



<b>Theme / Mega-Topic</b>	<b>Topic</b>	<b>Lab</b>	<b>Chapter</b>
<b>Quantitative Analyses</b>	Solid stoichiometry <ul style="list-style-type: none"> <li>▪ limited reagents</li> <li>▪ % yield</li> <li>▪ empirical formula</li> </ul> Aqueous stoichiometry: <ul style="list-style-type: none"> <li>▪ acids / bases definitions</li> <li>▪ precipitation &amp; ion rankings</li> <li>▪ complex REDOX reactions &amp; titrations</li> </ul> Gas stoichiometry <ul style="list-style-type: none"> <li>▪ Molecular kinetic theory</li> <li>▪ Ideal Gas Law &amp; the derived laws</li> <li>▪ Gas stoichiometry</li> <li>▪ Deviation &amp; IMF examination</li> </ul>		<b>3,4,5,15, 19</b>
<b>Equilibrium</b>	Introduction <ul style="list-style-type: none"> <li>▪ K: forms, expressions &amp; manipulations</li> <li>▪ Conditions shifting an equilibrium: Le Chaterlier's Principle</li> <li>▪ Computation</li> </ul> Acids & bases <ul style="list-style-type: none"> <li>▪ Types, strength &amp; pH</li> <li>▪ K expression &amp; computation</li> <li>▪ Diprotic &amp; polyprotic conditions</li> <li>▪ Salts: acidity &amp; pH</li> </ul> Acids & bases equilibria <ul style="list-style-type: none"> <li>▪ Buffers</li> <li>▪ Titration &amp; indicators</li> </ul> Solubility equilibria <ul style="list-style-type: none"> <li>▪ The Common Ion Effect</li> <li>▪ pH &amp; solubility</li> <li>▪ Fractional precipitation</li> <li>▪ Complex ions</li> </ul>		<b>14,15,16</b>
<b>Periodic Trends: Explanation &amp; Equation Writing II</b>	Atomic theory & subatomic particles Quantum theory & electron configuration The Periodic Table & trends: physical properties with explanations The Periodic Table & trends: chemical properties with reactions		<b>2,7,8</b>

<b>Theme / Mega-Topic</b>	<b>Topic</b>	<b>Lab</b>	<b>Chapter</b>
<b>Electrochemistry</b>	Electrochemical cells & SRP table Spontaneity of REDOX reaction Electrolysis & plating Batteries & corrosion		19
<b>Energy &amp; Thermodynamics</b>	Enthalpy & reaction Standard enthalpy of formation: Hess Law Calorimetry: heat of solutions – reaction vs. dilution Entropy, free energy & spontaneity Relationships among K, $\Delta G$ & $E^0$		6 & 18
<b>Chemical Kinetics &amp; Nuclear Chemistry</b>	Rate law expression & derivation Integrated rate laws & graphing Activation energy & Arrhenius Equation Reaction mechanisms		13 & 23
<b>Solution Properties</b>	Concentration types, units & conversions Molecular view of solution: effects of temperature & pressure Colligative properties: electrolytic & non-electrolytic solutions		12
<b>Transition Metal &amp; Coordination Chemistry</b>	Properties: electron configuration, iron & copper Coordination compounds & isomers Naming & reactions Crystal field theory		22