

2022-23 FUNDAMENTALS OF CHEMISTRY SYLLABUS

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Text:

The online textbook will be supplemented with handout, videos and activities

Description:

In this chemistry class, students will begin to learn how subatomic particles affect the world around them as well as their own bodies. Students will learn about the periodic table, learn how to balance equations, learn the types and behaviors of different bonds, understand how intermolecular forces affect the behavior of materials and learn the gas laws and how they affect the environment and living things.

Goals:

Students will gain an understanding of:

- chemical reactions and strategies to balance them
- the relative quantities of reactants and products
- the fundamental properties of atoms, molecules, and the various states of matter
- the electronic structure of atoms and its influence on chemical properties
- molecular geometries of selected molecular species
- the fundamentals of acid/base chemistry, including pH calculations, buffer behavior, and acid/base titrations
- the energy and speed of chemical reactions
- the scientific method of collecting and analyzing information
- proper laboratory safety and techniques

Materials Needed:

Internet access and district issued chromebook

A calculator (or scientific calculator app on a phone) is necessary at home. In class, scientific calculators will be provided when needed.

Spiral bound notebook

Folder

Evaluation:

Student grades will be assessed using the following criteria:

Tests/quizzes: 40%

Labs: 20%

Classwork/participation: 20%

Homework: 20%

Criteria for Assessments:

Tests: tests include any summative assignment. These include unit tests, quizzes etc. If a student wishes to retake a test, they **MUST** first complete the test remediation sheet and then make arrangements to retake the test.

Labs: will be handed in via Google Classroom. Students will be assigned a lab partner, but if there is an issue collaborating, each student should hand in their **OWN** lab report. It is the student's responsibility to access Classroom and submit the work. Ample time is given following a lab before the report is due, so lack of internet at home is not an excuse for not handing in a lab report.

Classwork/Participation: Students will be required to have their chromebooks charged and working for each class. There will also be group activities that fall into this category (POGIL)

Homework: will be assigned to help students gain a thorough understanding of the concepts and include Edpuzzle, written work, practice tests, Teacher-made assignments and Applied Digital Skills assignments

Topics

Unit 1: Safety and Housekeeping

Unit 2: What Is Chemistry?

Unit 3: Measurements

Unit 4: Atoms, Molecules, and Ions

Unit 5: Chemical Reactions and Equations

Unit 6: Stoichiometry and the Mole

Unit 7: Energy and Chemistry

Unit 8: Electronic Structure

Unit 9: Chemical Bonds

Unit 10: Solids and Liquids

Unit 11: Solutions

Unit 12: Acids and Bases

<u>Unit</u>	<u>Projected Chemistry Topics</u>
Unit 1	Lab Safety, Procedures and routines
Unit 2	Atomic Origins
Unit 3	Atomic Structure
Unit 4	The Periodic Table

Unit 6	Ionic Bonding & Ionic Compounds
Unit 7	Covalent Bonding & Molecular Compounds
Unit 8	Intermolecular Forces
Unit 9	Mole Calculations
Unit 10	Chemical Reactions
Unit 11	Stoichiometry
Unit 12	Gases
UNit 14	Thermochemistry
Unit 15	Acids & Bases
Unit 16	Kinetics and Equilibrium