

Science 10

Unit 3 – Chemistry-Unit Outline

Introduction to Chemistry	<p>Classroom Procedures and Program Goals</p> <p>Power Point on a Short History of our Ideas about Matter</p> <p>Early Search for Elements Worksheet</p>	<p>Teacher will outline the main class procedures including the marking system, expectations and lab safety.</p> <p>A worksheet based on the “History” Power Point and material from the text.</p>
The Structure of the Atom	<p>Activity 8C - Preparing the Element Hydrogen</p> <p>Power Point on the models of atomic structure</p> <p>Assignment on Atomic Structure</p> <p>Power Point on Atoms and Ions</p> <p>Assignment on Atoms and Ions</p>	<p>This is an experiment in which you will prepare hydrogen gas and discover some of its properties.</p> <p>The Power Point presentation will explain the Bohr-Rutherford model of the atom, protons, neutrons, electrons and atomic number. Isotopes and atomic mass will also be introduced.</p> <p>A worksheet on the material presented on atomic structure will be assigned.</p> <p>Students will be shown what atoms and ions are and how to determine the numbers of protons, neutrons and electrons in neutral atoms and ions.</p> <p>A worksheet on the material on atoms and ions will be assigned.</p>
The Periodic Table	<p>Power Point on the Periodic Table</p>	<p>The presentation will briefly outline the history of the development of the Periodic Table and discuss Mendeleev’s version. The modern Periodic Table will then be discussed and periods (rows) and families (columns) will be discussed. The locations of the Noble Gases, Alkali Metals, Halogens and Hydrogen, electron arrangements and properties of the elements in each family will be discussed.</p>

The Periodic Table	Video on the Periodic Table	Summarizes the material presented on the Periodic Table.
	Assignment on the Periodic Table	An assignment will be given on the material about the Periodic Table.
Ionic Compounds	Classroom explanation and notes on formation of ionic compounds and how to write formulas for them.	The teacher will explain and give you notes on how ionic compounds form and what ionic bonds are like. The rules for writing formulas for simple ionic compounds will be explained and the teacher will guide you through examples and practice, how to write formulas for binary compounds (including metals with more than one ion charge) and compounds with polyatomic ions.
	Assignment on ionic compounds and formulas	A worksheet will be given out which will review the concepts of ionic bonding and will give you practice writing formulas for ionic compounds.
	Naming ionic compounds-classroom explanation and practice	The teacher will explain the rules for naming ionic compounds-both binary and those with polyatomic ions. A method to find the ion charge of a metal with more than one possible charge will be shown.
	Assignment on naming ionic compounds	A worksheet will be handed out which will give you more practice in naming ionic compounds.
	Identifying and Naming Acids and Bases	The teacher will explain how acids and bases can be identified from formulas and how to write formulas for some common acids and bases.
Covalent Compounds	Classroom introduction and notes on covalent bonding and writing formulas and names for covalent compounds	The teacher will introduce and give notes on the concept of covalent bonding using Bohr models and the idea of sharing electrons. You will also be shown the system of writing formulas for and naming covalent compounds.

<p>Review of Chemistry So Far</p>	<p>Assignment on Ionic and Covalent Compounds</p> <p>Brief Review of History of Chemistry, Atomic Structure, the Periodic Table and Ionic and Covalent Compounds</p> <p>TEST on Chemistry – Part 1</p>	<p>A worksheet will be handed out which will help you review the concepts of ionic and covalent bonding and give you more practice writing formulas and names for ionic and covalent compounds and acids.</p> <p>You will write a test on History of Chemistry, Atomic Structure, the Periodic Table and Ionic and Covalent Compounds</p>
<p>Physical and Chemical Changes</p>	<p>Introduction, teacher demonstration and notes on physical and chemical changes.</p> <p>Activity 12 (10B) - Chemical Reactions vs. Physical Change</p>	<p>The teacher will demonstrate some physical and chemical changes, explain how you can tell which is which, and define each one for you in notes.</p> <p>In this experiment you will be performing and observing a number of changes, some physical and some chemical.</p>
<p>Chemical Reactions</p>	<p>Classroom introduction, notes and practice on writing and balancing simple chemical equations</p> <p>Assignment on physical/chemical changes and writing and balancing chemical equations</p> <p>Teacher demonstration and notes on Endothermic and Exothermic reactions.</p>	<p>The teacher will show you how to write and balance chemical equations for reactions. You will be given some practice in this.</p> <p>A worksheet will be handed out which will give you some review of physical and chemical changes and give you some practice in writing and balancing simple chemical equations.</p> <p>The teacher will demonstrate and give you definitions for endothermic and exothermic chemical reactions.</p>

Chemical Reactions	<p>Experiment on Performing more Examples of Chemical Reactions</p> <p>Class discussion and notes on the types of chemical reactions</p> <p>Assignment on Types of Reactions</p> <p>Test on Chemistry – Part 2</p>	<p>You will do an Experiment (Activity 14) in which you will perform more chemical reactions. You will record observations and write chemical equations for the reactions.</p> <p>Your teacher will define and give examples of synthesis, decomposition, replacement and acid-base reactions.</p> <p>You will be given an assignment on identifying reaction types.</p> <p>Test on Physical/Chemical Changes, and Chemical Reactions including Balancing and Identification of Types</p>
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