

# Standard Chemistry

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## My Schedule

1<sup>st</sup> – Standard Chemistry

2<sup>nd</sup> – Standard Chemistry

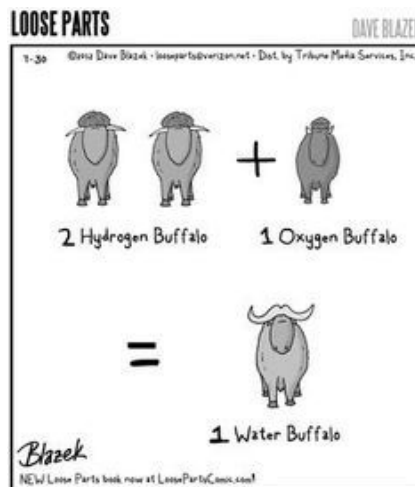
3<sup>rd</sup> – Prep

4<sup>th</sup> – Prep

5<sup>th</sup> – Biology

6<sup>th</sup> – Conceptual Physics

7<sup>th</sup> – Standard Chemistry



Chemistry

## Course Description:

The materials for this course were developed under the sponsorship of the American Chemical Society. Chem Com is a suitable choice for college bound students who do not intend to major in chemistry or engineering. The chemistry concepts that are introduced are considered essential knowledge for the citizen who is concerned with a wide range of local and global issues. Chem Com is designed to develop and improve students' problem-solving and decision making skills.

The style of teaching that I utilize in this class includes asking lots of questions to aid the student in their understanding, as well as help me to determine where students may be struggling. I use socratic questioning as an approach to difficult concepts by outlining them and pursuing misconceptions. All questions are meant to aid learning.

Units Covered: Water: Exploring Solutions; Materials: Structure and Uses; Petroleum: Breaking and Making Bonds; & Atoms: Nuclear Interactions

Prerequisites: Standard or Honors Biology, Elementary Algebra

Text: Chem Com: Chemistry in the Community, fifth edition, American Chemical Society

Supplies: binder/folder, notebook/paper, calculator, writing tool, iPad

Classroom Rules (all handbook rules apply):

1. Follow directions the first time that they are given.
2. Come to class prepared: writing utensil, homework/notes, paper, calculator, & book
3. Maintain a productive learning environment, including using the iPads appropriately
4. Respect yourself and others, including not talking while others are speaking.
5. Be in your seat before the bell rings.

### **Homework:**

Homework is given as a means of practice and may not always be collected for a grade. All assignments must have your name and date at the top of the page. Show ALL your mathematical work and label your answer correctly for full credit. Assignments will be discussed, checked, and/or collected on the given due date at the beginning of the hour. It is your responsibility to complete all of the homework on time. Late homework will receive 50% credit.

The purpose of homework is to reinforce what was taught in class and to check your understanding of the material. Completing your own homework is vital to your comprehension. If an assignment is difficult, ask me for help. Some homework may introduce new material. Reading the book will be important in the next class discussion and your understanding of the new material.

### **Missing a Class**

You are responsible for handing in any work that was due during the missed class. You are also responsible for checking with the teacher (emailing works well), accessing Google Classroom, and asking a classmate about missed assignments. You can get handouts from a peer or the teacher. Your make-up days for assignments are described in the handbook.

### **Labs:**

**Pre-Lab:** Prior to beginning each lab, students are expected to read the experimental directions and complete a "Pre-Lab". These are online questions completed by reading the lab. You will state the purpose, note safety precautions, list chemicals and supplies, and answer a few procedural questions. Failure to complete a pre-lab requires an alternative library research assignment in lieu of doing the lab.

**Missing a Lab:** Most labs cannot always be made up if missed. A handout will be distributed that outlines what students must do to receive a grade for the missed lab.

**Reports:** Lab reports will usually be due two days following the labs. Format is prelab page, lab, and data tables/graphs. Late labs will not be accepted.

### **Projects**

One project will be completed prior to the end of each quarter. These projects are worth 100 points as a project grade. The 1st and 3rd quarter projects will be directly related to the current topics being covered. The 2nd and 4th quarter project will be research presentations on a chemistry related topic of the student's choosing.

### **Grading**

Grades will be calculated on total points. Track your grades online.

**Cheating, copying, or “sharing”** will NOT be tolerated. Any behavior of this type may result in a grade reduction or zero for all persons involved.

### The Road to Success

The best way to succeed in chemistry is to ask questions, participate fully, take notes, attend class, and complete assignments. I also additionally feel that reading assigned text is vital to your success. Extra credit opportunities will occasionally be available. ***If you need help, please ask. I am available before and after school and during my prep periods.***

### Standard Chemistry Objectives (Associated NGSS Standards)

- 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-PS1-3 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.
- HS-PS1-4 Develop a model (molecular-level drawings and diagrams of reactions, graphs showing the relative energies of reactants and products, and representations showing energy is conserved) 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-PS2-6 Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.
- HS-PS4-2 Evaluate questions about advantages of using a digital transmission and storage of information.
- HS-LS1-5 Use a model (diagrams, chemical equations, and conceptual models) to illustrate how photosynthesis transforms light energy into stored chemical energy.
- HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity
- HS-ESS2-5 Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.
- HS-ESS2-2 Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios
- HS-ETS1-1 Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.