

Chemistry Syllabus – Mr. Schroeder 2023-2024

RCAS Policies/Procedures

Students will be required to follow all RCAS policies and procedures. To view the RCAS High School Student Handbook, click [handbook](#).

Course Description

Chemistry will consist of laboratory work, demonstrations, discussions, and lectures covering the following topics: lab safety, measurement precision and accuracy, atomic theory, nuclear chemistry, nomenclatures and formulas, periodicity, bonding, chemical reactions, stoichiometry, and thermochemistry.

Grading

Points shall be awarded for labs, tests, assignments, quizzes, and projects. Points will be awarded and collected cumulatively throughout the year. Category weights will be as follows: Tests/Projects = 50%; Labs = 30%; Assignments = 10%; Quizzes = 10%.

Missing Work

Missing work will be marked “missing” and receive a zero in the gradebook until such time it is turned in. Upon turn-in, the assignment will be graded based on accuracy and correctness.

Students shall have one day for every day absent, plus one extra day, to turn in work missed.

Late Work

Work that is turned in past its due date will receive a penalty of up to 40%.

Textbook

Prentice Hall Chemistry (2008)

Reading

Readings will be assigned per unit and topic. Reading and interpreting the textbook is mandatory.

Instructional Resources

Canvas, CK-12, PhET, Khan Academy, and others as needed.

Essential Questions

- What is the most important subatomic particle?
- How does the structure of the atom establish its function?
- How are elements arranged on the periodic table?
- What information can be obtained from the periodic table?
- Why and how do atoms bond?
- How can we predict the products of a chemical reaction?
- Why would we want to predict the products of a chemical reaction?
- How do reactions follow the law of conservation of mass?
- Why do we use the mole and what is its purpose?
- What are uses for percent composition?
- What is stoichiometry?

- What is the purpose of stoichiometry?
- What is the purpose of percent yield?
- How are temperature, pressure, volume, and amount of gas related?
- What are some ways we use gases in our daily lives?
- How is energy involved in chemical reactions?
- How is energy involved in phase changes?
- Where does the energy in chemical reactions come from?
- How can we take advantage of energy released during chemical reactions?

Essential Learning Intentions

- Student can interpret isotopic models and notation.
- Student can calculate the average atomic mass given element's isotopes.
- Student can write the electron configuration of a given element or ion.
- Student can interpret key characteristics of elements based on the location on the periodic table
Student can write the names and formulas of acids
- Student can draw Lewis structures for covalent compounds using VSEPR Theory
- Student can classify the five types of chemical reactions.
- Student can predict the products of synthesis, decomposition, single replacement, double replacement and combustion reactions.
- Student can use the activity series to determine if a single replacement reaction will occur.
- Student can use a solubility chart to establish if a precipitate will be formed.
- Student can calculate the molar mass of a substance.
- Student can convert the amount of a substance from mass to volume to particles using molar conversion.
- Student can use a balanced chemical equation to complete stoichiometric conversions.
- Student can identify the limiting reactant through calculations.
- Student can calculate the percent yield or percent error of an experiment Student can determine the percent composition of a substance by mass or experimentally
- Student can predict the behavior of a gas at a particulate level as variables are manipulated
- Student can determine the effect on a gas if one or more of the variables have changed.
- Student can determine an unknown variable of an ideal gas given a set of conditions.
- Student can interpret heating and cooling curves.
- Student can calculate heat using heating and cooling curves.
- Student can distinguish between heat and temperature.

Student Name (Print): _____

Student Signature: _____ Date: _____

Parent Name (Print): _____

Parent Signature: _____ Date: _____