

# Unit #1

## Chemistry Basics and Atomic Structure

<b>N1</b> Chemistry Math Review  <a href="https://tinyurl.com/pmn2ypx2">tinyurl.com/pmn2ypx2</a>	<b>N2</b> Dimensional Analysis  <a href="https://tinyurl.com/mexvafza">tinyurl.com/mexvafza</a>	<b>N3</b> Significant Figures  <a href="https://tinyurl.com/693czxv3">tinyurl.com/693czxv3</a>
<b>N4</b> Properties, $\Delta$ 's, Types of Matter  <a href="https://tinyurl.com/3b34224m">tinyurl.com/3b34224m</a>	<b>N5</b> Atomic Numbers and Isotopes  <a href="https://tinyurl.com/est8nnna">tinyurl.com/est8nnna</a>	<b>N6</b> Average Mass Calculations  <a href="https://tinyurl.com/3db8fx29">tinyurl.com/3db8fx29</a>

### Targets:

N1 – I can perform metric conversions and use scientific notation.

N2 – I can use Dimensional Analysis to show unit conversions.

N3 – I can use Significant Figures to ensure reliability in measurements.




N4 – I can describe types of matter and changes that matter goes through.

N5 – I can determine how many sub atomic particles different atoms have.

N6 – I can calculate the average mass of an element, accounting for all the different isotopes that exist.

# Unit #2

## Nuclear Chemistry






<b>N7</b> Writing Nuclear Equations  <a href="https://tinyurl.com/crjkpyby">tinyurl.com/crjkpyby</a>	<b>N8</b> Nuclear Decay Series  <a href="https://tinyurl.com/cfv3v3v">tinyurl.com/cfv3v3v</a>	<b>N9</b> Half Life Calculations  <a href="https://tinyurl.com/3u4mvba2">tinyurl.com/3u4mvba2</a>
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### Targets:

- N7 – I can balance nuclear equations to ensure the Laws of Conservation of Matter, Charge, and Energy are being followed.
- N8 – I can track the series of steps that radioactive substances sometimes have to go through in order to reach stability
- N9 – I can use half-life calculations to find values related to how fast a radioactive substance decays.

# **Unit #3**

## **Electrons**

<b>N10</b> Introduction to Electrons  <a href="https://tinyurl.com/2sd65mb4">tinyurl.com/2sd65mb4</a>	<b>N11</b> Orbital Diagrams  <a href="https://tinyurl.com/kmvr8b2h">tinyurl.com/kmvr8b2h</a>	<b>N12</b> Writing Electron Configurations  <a href="https://tinyurl.com/68kejbt">tinyurl.com/68kejbt</a>
<b>N13</b> Configs of Ions & Noble Gas Config  <a href="https://tinyurl.com/jvyknedk">tinyurl.com/jvyknedk</a>	<b>N14</b> Absorption and Emission  <a href="https://tinyurl.com/5hxbtw8y">tinyurl.com/5hxbtw8y</a>	

### **Targets:**

- N10 – I can describe in detail the location of electrons in an atom.
- N11 – I can use Orbital Diagrams to show the energy levels and orbitals that electrons occupy inside different atoms.
- N12 – I can use the Periodic Table to write electron configurations.
- N13 – I can write electron configurations for ions and can use Noble Gas Configurations as a short hand way of writing configurations.
- N14 – I can describe how electrons behave when an atom absorbs and emits energy.

# Unit #4

## The Periodic Table

**N15**

Periodic  
Trends



[tinyurl.com/49842uaf](https://tinyurl.com/49842uaf)







*\*This is one pretty big PowerPoint that we usually do over a few days. It is all one topic so I don't like to break it into separate files. So technically there is only one set of notes for this chapter.*

### Targets:

N15 – I can use the Periodic Table's structure to see a variety of physical and chemical properties of the elements. I can utilize the patterns seen on the Periodic Table to compare/rank/explain properties of different elements.

# Unit #5

## Bonding and Structure

<b>N16</b> Bonding and Naming  <a href="https://tinyurl.com/37rv82cr">tinyurl.com/37rv82cr</a>	<b>N17</b> Writing Neutral Compounds  <a href="https://tinyurl.com/4fb9apks">tinyurl.com/4fb9apks</a>	<b>N18</b> Lewis Structures  <a href="https://tinyurl.com/spw4tnfb">tinyurl.com/spw4tnfb</a>
<b>N19</b> VSEPR Theory  <a href="https://tinyurl.com/z79sd647">tinyurl.com/z79sd647</a>	<b>N20</b> Molecular Polarity  <a href="https://tinyurl.com/rwp3ynmf">tinyurl.com/rwp3ynmf</a>	<b>N21</b> Intermolecular Forces  <a href="https://tinyurl.com/u4z98ktb">tinyurl.com/u4z98ktb</a>

### Targets:

N16 – I can name ionic and covalent compounds and molecules.

N17 – I can write neutral formulas for covalent molecules.

N18 – I can draw the structures of molecules.





N19 – I can determine the three dimensional shape of molecules.

N20 – I can describe how the molecular shape and electron distribution around the molecule determines the polarity.

N21 – I can describe how the polarity of a molecule affects various properties, and I can compare/rank/explain how different molecules compare to each other.

# **Unit #6**

## **Reactions**

<b>N22</b> Balancing Equations  <a href="https://tinyurl.com/r6j6y32r">tinyurl.com/r6j6y32r</a>	<b>N23</b> Types of Reactions  <a href="https://tinyurl.com/k63j2hwc">tinyurl.com/k63j2hwc</a>	<b>N24</b> Predicting Products  <a href="https://tinyurl.com/3f4waez4">tinyurl.com/3f4waez4</a>
<b>N25</b> Molar Mass and Conversions  <a href="https://tinyurl.com/4pc3k7ph">tinyurl.com/4pc3k7ph</a>		

### **Targets:**

- N22 – I can balance equations to make sure the Law of Conservation of Matter is being followed.
- N23 – I can see patterns in different reactions and use those patterns to classify them into different category types.
- N24 – I can use the patterns in reaction types to predict the products made in chemical reactions.
- N25 – I can perform molar conversions to determine masses and other types of units for molecules in a reaction.

# **Unit #7**

## **Stoichiometry**

**N26**

Mole Ratio and  
Stoichiometry



[tinyurl.com/tbasw6rv](https://tinyurl.com/tbasw6rv)

**N27**

Real Life  
Examples



[tinyurl.com/xrpmwztn](https://tinyurl.com/xrpmwztn)




### **Targets:**

N26 – I can perform stoichiometry calculations to determine the quantities of chemicals involved during a reaction.

N27 – I can apply stoichiometry to problems that have real life context.

# Unit #8

## Advanced Chemical Ratios

<b>N28</b> Limiting Reagent Stoichiometry  <a href="https://tinyurl.com/4r3y2fyf">tinyurl.com/4r3y2fyf</a>	<b>N29</b> % Composition, Empirical Formula  <a href="https://tinyurl.com/45uhxcz7">tinyurl.com/45uhxcz7</a>	<b>N30</b> Combustion Analysis  <a href="https://tinyurl.com/hr4xh27e">tinyurl.com/hr4xh27e</a>
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### Targets:

- N28 – I can perform Limiting Reagent Stoichiometry calculations to determine which substance will run out first during a reaction.
- N29 – I can determine the % composition of different elements in a molecule and use that information to determine the empirical formula.
- N30 – I can determine the formula for an unknown compound by using combustion analysis data.



# **Unit #9**

## **Gas Laws**





<b>N31</b> Basic Gas Law Equations  <a href="https://tinyurl.com/34vfje97">tinyurl.com/34vfje97</a>	<b>N32</b> Ideal Gas Law  <a href="https://tinyurl.com/2hkyeyfm">tinyurl.com/2hkyeyfm</a>	<b>N33</b> Dalton's Law of Partial Pressure  <a href="https://tinyurl.com/rku7pzm6">tinyurl.com/rku7pzm6</a>
<b>N34</b> Gas Stoichiometry  <a href="https://tinyurl.com/e35bt698">tinyurl.com/e35bt698</a>		

### **Targets:**

- N31 – I can use various Gas Laws to determine variables related to what conditions a gas is under.
- N32 – I can use the Ideal Gas Law for problems involving large number of variables related to gases.
- N33 – I can do problems with multiple gases combined in the same container.
- N34 – I can do stoichiometry problems involving gases by utilizing gas laws instead of only conversion factors.

# **Unit #10**

## **Thermochemistry**

<b>N35</b> Specific Heat  <a href="https://tinyurl.com/vt7rcfxa">tinyurl.com/vt7rcfxa</a>	<b>N36</b> Calorimetry Calculations  <a href="https://tinyurl.com/3emk9dmz">tinyurl.com/3emk9dmz</a>	<b>N37</b> Heating and Cooling Curves  <a href="https://tinyurl.com/kzt9a9ad">tinyurl.com/kzt9a9ad</a>
<b>N38</b> Odds and Ends  <a href="https://tinyurl.com/ysms3hx7">tinyurl.com/ysms3hx7</a>		

### **Targets:**

- N35 – I can perform specific heat calculations to determine things such as how much energy a substance can absorb or release.
- N36 – I can use the technique of Calorimetry and the Law of Conservation of Energy to indirectly determine information about a substance that is not easy to measure.
- N37 – I can use Heating/Cooling curves to help perform calculations that may involve phase changes in addition to simple heating or cooling.
- N38 – I can extend my knowledge of Thermochemistry into smaller subtopics that are closely related to the things I already learned.

# **Unit #11**

## **Solutions**

**N39**

Solutions  
Concepts



[tinyurl.com/3zh34h8k](https://tinyurl.com/3zh34h8k)

**N40**

Solutions  
Calculations



[tinyurl.com/d8nuxemj](https://tinyurl.com/d8nuxemj)

### **Targets:**

N39 – I can learn some characteristics and terms for aqueous solutions.

N40 – I can perform various calculations to represent the concentrations of solutions in different ways.

# **Unit #12**

## **Kinetics**

### **N41**

Rate Expressions  
Average Rates



[tinyurl.com/jdtf8f7k](https://tinyurl.com/jdtf8f7k)

### **N42**

Instantaneous  
Rates, Rate Laws



[tinyurl.com/u9xdymvb](https://tinyurl.com/u9xdymvb)

### **Targets:**

N41 – I can see how various factors affect the rate of a reaction and can express and calculate that average rate in different ways.

N42 – I can calculate the rate at a specific moment in time, and write a Rate Law to express how the rate changes when changing the concentration of reactants.

# **Unit #13**

## **Equilibrium**

**N43**

Le Chatelier's  
Principle



[tinyurl.com/4u5yd8we](https://tinyurl.com/4u5yd8we)

**N44**

Equilib. Constant  
and Quotient



[tinyurl.com/buyfwn9b](https://tinyurl.com/buyfwn9b)

**N45**

ICE  
Tables



[tinyurl.com/j4trsh](https://tinyurl.com/j4trsh)

### **Targets:**





N43 – I can predict how a reaction will respond when a “stress” is applied.

N44 – I can use calculations to predict if a reaction will be product favored or reactant favored once it reaches equilibrium.

N45 – I can use ICE Tables to organize data related to what the concentrations of chemicals are once a reaction is at equilibrium.

# **Unit #14**

## **Acids and Bases**

<b>N46</b> Acids/Bases and pH Calculations  <a href="https://tinyurl.com/4mxx6cxt">tinyurl.com/4mxx6cxt</a>	<b>N47</b> Nomenclature, Strong vs Weak  <a href="https://tinyurl.com/mapy9m9s">tinyurl.com/mapy9m9s</a>	<b>N48</b> Weak Acids and Bases  <a href="https://tinyurl.com/u742njjj">tinyurl.com/u742njjj</a>
<b>N49</b> Salts and Hydrolysis  <a href="https://tinyurl.com/4cke5kzw">tinyurl.com/4cke5kzw</a>	<b>N50</b> Acid Base Titrations  <a href="https://tinyurl.com/nmu6ju5m">tinyurl.com/nmu6ju5m</a>	

### **Targets:**

N46 – I can describe and identify acids/bases, and find their pH and related values.

N47 – I can name common acids/bases, and identify strong versus weak.

N48 – I can calculate the pH and related values for weak acids/bases by using the techniques of ICE Tables.

N49 – I can identify if a salt is acid/basic/neutral when added to water and can write the equation for the salt reacting with the water.

N50 – I can perform titration calculations as well as physically perform a titration in the lab.