Grade 10 Chemistry
Marking Period 2

STANDARD	PERFORMANCE INDICATORS	PACING DAYS	RESOURCES (Print, Visual, Technology, Manipulatives)	ASSESSMENT (Evidence & Scoring Guides)
Unit 3: The Mathematics of Formulas and Equations				
P.S.4.3 CH	• Students apply the principle of conservation of mass to chemical reactions.	28	o Textbook o Crucible o Chemical o Equipment o Balances o Calculators o Balloon o Baking Supplies o Video: BOCES Periodic Table o www.webelements.com o Ball and Stick Model Kit o Gum Drops Toothpicks o Soap/String Straws o Glue/Cups o Evaporation Demo	o Density Lab o Percent Water Lab o Popcorn Lab o M&M Lab o Helium Balloon Lab o Baking Lab o Planet Colandrea Lab o Periodic Table Lab o Type of Reactions o Adopt an Element Project o Ball and Stick Lab o Gumdrop Lab o Silly Puddy Lab o Soap Bubble Activity o Homework o Quizzes
P.S.4.3C1 CH	• In all chemical reactions there is a conservation of mass, energy, and charge.			
P.S.4.3C4 CH	• The empirical formula of a compound is the simplest whole-number ration of atoms of the elements in a compound. It may be different from the molecular formula, which is the actual ration of atoms in a molecule of that compound.			
P.S.4.3C5 CH	• The formula mass of a substance is the sum of the atomic masses of its atoms. The molar mass (gram-formula mass) of a substance equals one mole of that substance.			
P.S.4.3C6 CH	• The percent composition by mass of each element in a compound can be calculated mathematically.			
P.S.4.3D5 CH	• Equal volumes of gases at the same temperature and pressure contain an equal number of particles.			

Grade 10 Chemistry
Marking Period 2

STANDARD	PERFORMANCE INDICATORS	PACING DAYS	RESOURCES (Print, Visual, Technology, Manipulatives)	ASSESSMENT (Evidence & Scoring Guides)
P.S.4.3C3 CH	• A balanced chemical equation represents conservation of atoms. The coefficients in a balanced chemical equation can be used to determine mole ratios in the reaction.			o Exams
Unit 4: Periodic Table				
P.S.4.3	• Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.	7	o Textbook o Crucible o Chemical o Equipment o Balances o Calculators o Balloon o Baking Supplies o Video: BOCES Periodic Table o www.webelements.com o Ball and Stick Model Kit o Gum Drops Toothpicks o Soap/String Straws	o Density Lab o Percent Water Lab o Popcorn Lab o M&M Lab o Helium Balloon Lab o Baking Lab o Planet Colandrea Lab o Periodic Table Lab o Type of Reactions o Adopt an Element Project o Ball and Stick Lab o Gumdrop Lab o Silly Puddy Lab
P.S.4.3A CH	• Students explain the properties of materials in terms of the arrangement and properties of the atoms that compose them.			
P.S.4.3A26 CH	• For groups 1, 2 and 13-18 on the Periodic Table, elements within the same group have the same number of valence electrons (helium is an exception) and therefore similar chemical properties.			
P.S.4.3A27 CH	• The succession of elements within the same group demonstrates characteristic trends: differences in atomic radius, ionic radius, electro negativity, first ionization energy, metallic/nonmetallic properties.			

Grade 10 Chemistry
Marking Period 2

STANDARD	PERFORMANCE INDICATORS	PACING DAYS	RESOURCES (Print, Visual, Technology, Manipulatives)	ASSESSMENT (Evidence & Scoring Guides)
P.S.4.3A28 CH	• The succession of elements across the same period demonstrates characteristic trends: differences in atomic radius, ionic radius, electro negativity, first ionization energy, metallic/nonmetallic properties.		o Glue/Cups o Evaporation Demo	o Soap Bubble Activity o Homework o Quizzes o Exams
P.S.4.5B9 CH	• Electro negativity indicates how strongly an atom of an element attracts electrons in a chemical bond. Electro negativity values are assigned according to arbitrary scales.			
Unit 5: Bonding				
P.S.4.5B1 CH	• Chemical bonds are formed when valence electrons are: transferred from one atom to another (ionic); shared between atoms (covalent); and mobile within a metal (metallic). 5.2b Atoms attain a stable valence electron configuration by bonding with other atoms. Noble gases have stable valence configurations and tend not to bond.	14	o Textbook o Crucible o Chemical o Equipment o Balances o Calculators o Balloon o Baking Supplies o Video: BOCES Periodic	o Density Lab o Percent Water Lab o Popcorn Lab o M&M Lab o Helium Balloon Lab o Baking Lab o Planet Colandrea Lab o Periodic Table Lab o Type of Reactions
P.S.4.5B2 CH	• When an atom gains one or more electrons, it becomes a negative ion and its radius increases. When an atom loses one or more electrons, it			

Grade 10 Chemistry
Marking Period 2

STANDARD	PERFORMANCE INDICATORS	PACING DAYS	RESOURCES (Print, Visual, Technology, Manipulatives)	ASSESSMENT (Evidence & Scoring Guides)
	becomes a positive ion and its radius decreases.		Table o www.webelements.com o Ball and Stick Model Kit o Gum Drops Toothpicks o Soap/String Straws o Glue/Cups o Evaporation Demo	o Adopt an Element Project o Ball and Stick Lab o Gumdrop Lab o Silly Puddy Lab o Soap Bubble Activity o Homework o Quizzes o Exams
P.S.4.5B3 CH	• Electron-dot diagrams (Lewis structures) can represent the valence electron arrangement in elements, compounds, and ions.			
P.S.4.5B5 CH	• Some elements exist in two or more forms in the same phase. These forms differ in their molecular or crystal structure, and hence in their properties.			
P.S.4.5B6 CH	• Two major categories of compounds are ionic and molecular (covalent) compounds.			
P.S.4.5B7 CH	• Metals tend to react with nonmetals to form ionic compounds. Nonmetals tend to react with other nonmetals to form molecular (covalent) compounds. Ionic compounds containing polyatomic ions have both ionic and covalent bonding.			
P.S. 4.5B8 CH	• When a bond is broken, energy is absorbed. When a bond is formed, energy is released.			
P.S.4.5B9 CH	• Electro negativity indicates how strongly an atom of an element attracts electrons in a chemical bond. Electro negativity values are assigned according to arbitrary scales.			

Grade 10 Chemistry
Marking Period 2

STANDARD	PERFORMANCE INDICATORS	PACING DAYS	RESOURCES (Print, Visual, Technology, Manipulatives)	ASSESSMENT (Evidence & Scoring Guides)
P.S.4.5B10 CH	• The electro negativity difference between two bonded atoms is used to assess the degree of polarity in the bond.			
P.S.4.5B11 CH	• Molecular polarity can be determined by the shape of the molecule and distribution of charge. Symmetrical (non-polar) molecules include CO2, CH4, and diatomic elements. Asymmetrical (polar) molecules include HC1, NH3, and H2O.			

Curriculum Guidelines for Second Quarter

- Balancing Equations
- Types of Reactions
- Mole Concept
- Molecular Formula from Empirical Formula
- Percept Composition
- Conversions
- Mole to Mole – Stoichiometry
- History of Periodic Table
- Periodic Properties
- Group Properties
- Chemical Properties
- Bonds between Atoms