

Prioritized Curriculum
CHEMISTRY
Text: INTRODUCTORY CHEMISTRY
Author: ZUMDAHL
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SC.O.	Essential	Important	Need to Know
SC.O.C.			
1.1	X		
1.2	X		
1.3	X		
1.4	X		
1.5	X		
1.6	X		
1.7	X		
1.8	X		
1.9	X		
SC.O.C. 2.1	X		
2.2		X	
2.3		X	
2.4	X		
2.5	X		
2.6	X		
2.7		X	
2.8	X		
2.9	X		
2.10		X	
2.11	X		
2.12		X	
2.13		X	
2.14		X	
2.15	X		
2.16	X		
2.17	X		
2.18	X	X	
2.19		X	
2.20	X		
2.21	X		

CHEMISTRY CONTENT MAP

Key Concepts:

Methods of Science

Conversion between units

Estimated days to complete: 2 weeks

Topic:
Chapters 1 and 2
CSO's : 1.1, 1.2, 1.3, 1.4, and 1.6

Enduring Understanding: Why are standards necessary?

Essential Question(s):

1. How do you use the scientific method?
2. What are the standards of measurement?
3. How do you convert between units?

Examples:

Review safety equipment

Convert between units

Apply scientific method to problems

Perform Lab taking measurements

Key Vocabulary:

Measurement

Scientific Method

Conversion Factor

CHEMISTRY CONTENT MAP

Key Concepts:

Heat transfer

Properties of Matter

Estimated days to complete 2

Topic: Chapter 3
CSO's: 1.1, 1.4, 2.1, 2.12, 2.14

Enduring Understanding: How are matter and energy related?

Essential Question(s):

1. What is matter?
2. What are physical and chemical properties?
3. What are elements and compounds?

Examples:

Separation Lab

Specific Heat lab

Key Vocabulary:

Matter

Energy

Heat

Substance

CHEMISTRY CONTENT MAP

Estimated days to complete: 1 week

Key Concepts:

Names and symbols of atoms

Structure of atoms

Sub-atomic particles

Formation of ions

Topic: Chapter 4 Atomic Structure
CSO's: 1.1, 2.2, 2.4, 2.5, 2.7, 2.9

Enduring Understanding: How does the structure of an atom determine the properties of an atom?

Essential Question(s):

1. What does a compound's formula tell you?
2. What is the structure of an atom?
3. How do atoms form ions?

Examples:

Element scavenger hunt

Key Vocabulary:

Dalton's Atomic Theory

proton

neutron

electron

periodic table

ion

CHEMISTRY CONTENT MAP

Key Concepts:

Ionic compounds
Crossing charges

Molecular formulas

Roman Numerals for
transition metals

Estimated days to complete: 1 wk

Topic:
Chapter 5: Chemical Nomenclature
CSO's: 1.1, 2.6, 2.8. 2.9

Enduring Understanding: How can I write names and formulas for compounds?

Essential Question(s):

1. How do you write names and formulas of ionic compounds?
2. How do you write names and formulas of molecular compounds?
3. How do you write names and formulas for acids?

Examples:

Food label exercise

Key Vocabulary:

Ionic compound

Molecular compound

acid

prefix

Roman numerals

CHEMISTRY CONTENT MAP

Key Concepts:

Balancing equations

Five types of equations

Predicting products of reactions

Estimated days to complete 2

Topic: Chapter 6 and 7
Balancing Equations and Types of Reactions
CSO's: 1.1, 2.6, 2.11, 2.13

Enduring Understanding: How can I complete and balance an equation?

Essential Question(s):

1. How can I complete and balance an equation?
2. How can I predict the results of a chemical equation?

Examples:

school dance for types of equations

activity series of elements

Key Vocabulary:

product

reactant

balanced equation

synthesis

decomposition

single replacement

double replacement

combustion

CHEMISTRY CONTENT MAP

Key Concepts:

Count by weighing

Conversion of grams to moles

Conversion of atoms to moles

Converting data to empirical formulas

Estimated days to complete : 2

Topic: Chapter 8
Converting between mass, moles, and particles
CSO's: 1.1, 1.4, 2.6, 2.15, 2.17

Enduring Understanding: How do you convert between mass, moles, and particles?

Essential Question(s):

1. How do you change atoms to moles?
2. How do you change grams to moles ?
3. How do you determine empirical formulas?

Examples:

Use pennies to illustrate count by weighing

Use lab to find formula of magnesium oxide

Key Vocabulary:

mole

molar mass

empirical formula

molecular formula

CHEMISTRY CONTENT MAP

Key Concepts:

Writing mole-mole conversions

Calculate mass-mass problems

Calculate limiting reactants

Calculate % yield

Estimated days to complete 2

Topic: Chapter 9
Stoichiometry
CSO's: 2.15 and 2.17

Enduring Understanding: How to convert mass-mass calculations?

Essential Question(s):

1. How to convert moles?
2. How to convert moles to moles?
3. How to convert to asked for units?

Examples:

Find % yield of MgO

Prepare 2.0g of a compound

Key Vocabulary:

stoichiometry

limiting reactant

% yield

CHEMISTRY CONTENT MAP

Key Concepts:

electronegativity

types of bonds

Lewis structures

Estimated days to complete: 1

Topic: Chapter 11
Bonding
CSO's: 2.8

Key Vocabulary:

electronegativity

octet rule

duet rule

Enduring Understanding: How can I determine bond types?

Essential Question(s):

1. How do you determine electronegativity?
2. How do you determine the type of bond?
3. How do you write Lewis structures?

Examples:

Draw Lewis structures

Types of bonds

CHEMISTRY CONTENT MAP

Key Concepts:

Boyle's Law

Charles' Law

Ideal Gas Law

STP

Stoichiometry

Estimated days to complete: 2

Topic: Chapter 12
Gas Laws
CSO's: 2.11, 2.15, 2.16, and 2.17

Enduring Understanding: How does the Ideal Gas Law relate to reactions?

Essential Question(s):

1. What are the gas laws?
2. What is pressure?
3. How do you perform stoichiometric calculations with gas laws?

Examples:

Pressure diagram

STP

Temperature relationships

Key Vocabulary:

Pressure

STP

Ideal Gas Law

Molar Volume

CHEMISTRY CONTENT MAP

Key Concepts:

Water and its properties

Changes of state

Types of solids

Estimated days to complete: 3

Topic: Chapter 13
Bonding Properties
CSO's: 2.8, 2.14, 2.21

Enduring Understanding: What types of properties result from different types of bonding?

Essential Question(s):

1. What are the special properties of water?
2. What are types of bonding?
3. What are types of crystalline solids?

Examples:

Key Vocabulary:

Intramolecular forces

Intermolecular forces

Changes of state

London dispersion forces

Dipole-dipole interactions

Hydrogen bonding

CHEMISTRY CONTENT MAP

Key Concepts:

acids

bases

pH

buffer

Estimated days to complete : 1

Topic: Chapter 15
Acids and Bases
CSO's: 2.18, 2.19, 2.20

Enduring Understanding: What are acids and bases?

Essential Question(s):

1. What are the properties of acids?
2. What the properties of bases?
3. What do acid/base reactions form?

Examples:

pH of household cleaners

skin a penny

Key Vocabulary:

acid

base

hydronium ion

strong acid

weak acid

pH scale

buffer

Pacing Guide

UNIT OF STUDY	CSO's	TIME FRAME	RESOURCES
Standards, Measurement, and Safety	1.1, 1.2, 1.3, 1.4, 1.6	2 weeks	Chapters one and two of textbook, measuring tools
Matter and Energy	1.1, 1.4, 2.1, 2.12, 2.14	2 weeks	Textbook chapter 3, specific heat lab, separation lab
Atomic Structure	1.1, 2.2, 2.4, 2.5, 2.7, 2.9	1 week	Textbook chapter 4
Chemical Nomenclature	1.1, 2.6, 2.8, 2.9	2 week	Textbook chapter 5, food labels
Writing and Balancing Chemical Equations	1.1, 2.6, 2.11, 2.13	2 weeks	Textbook chapter 6 and 7, activity series, supplies to show types of reactions, SAS lab precipitation reactions
Mass/Moles/Particles	1.1, 1.4, 2.6, 2.15, 2.17	2 weeks	Textbook chapter 8, pennies, Lab to find formula of MgO
Stoichiometry	2.15 and 2.17	3 weeks	Textbook chapter 9, Lab to prepare 2.0 grams of precipitate
Gas Laws	2.11, 2.15, 2.16, and 2.17	2 weeks	Textbook chapter 12, large lab weight for pressure
Bonding	2.8	1 week	Textbook chapter 11
Bonding Properties	2.8, 2.14, 2.21	Continual throughout semester	Textbook chapter 13
Acids and Bases	2.18, 2.19, 2.20	1 week	Textbook chapter 15, household cleaners, pennies