

AP Chemistry
Organic Chemistry

Concepts	Details																								
Hydrocarbons	<p>What is a hydrocarbon?</p> <p>What is organic chemistry?</p> <p>Prefixes used to indicate the number of carbons in a chain.</p> <table border="1"> <thead> <tr> <th>Number of Carbons</th> <th>Prefix</th> <th>Number of Carbons</th> <th>Prefix</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td>6</td> <td></td> </tr> <tr> <td>2</td> <td></td> <td>7</td> <td></td> </tr> <tr> <td>3</td> <td></td> <td>8</td> <td></td> </tr> <tr> <td>4</td> <td></td> <td>9</td> <td></td> </tr> <tr> <td>5</td> <td></td> <td>10</td> <td></td> </tr> </tbody> </table> <p>Hint: Use the HONC rule when drawing structural diagrams. Hydrogen creates one bond Oxygen creates two bonds. Nitrogen creates three bonds. Carbon creates 4 bonds.</p>	Number of Carbons	Prefix	Number of Carbons	Prefix	1		6		2		7		3		8		4		9		5		10	
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Alkanes	<p>A. What is an Alkane</p> <ul style="list-style-type: none"> • <p>B. Naming Rules</p> <ul style="list-style-type: none"> • • <p>Draw the structure for pentane</p> <p>Name the following hydrocarbon</p>																								
Alkenes	<p>A. What is an Alkene</p> <ul style="list-style-type: none"> • <p>B. Naming Rules</p> <ul style="list-style-type: none"> • 																								

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	<ul style="list-style-type: none">• Draw the structure for 2-pentene <p>Name the following hydrocarbon</p>
Alkyne	<p>A. What is a Alkyne</p> <ul style="list-style-type: none">• <p>B. Naming Rules</p> <ul style="list-style-type: none">•• <p>Draw the structure for 4-pentyne</p> <p>Name the following hydrocarbon</p>
Branched Hydrocarbons	<p>What are branches?</p> <p>Rules for naming branches.</p> <p>Rules for naming compounds with branches.</p>

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	<p>Draw the structure for 2,3-Dimethylbutane</p> <p>Name the following hydrocarbon</p>
Functional Groups	<p>A. Alcohols</p> <ul style="list-style-type: none">○ Group○ Naming rules <p>B. Carboxylic Acids</p> <ul style="list-style-type: none">○ Group○ Naming rules <p>C. Ethers</p> <ul style="list-style-type: none">○ Group○ Naming rules <p>D. Aldehydes</p> <ul style="list-style-type: none">○ Group

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- Naming rules

E. Ketones

- Group
- Naming rules

F. Esters

- Group
- Naming rules

Draw the structures of the following compounds, identify what type of chemical they are and name them accordingly.

1-Propanol

Ethyl methyl ether

Butanoic Acid

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	<p>Ethanal</p> <p>Methyl Ethanoate</p> <p>2-Hexanone</p>
Isomers	<p>○</p> <p>Draw the structures of the following two isomers.</p> <p>Butane Methyl propane</p>
Combustion Reactions	<ul style="list-style-type: none">○ For hydrocarbon combustion the products are always carbon dioxide and water.○ Any reaction that says “burned in air”, oxygen needs to be added to the reactants.○ For compounds other than hydrocarbons, the reaction should be written as a synthesis reaction with oxygen.○ Correctly write reactants and products and balance. <p>Hexane is burned in air.</p>

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<p>Reactions of Alkenes and Alkynes</p>	<p>3,3-diethyl octane is burned in air.</p> <p>Addition Reactions:</p> <p>Halogenation:</p> <p>What are the Reactants?</p>
<p>Esterification Reactions</p>	<p>What are the products?</p> <p><u>Example</u>: ethanoic acid and ethanol react:</p> <p>Practice: Butanoic acid and methanol react:</p>