

Physical Science Syllabus

Teacher:

Mrs. Mazurek

Plan:

Per. 2 M-F

COURSE DESCRIPTION:

Physical Science is the beginning study of chemistry and physics in the high school. The course introduces fundamental concepts that will form the foundation for chemistry and physics courses that students may elect to take their junior and senior year.

COURSE GOALS:

The course will be separated into two semesters: one semester will cover the chemistry topics and the other semester will cover the physics topics. Chemistry topics in this course will include unit conversions, organization and structure of matter, the Periodic Table and trends, chemical formulas, and the mole concept. Physics topics in this course will include graphing, motion, forces, momentum, and center of gravity.

Physical science is a quantitative science, which means that most of its topics are based on mathematical reasoning and experimental data. Therefore, you will be exposed to the concepts through a variety of ways, including readings, lecture, writing, discussions, demonstrations, word problems, and group activities. You will develop skills of analyzing, problem-solving and communication, which will help you be successful in future science classes and beyond high school.

CLASS MATERIALS:

Textbooks:

Conceptual Physics. Paul G. Hewitt. Prentice Hall. 2006.

Chemistry: Matter and Change. Glencoe.

www.physicsclassroom.com (This excellent website will be used to supplement class material.)

You must have the following:

- a. Scientific Calculator (for Chemistry component)
- b. 3-ring binder as a notebook

HOMEWORK POLICY:

1. Homework will be accepted ONE DAY late with a 50% deduction.
2. If you are absent, it is **your responsibility** to find out what assignments/notes you missed and when they are due. All assignments are posted on Edmodo daily. Worksheets handed out while you are absent are placed in the tray for your class.
3. If you are present when an assignment was made but absent on the day it was due, you must turn it in the day you return to school.
4. If you are absent when the assignment was made, you have the same number of days as you were absent to complete it. See the Student Handbook for more on this policy.
5. Copying homework from someone else will result in a grade of “zero” for all involved.
6. I will make exceptions for unusual circumstances, but you must meet with me before coming to class to make arrangements.
7. Any student who is failing will participate in the S.O.S. program. You can only receive S.O.S credit [60% maximum] for assignments missed from the week prior to receiving S.O.S. notification.

TEST POLICY:

1. If you are present when the test is announced but absent on the day before the test, you will take the test as scheduled.
2. If you are absent on the day of the test, you will take the test the day you return to school.
3. Make-up tests may be a different format from the original test.
4. I will make exceptions for unusual circumstances, but you must meet with me before coming to class to make arrangements.

ASSESSMENT AND EVALUATION:

The school's grade scale will be used.

Your grades will be calculated using the following categories and weights:

| | |
|--|-----|
| Tests/Quizzes..... | 50% |
| Participation..... | 5% |
| Homework..... | 20% |
| Classwork (Labs, writing assignments)..... | 25% |

I reserve the right to make positive adjustments to borderline grades at the end of a marking period. In order to achieve the higher letter grade, I want to see that you have given extra effort by participating in class discussion, exercising safety in the labs, and maintaining positive behaviors in my classroom.

MY EXPECTATIONS OF YOU:

1. Be on time.

- Be ready to start class when the late bell rings.
- Complete all work and turn it in on the due date.

2. Be prepared.

- Bring book [covered], binder, pen [not red] or pencil, and anything else you need for class.
- Complete any reading assignments prior to class and come prepared with questions about material you do not understand.

3. Be respectful.

- Listen while I am teaching or while someone else is asking or answering a question.
- Treat others with the same respect that you expect.
- Treat our room and any projects like they were your own.

4. Be responsible.

- Do your best.
- Take ownership of your decisions and actions. Don't make excuses.
- If you need help, ask for it. Stay after school if needed.
- If there is a problem, talk to me right away so that we can find a solution.
- Accidents happen in the lab. Inform me right away if there is an accident. You are responsible for the replacement cost of all school equipment in the classroom for which you have broken.

ASSISTANCE:

I will be available after school for tutoring, following the S.O.S. schedule. If you need to stay on a different day, please make arrangements with me. I may not always be available on the same day that you ask to stay.

If your parents need to contact me for any reason, I may be reached at 724-962-7861 (x1073) or by e-mail (amazurek@sasdpride.org)

PLANNED SEQUENCE OF INSTRUCTIONAL TOPICS:

Introduction

1. Measurement
 - a. SI and measurement
 - b. Significant figures
 - c. Scientific notation
 - d. Dimensional analysis
 - e. Reliability of measurements
2. Graphing
 - a. Generating graphs
 - b. Interpreting types of graphs
 - c. Determining relationships from graphs
 - d. Writing equations from graphs
 - e. Scientific method

Chemistry Component

1. Matter (Chapter 3)
 - a. Organization
 - b. Physical properties/physical changes
 - c. Chemical properties/chemical changes
2. Atomic Structure (Chapter 4)
 - a. Atomic theories
 - b. Structure of atom
 - c. Isotopes – weighted averages
 - d. Radioactivity
3. Names and formulas for ionic compounds (Chapter 8.3)
4. Names and formulas for molecules (Chapter 9.2)
5. Mole concept (Chapter 11)
 - a. Compound stoichiometry
 - b. Percent composition
 - c. Empirical formulas
 - d. Molecular formulas
6. Elements (Chapter 7)
 - a. Project-based
7. Periodic Table (Chapter 6)

Physics Component

1. Motion: One-dimensional (Chapter 2)
 - a. Scalars vs. vectors
 - b. Distance, displacement, speed, velocity and acceleration
 - c. Measuring motion
 - d. Interpreting graphs of position vs. time
 - e. Calculations using speed and acceleration equations
2. Forces (Chapters 4,5,6)
 - a. Types of forces
 - b. Free-body diagrams
 - c. Newton's laws of motion
 - d. Measuring force
 - e. Calculations using Newton's laws of motion
3. Momentum (Chapter 7)
 - a. Impulse-momentum theorem
 - b. Law of conservation of linear momentum
 - c. Calculations using impulse-momentum theorem and law of conservation of linear momentum
4. Center of Gravity and Torque (Chapters 10,11)
 - a. Finding the center of gravity
 - b. Center of gravity of objects
 - c. Torque and rotational motion
 - d. Calculating torque

Physical Science Syllabus

- Please review the syllabus handed out in class. Then complete the following information, including student and parent signatures, and return this page to Mrs. Mazurek by Friday, September 5, 2014.
- By signing this form, you are indicating that you have read and understand the information given in the syllabus for this class.
- The information also gives me a way to contact you if necessary.
- Please contact me any time you have a question or concern. I may be reached at 724-962-7861 (x1073) or by e-mail (amazurek@sasdpride.org).
- Thank you in advance for your time and cooperation in this communication.

Date: _____

Student Name (print): _____

Student Grade: _____

Student Signature: _____

Parent/Guardian Name (print): _____

Contact Information (Please circle your preference):

Phone: _____

E-mail: _____

Parent/Guardian Signature: _____