

Calendar-Based Curriculum Map: Chemistry I

| | August/September | October | November |
|-----------------------------|--|---|--|
| Essential Question | What is Chemistry and what are the foundational concepts of measuring and describing matter? | What is the basis of periodic law and how does it apply to chemical bonding? | What is the language of chemistry? |
| Content | <ul style="list-style-type: none"> -Define Chemistry and Matter - Contrast physical and chemical changes -Comprehend the basics of the periodic table -Analyze Scientific Method -Use and Measuring and SI Units -Compare accuracy and precision -Develop an understanding of the historical development of the atomic theory -Analyze the relationship between a mole Avogadro's number -Describe the properties of electromagnetic radiation -Describe and explain the locations of electrons utilizing electron configurations | <ul style="list-style-type: none"> -Describe the development of the modern periodic table - Explain the relationship between electron configuration and the arrangement of elements -Explore the relationship between electron location and periodic trends -Define chemical bonding and describe the different types of bonds -Utilize Lewis dot structures to characterize bonds -Describe the process of covalent and ionic bonding -Investigate the shape of molecules utilizing the VSEPR theory and apply that shape to molecule polarity and behavior | <ul style="list-style-type: none"> -Explain the significance of a chemical formula -Describe the naming of binary ionic and molecular compounds -Identify the oxidation numbers of specific compounds -Calculate formula mass and percent composition - Apply the law conservation of mass to balancing chemical equations -Describe the five types of chemical reactions - Utilize the activity series of element to predict reaction outcomes |
| Skills | <ul style="list-style-type: none"> -Measuring and Estimation -Unit identification and Conversion -Mole/ Molecule/Gram Conversions -Basic lab Skills | <ul style="list-style-type: none"> -Lab writing skills -Kinesthetic manipulation -Group work cooperation | <ul style="list-style-type: none"> - Lab Writing skills -Group work cooperation -Lab Skills -Conversions |
| Assessments | <ul style="list-style-type: none"> - Informal Daily questioning -Homework Grades -Chapter Tests 1-4 | <ul style="list-style-type: none"> - Informal Daily questioning -Homework Grades -Chapter Tests 5-6 | <ul style="list-style-type: none"> - Informal Daily questioning -Homework Grades -Chapter Tests 7-8 |
| Activities/Resources | <ul style="list-style-type: none"> -CH. 1-4 Section Reviews -CH. 1-4 End of Chapter Review - Modern Chemistry Review Sheets -Basic Lab skills Lab | <ul style="list-style-type: none"> -CH.5-6 Section Reviews -CH. 5-6 End of Chapter Review - Modern Chemistry Review Sheets -MgO Lab | <ul style="list-style-type: none"> -CH.6-7 Section Reviews -CH. 6-7 End of Chapter Review - Modern Chemistry Review Sheets -MgO Lab -Single-Replacement Lab |

Calendar-Based Curriculum Map: Chemistry I

| | December | January | February |
|-----------------------------|---|--|---|
| Essential Question | What is stoichiometry and how is it utilized in a real world setting? | What are the physical characteristics of gases? | How does the kinetic molecular theory apply to liquids and gases? |
| Content | <ul style="list-style-type: none"> -Define a mole ratio -Apply conversion factor to solving stoichiometric problems - Demonstrate the prediction of products of a chemical reaction utilizing conversion factors -Explain the concepts of limiting reactant and percent yield | <ul style="list-style-type: none"> - Apply the kinetic molecular theory to gas behavior - Define pressure -Identify pressure units and convert between them -Identify and utilize gas laws to solve problems -Develop the relationship between moles and volume of a gas -Develop and understanding of the ideal gas law -Apply volume/mole relationship to stoichiometric calculations | <ul style="list-style-type: none"> -Utilize the kinetic molecular method describe the properties of liquids and solids - Apply the kinetic molecular method to phase change |
| Skills | <ul style="list-style-type: none"> - Lab Writing skills -Group work cooperation -Lab Skills -Conversions | <ul style="list-style-type: none"> -Group work cooperation -Conversions -Simple Algebra calculations | <ul style="list-style-type: none"> -Group work cooperation -Study Skills |
| Assessments | <ul style="list-style-type: none"> - Informal Daily questioning -Homework Grades -Chapter Test 9 | <ul style="list-style-type: none"> - Informal Daily questioning -Homework Grades -Chapter Test s 10-11 | <ul style="list-style-type: none"> - Informal Daily questioning -Homework Grades -Chapter 12 Test |
| Activities/Resources | <ul style="list-style-type: none"> -CH.9 Section Reviews -CH. 9 End of Chapter Review - Modern Chemistry Review Sheets -Single-Replacement Lab -Chemical engineering problem | <ul style="list-style-type: none"> -CH.10-11 Section Reviews -CH. 10-11 End of Chapter Review - Modern Chemistry Review Sheets -Ideal Gas Law Lab | <ul style="list-style-type: none"> -CH 12 Section Reviews -CH. 12 End of Chapter Review - Modern Chemistry Review Sheets |

Calendar-Based Curriculum Map:

| | March | April | May |
|-----------------------------|--|--|--|
| Essential Question | What is a solution? How are things dissolved and how is concentration measured? | What is an electrolyte, how is it formed, and what effects does it have on a solution? | What is an acid or base? What determines an acid and bases chemical properties? |
| Content | <ul style="list-style-type: none"> -Distinguish between solutions, suspensions and colloids -Discover the factors that determine solubility - Express concentration in terms of molarity and molarity | <ul style="list-style-type: none"> - Describe the dissociation of ionic compounds and covalent compounds. -Distinguish between weak and strong electrolytes and apply those concepts to colligative properties | <ul style="list-style-type: none"> -Identify the characteristics of an acid and a base -Describe the process by which an acid or base is formed -Apply acid and base knowledge to the application of an acid/base titration |
| Skills | <ul style="list-style-type: none"> -Group work cooperation -Conversions -Simple Algebra calculations | <ul style="list-style-type: none"> Group work cooperation -Conversions -Simple Algebra calculations | <ul style="list-style-type: none"> Group work cooperation -Conversions -Simple Algebra calculations -Titration lab skills |
| Assessments | <ul style="list-style-type: none"> - Informal Daily questioning -Homework Grades -Chapter 13 Test | <ul style="list-style-type: none"> - Informal Daily questioning -Homework Grades -Chapter 14 Test | <ul style="list-style-type: none"> - Informal Daily questioning -Homework Grades -Semester 2 Final |
| Activities/Resources | <ul style="list-style-type: none"> -CH 13 Section Reviews -CH. 13 End of Chapter Review - Modern Chemistry Review Sheets | <ul style="list-style-type: none"> -CH 14 Section Reviews -CH. 14 End of Chapter Review - Modern Chemistry Review Sheets | <ul style="list-style-type: none"> -CH 15-16 Section Reviews -CH. 15-16 End of Chapter Review - Modern Chemistry Review Sheets |