

Hesperia Community Schools

Course: Chemistry A

Grade Level: 11th Grade

Timeline	HSCE's/ GLCE's and CCSS	Content—the “WHAT” of teaching. Specific themes, units & topics.	Essential Skills: the “Important Details/Essential Questions” you are teaching (How & essential of What)	Content Vocabulary	Assessment: the products & performances of learning	Resources
<p>Unit: Introduction to Chemistry B & Chemistry Lab</p> <p>Weeks: 1 – 3</p> <p>Chemistry, Prentice Hall © 2005 Reference: CH 1</p>		<p>CH 1: Introduction to Chemistry</p> <ul style="list-style-type: none"> Section 1: Chemistry Section 2: Chemistry Far and Wide Section 3: Thinking Like a Scientist Section 4: Problem Solving 	<ul style="list-style-type: none"> Why is the scope of chemistry so vast? What are the five traditional areas of study in chemistry? How are pure and applied chemistry related? What are three general reasons to study chemistry? What types of equipment do chemists use? 		<p>Bag Lab / Observation Skills Lab</p> <p>CH 1 Vocab Quiz</p>	<p>CH 1 Vocab Sheet</p> <p>Chemistry Equipment Lab</p>
<p>Unit: Scientific Measurement</p> <p>Weeks: 4 – 5</p> <p>Chemistry, Prentice Hall © 2005 Reference: CH 3</p>		<p>CH 3: Scientific Measurement</p> <ul style="list-style-type: none"> Section 1: Measurement and Their Uncertainty Section 2: The International System of Units (SI) Section 3: Conversion Problems Section 4: Density 	<ul style="list-style-type: none"> How do measurements relate to science? How do you evaluate accuracy and precision? Why must measurement be reported to the correct number of significant figures? How does the precision of a calculated answer compare to the precision of the measurements used to obtain it? Which five SI base units do chemistry commonly use? What metric units are commonly used to measure length, volume, mass, temperature and energy? What happens when a measurement is multiplied by a conversion factor? What is dimensional analysis useful? What types of problems are easily solved by using dimensional 		<p>Wildlife Refuge (Dimensional Analysis) Activity</p> <p>CH 3 Vocab Quiz</p> <p>Small Scale Lab: “Now What Do I Do?”</p> <p>CH 3 (Measurement) Test</p>	<p>CH 3 Vocab Quiz</p> <p>Sig Fig Interactive NoTeS</p> <p>Scientific Notation WS</p> <p>Standard Notation WS</p> <p>Accuracy vs. Precision Quick Lab</p> <p>% Error WS</p> <p>CH 3 Practice Problems WS</p> <p>Sense of Scale Clothesline Activity</p> <p>Nanotechnology Youtube.com Video</p> <p>“What’s Your Nano IQ” Quiz</p>

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			<p>analysis?</p> <ul style="list-style-type: none"> • What determines the density of a substance? • How does a change in temperature affect density? 			Mind Point Quiz Show Review Game
<p>Unit: Matter & Change</p> <p>Weeks: 6 – 9</p> <p>Chemistry, Prentice Hall © 2005 Reference: CH 2</p>		<p>CH 2: Matter & Change</p> <ul style="list-style-type: none"> • Section 1: Properties of Matter • Section 2: Mixtures • Section 3: Elements & Compounds • Section 4: Chemical Reactions 	<ul style="list-style-type: none"> • How can properties used to describe matter be classified? • Why do all samples of a substance have the same intensive properties? • What are three states of matter? • How can physical changes be classified? • How can mixtures be classified? • How can mixtures be separated? • What always happens during a chemical change? • What are four possible clues that a chemical change has taken place? • How are the mass of the reactants and mass of the products of a chemical reaction related? 		<p>Separation By Filtration Lab</p> <p>Minutes Paper</p> <p>Separation by Filtration Post-Lab Assessment</p> <p>CH 2 Vocab Quiz</p> <p>CH 2 (Matter & Change) Test</p> <p>Spectrometer Readiness Lab (Part 1 and 2)</p> <p>Green Skittle Lab</p> <p>Elements, Compounds, vs. Mixtures Whiteboard & Boxes ID Activity</p> <p>Direct Dialogue Performance Assessment for Spec Lab</p>	<p>CH 2 Vocab Sheet</p> <p>Separation NoTeS</p> <p>The Great Ketchup Race Demo</p> <p>Matter Classification Activity (elements, compounds vs. mixtures)</p> <p>Chromatography Art Project</p> <p>Solubility NoTeS</p> <p>Saturated, Supersaturated vs. Unsaturated Demo</p> <p>Instant Crystals Demo</p> <p>CH 2 Running Practice Problems WS</p> <p>“Your Colorful Food” Article and Worksheet</p> <p>Matter Search & Rescue Activity</p> <p>Mind Point Quiz Show Review Game</p>
<p>Unit: Atomic Structure</p> <p>Weeks: 10 – 12</p>	C1.2C:	<p>CH 4: Atomic Structure</p> <ul style="list-style-type: none"> • Section 1: Defining the Atom • Section 2: Structure of the Nuclear Atom 	<ul style="list-style-type: none"> • How did Democritus describe atoms? • How did John Dalton further Democritus' idea of atoms? • What instruments are used to observe individual atoms? 		<p>Create-Your-Own Isotope Project</p> <p>Isotope (Post-It-lum) Quiz</p> <p>Small Scale Lab: Half-life</p>	<p>History of the Atom Flipbook</p> <p>Difference between Atoms NoTeS</p> <p>“How Big is an Atom?” Activity</p>

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<p><i>Chemistry, Prentice Hall © 2005 Reference:</i> CH 4</p>		<ul style="list-style-type: none"> Section 3: Distinguishing Among Atoms 	<ul style="list-style-type: none"> What are the three kinds of subatomic particles? How can you describe the structure of the nuclear atom? What makes one element different from another? How do you find the number of neutrons in an atom? How do isotopes of an element differ? How do you calculate the atomic mass of an element? 		<p>CH 4 (Atomic Structure) Test</p>	<p>“Stickerium” Isotope Activity</p> <p>Mapping Atomic Structure Activity</p> <p>CH 4 Practice Problems WS</p> <p>CH 4 Practice Problems (Textbook)</p> <p>Radioactive Element Demo</p> <p>K-19: The Widowmaker Film</p> <p>“Radium Girls – Dialing it Up” Article</p> <p>Atomic Structure Bingo</p> <p>Milikan’s Oil Drop Experiment (Mechanical Universe) Short Film</p> <p>Mind Point Quiz Show Review Game</p>
<p>Unit: Electrons</p> <p>Weeks: 13 – 14</p> <p><i>Chemistry, Prentice Hall © 2005 Reference:</i> CH 5</p>		<p>CH 5: Electrons</p> <ul style="list-style-type: none"> Section 1: Models of the Atom Section 2: Electron Arrangement in Atoms Section 3: Physics & the Quantum Mechanical Model 	<ul style="list-style-type: none"> What was inadequate about Rutherford’s atomic model? What was the new proposal in the Bohr model of the atom? What does the quantum mechanical model determine about the electrons in an atom? How do sublevels of principal energy levels differ? What are the three rules for writing the electron configuration of elements? How are wavelength and frequency of light related? What causes atomic emission spectra? 		<p>CH 5 Vocab Quiz</p> <p>Writing Electron Configuration and Energy Levels on Periodic Table Performance Assessment</p> <p>CH 5 (Electrons) Test</p>	<p>CH 5 Vocab Sheet</p> <p>Inquiry Activity: Observation Light Emissions from Mints</p> <p>Electron NoTeS</p> <p>Flame Test Demo</p> <p>Atomic Spectra of Gases Demo</p> <p>Writing Electron Configuration and Energy Levels on Periodic Table Activity</p>

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			<ul style="list-style-type: none"> How does quantum mechanics differ from classical mechanics? 			e ⁻ Configuration WS CH 5 Practice Problems WS Electron Rule Mobile Project CH 5 Review Problems Mind Point Quiz Show Review Game
Unit: The Periodic Table Weeks: 15 – 16 Chemistry, Prentice Hall © 2005 Reference: CH 6		CH 6: The Periodic Table <ul style="list-style-type: none"> Section 1: Organizing the Elements Section 2: Classifying the Elements Section 3: Periodic Trends 	<ul style="list-style-type: none"> How did chemists begin to organize the known elements? How did Mendeleev organize his periodic table? How is the modern periodic table organized? What are the three broad classes of elements? What type of information can be displayed in a periodic table? How can elements be classified based on their electron configuration? What are the trends among the elements for atomic size? How do ions form? What are the trends among the elements for first ionization energy, ionic size, and electronegativity? What is the underlying cause of periodic trends? 		CH 6 Inquiry Activity – Periodic Trends Top Secret Agent Activity “Periodic Table of What???” Project Periodicity in 3D (straws and well-spot plates) Activity CH 6 (Periodic Table) Test	CH 6 Classifying Elements NoTeS Coloring Periodic Table Project Reactivity of Alkali Metals (Li, Na and K) Demo CH 6 Practice Problems WS Effective Nuclear Charge and Shielding Demo CH 6 Around-the-room Problems Mind Point Quiz Show Review Game CH 6 Practice Problems (Textbook)
Unit: Chemical Names & Formulas Weeks: 17 – 18 Chemistry, Prentice Hall © 2005 Reference: CH 9	C5.7A:	CH 9: Chemical Names & Formulas <ul style="list-style-type: none"> Section 1: Naming Ions Section 2: Naming and Writing Formulas for Ionic Compounds Section 3: Naming and 	<ul style="list-style-type: none"> How are the charges in Group A metals and nonmetal ions related to their positions in the periodic table? How are the charges of some transition metals ions determined? What are the two endings of the names of most polyatomic ions? How are the names of binary ionic compounds determined? 		“My Ion” Activity Small Scale Lab: Writing Names and Formulas for Ionic Compounds (pg 267) CH 9 (Names & Formulas) Test	CH 9 Naming Compounds and Writing Formulas NoTeS “My Ion” Activity Types of Bonds WS Naming Ionic Compounds WS

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		<p>Writing Formulas for Molecular (Covalent) Compounds</p> <ul style="list-style-type: none">• Section 4: Naming and Writing Formulas for Acids & Bases	<ul style="list-style-type: none">• How do you write the formulas for binary ionic compounds?• How do you write the formulas and names of compounds containing polyatomic ions?• What does a prefix in the name of a binary molecular compound tell you about the compound's composition?• How do you write the formula for a binary molecular compound?• What are the three rules for naming acids?• How are the formulas of acids determined?• How are bases named?			<p>Naming Covalent Compounds WS</p> <p>Naming Binary Molecular Compounds WS</p>
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