Sept 4

1. Welcome
2. Course outline
3. Textbook
4. Resources
5. Grade 10 review

Sept 5

1. Concerns of website? Review topics?
2. Safety expectations - understanding
   A. HHPS, MSDS, WHMIS
   B. Lab safety - common sense and some new situations
   C. Safety equipment
   D. Disposal
3. Textbook safety information
4. Working on review / safety notes

Sept 6

1. Matter flowchart
2. Element list - location on periodic table

Sept 7

1. Take up "things you should know from grade 10"
2. Atomic structure - Bohr Rutherford and Lewis diagrams
3. Lighting a Bunsen burner
4. Complete safety and element list

Sept 10

1. Numbers of the periodic table - relate to electrons, protons, neutrons
   A. Charged particles vs neutral particles
2. Isotopes and isotopic abundance calculation

Sept 11

1. Elements organized video and worksheet
2. Get ready for quiz safety and element

Sept 12

1. Safety and naming quiz
2. Take up safety as a class. Collect element quiz part
3. History of the periodic table
4. Structure of the periodic table
5. Activity looking at figure 8 and 9 page 18+19
    a. (adding info to blank periodic table)

Sept 13

1. Lab prep for "element or compound"
2. Finish up work from previous days - history, parts of periodic table

Sept 14

1. Element or Compound lab
2. Expectations handout

Sept 17

1. Periodic table review
2. Theory, model, theoretical vs empirical
3. History of atom watching TVO but no video sheets
4. Democritus, Aristotle, Empedocles, alchemists, Dalton, thomson, chadwick, nagaoka and Rutherford (making notes after reading pg 22-25

Sept 18

1. Finish TVO videos up to Bohr
2. Finish notes with video additions

Sept 19

1. Bohr theory - TVO video
2. Spectroscopes

Sept 20

1. Finish history
2. Hint at quantum and electron configuration
3. Quantum number one = period number

Sept 21

PD day no classes

Sept 24

1. Trends in the periodic table
   A. Reactivity
   B. Atomic radius
   C. Ionic radius
   D. Ionization energy
   E. Electron affinity
   F. Electronegativity
2. Examine images page 50-52

Sept 25

1. Review activity with periodic trends and organization
2. Classifying compounds
   A. Read 66-71
   B. Clues to determine the type of compound

Sept 26

   A. Ionic compounds
   B. Properties
   C. Bonding

Sept 27

1. Ionic bonding examples
2. Molecular compounds
3. Covalent bonding

Sept 28

1. Lewis structures
   A. Page 79
   B. Questions page 79-80

Oct 1

Polar, nonpolar, electronegativity

Oct 2

Intermolecular forces

Oct 3
Review period

Oct 4
Unit test

Oct 5
1. Nomenclature
2. IUPAC
3. Binary ionic compounds
   A. Representative elements
   B. Oxidation numbers
   C. Net charge = 0
   D. Formula crossover
   E. Name "ide"
   F. Complete section A

Oct 9
1. Quiz on A
2. Transition metals
   A. stock vs classical
   B. Net charge = 0

Oct 10
1. Quiz part A-B
2. Non metals
3. Rest of part 1

Oct 11
1. Quiz part A-G
2. Oxy acids
3. Per, ous, hypo-ous
4. Polyatomic ions
5. Per, ite, hypo-ite

Oct 12
1. Quiz part I-J
2. Poly atomic ions
3. Acid poly atomic ions

Oct 15

1. Quiz part I-L5
2. Rest of part 2
3. Hydrates in textbook
4. Hardback unit 1 test

Oct 16

1. Quiz on M-N
2. Naming review

Oct 17

1. Unit 2 chemical reactions
2. Defining a chemical reaction - overhead notes
3. Reading 3.1

Oct 18

1. The standard format to a chemical reaction
2. Balancing chemical reactions

Oct 19

1. Quiz on part 2
2. Introducing types of chemical reactions
3. S, ox, d, sd, dd
4. Worksheet on balancing and identifying types of reactions

Oct 22

1. Nomenclature test
2. Making notes on 3.2 (little sheet)

Oct 23

Read: 3.3

Questions:

1. Define the single displacement reaction type and write a general reaction equation for it.
2. Describe, in general, what happens in many single displacement reactions.
3. Write 2 specific examples, one involving metals and one involving nonmetals, for this reaction type.
4. How are the metals and nonmetals arranged in an activity series (give 2 ways)?

5. Define alloy, corrosion, and galvanizing. Describe practical applications for each of these ideas.
Additional Questions:
p. 128-129, Q. 1-7; p. 130, Q. 8; p. 134, Q. 10-11; p. 143-144, Q. 3-5

Read: 3.4
Questions:
1. Define the double displacement reaction type and write a general reaction equation for it. Give an example of this reaction type.
2. Define solute, solvent, solubility, precipitate.
3. Describe 2 types of double displacement reactions. Write an example for each reaction type.
Additional Questions:
p. 138, Q. 1-3; p. 141-143, Q. 4-12

Oct 24
Review single and double displacement
Reactions in solution
Activity series
Solubility table
Handout nuclear reactions independent study

Oct 25
1. Describe an alpha decay reaction
2. Describe a beta decay reaction
3. Describe a mixed alpha and beta decay
4. Chemical reactions - sentences to balanced chemical reactions
5. Predicting states and products
6. Nuclear reactions worksheet
7. Textbook and examples on the board

Oct 26
1. Work period
2. Word to balanced reactions
3. Nuclear reactions

Oct 29

1. Reviewing nuclear reactions
2. Types of reactions worksheet with 15 kinds of reaction

Oct 30

1. Single displacement lab
2. Six solutions and 7 metals

Oct 31

1. Nuclear reactions quiz
2. Discussion of lab activity

Nov 1

1. Types of reactions

Nov 2

Review period

Nov 5

Unit test on Reactions

Chemical and physical

Nov 6

1. Diagnostic and preparation for mathematics in chem
    A. Unit conversion
    B. Scientific notation
    C. Significant figure
2. Section 4.1 - law of definite proportions
3. Section 4.2 - relative atomic mass, atomic mass unit, isotopic abundance

Nov 7

1. Relative atomic mass
2. Atomic mass, molecular mass, formula mass
3. Molar mass

Nov 8

1. Mole calculations
2. Symbols, units, formulas
3. Chapter 4.3 - mole calculations - do all problems

Nov 12

1. Mole quiz
2. Percent composition

Nov 13

Mole calculation flowchart
Theoretical and empirical %composition
Percent error

Nov 14

Mole calculations part A
Corrections of part A

Nov 15

Calculation empirical formula
Combustion analyzer
Calculation molecular formula
Mass spectrometer
Worksheet on Ef and mf and %comp

Nov 16

Hand in mole assignment B
Percent composition of epson salts
Worksheet on empirical and molecular formulas
Chapter 4 review questions

Nov 19

Collect remaining mole assignments
Discuss concerns about worksheet of Ef and mf
Discuss lab write up - due Thursday
Balancing reactions page 215 - 216 questions 2&3

Nov 20
Intro to stoichiometry
The mole ratio pg 212
Making Rice Krispie cookies
Rice Krispies and butter and marshmallows and vanilla make Rice Krispies

Follow a recipe

Aluminum and oxygen make aluminum oxide

Al + O2 --> Al2O3

The chemistry recipe

Calculating mole amounts, worksheet 1

Nov 21
Calculating mass amounts

Nov 22
Limiting reagents

Nov 23
Quiz on excess reagent /6
Work period on limiting reagents

Nov 26
Yield and percent yield

Nov 27
Lab?
Work period

Nov 28
Work period

Nov 29
Unit test - chapter 4 & 5 - moles and stoichiometry

Nov 30
Defining a solution
Solvent and solute
Chemistry behind solutions
Textbook questions and water questions

Dec 3
Concentration calculations
Base formula
Variations of the base formula: percent concentration, ppm, Molar concentration

$$C = \frac{\text{solute}}{\text{solution}}$$

Dec 4
Dilution formula and more concentration problems

Dec 5
Work on water questions and ch 6 questions

Dec 6
Water quiz
Solubility trends

Dec 7
Solubility graph
Solubility table
High solubility, low solubility

Dec 10
Net ionic equations

Dec 11
Qualitative solutions
Quantitative solutions
Stoichiometry

Dec 12
Stoichiometry

Dec 13
Stoichiometry

Dec 14
Getting ready for test on dec 18
Review problems

Dec 17

Dec 18
Unit test on solutions ch 6 and 7

Dec 19
Acids and bases
Qualitative: properties, ionic vs molecular, ionization vs dissociation
strong vs weak

Dec 20
What is the pH evaluating?
Water is involved in all solutions and it self ionizes
There will always be OH and H3O ions
The pH scale with concentrations included
The pH calculation: -log [ ]
The concentration calculation: 10 -pH

Dec 21
Acid and base theories
Arrhenius, modified Arrhenius and Bronsted-Lowry
Read 8.4 and worksheet

CHRISTMAS BREAK

Jan 7
Review a bit
Reactions of Acids and bases
Forming acid and bases
Acid rain concerns
Homework read over titration sample problems

Jan 8
The titration activity

Jan 9
Review period

Jan 10
Test on chapter 8

Jan 11
Defining a gas, intermolecular forces
Standard values
Properties of a gas
Pressure - what is it

Jan 14
Directly and indirectly proportional
Gas laws
Combined gas law

Jan 15
Ideal gas law
What is an ideal gas
Avogadro's law - 1 mole of any gas will occupy a volume of 22.4L at STP
-1 mole of gas at SATP will occupy a volume of 24.8L
Adding moles to the combined gas law
The universal gas constant - pressure in kPa, vol in L, temp in K
R = 8.314
The unit of the gas constant describes the relationship between the symbols in the ideal gas law

Jan 16

In a sealed container the ratio of moles of gases will have the same ratio as the pressures of each gas

- Example: a container contains 20 moles of oxygen and 30 moles of nitrogen. If the pressure of the container is 400 kPa what is the pressure of the oxygen

Very important in chemistry when collecting gases through water displacement method. Before calculations can occur the partial pressure of the water vapour must be removed from the pressure value

Work on gas laws and partial pressure questions

Jan 17

Partial pressure sample problem. Collecting hydrogen by water displacement.

45 ml of gas collected at 22'C and 98 kPa.

What mass of hydrogen was collected?

Gas stoichiometry

- Combining volumes

Volume ratio = mole ratio

- Satp, stp, molar gas volume
- Ideal gas law and stoichiometry

Jan 18

Clean up section

Jan 21

Chapter 9+10 gases unit test

Jan 22-24

Exam review days

Exam summary

- Mark total = 127
- True and false = 24
- Multiple choice = 55
- Calculations
- Short answer
- No essay type