is applied to the properties and reactions of matter. This course uses the laboratory to develop concepts, solve real problems and investigate types of chemical reactions. Students maintain a required portfolio notebook of their laboratory work. Students will learn to make accurate observations, record and analyze data, write conclusions, write formulas for chemical compounds, write equations for chemical reactions and perform first level chemical problems. **Students must also take Physical Science B to meet graduation requirements.**

**Prerequisite:** Lab Biology or Lab Earth Science

### Schedule

days	Topics	Chapter	Standard
8	Intro to Chemistry & Science	1, 2	
10	Properties & Behavior of Matter	3, 4	
6	Atoms	5	
6	Periodic Table	6	PS1-1
7	Chemical Bonding	7	PS1-3
6	Chemical Reactions	8	PS1-2, PS1-4
6	Nuclear Chemistry	11	PS1-8
5	Electromagnetic Radiation	21	PS4-1, PS4-3
4	Thermal Energy	18.1, 18.2	PS3-4
5	Catch up, Final Project? & Review for Final Exam		

Textbook: CK-12 Physical Science (get through DrBriggsScience.weebly.com)

## **Materials** - Be Prepared!

- Paper for taking notes and assignments
- Pencil and/or pen
- Agenda Book
- 3-ring binder
- Handouts you will receive
- Laptop computer

## **Grading:**

<b>Category</b>	<b>Percent</b>
Homework	20
Labs	20
Quizzes	30
Tests	30
Final Exam	20% of course grade

## **Late/Missing Work Policy**

- Late homework and other assignments may or may not be accepted at the teacher's discretion.
- Late work, if accepted, will receive a reduced grade.

## **Attendance**

- Attending class is very important to keep up.
- If you have more than 4 unexcused absences you will not receive credit for the class.
- If you are absent, you are still responsible for missed work. Follow the Standard Operating Procedure (SOP) as discussed in class.

## **Academic Dishonesty & Plagiarism**

If there is evidence of academic dishonesty, such as copying another student's assignment, both students involved will receive zero (0) points for the assignment. Student's suspected of cheating during class tests and quizzes, or providing answers will also receive a zero. Please protect your materials and assignments, and discourage "wandering eyes" while completing these exams!

The Internet provides many scientific resources. However, **WHENEVER** written work or ideas that are not your own are used, you must cite your sources. The BEHS library webpage has links to help with citations. Please review the policy outlined in the student handbook.

Extenuating circumstances will be addressed with students individually. Students are always welcome and encouraged to discuss any of these policies with me.

## Standards for Physical Science A

- 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-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-PS1-3. 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. (IMFs)
- HS-PS1-4. (Energy of Reactions) 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.
- 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.
- 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).
- 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-PS4-3. 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.