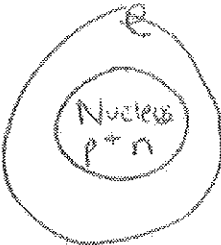


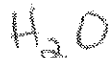
Basic Chemistry Review

Atoms	Bonds				
<p>Atomic diagram:</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>p: proton n: neutron e: electron</p> </div> </div>	<p>What is a bond? - transfer electrons</p> <p>Different types of bonds</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Ionic</th> <th style="text-align: center;">Covalent</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> - transfer e⁻ - breaks down in water - metal + nonmetal </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> - share e⁻ - not easily broken - 2 nonmetals </td> </tr> </tbody> </table>	Ionic	Covalent	<ul style="list-style-type: none"> - transfer e⁻ - breaks down in water - metal + nonmetal 	<ul style="list-style-type: none"> - share e⁻ - not easily broken - 2 nonmetals
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<p style="text-align: center;">Solutions</p> <p>What is a solution? - substance dissolves in another</p> <p>Solute: - what dissolves</p> <p>Ex. - powder</p> <p>Solvent: - does the dissolving</p> <p>Ex. water</p>	<p style="text-align: center;">Acids vs. Bases</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Acids</th> <th style="width: 50%; text-align: center;">Bases</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> - below 7 on pH scale - sour taste - Soda, fruits </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> - above 7 on pH scale - bitter taste - cleaning products </td> </tr> </tbody> </table>	Acids	Bases	<ul style="list-style-type: none"> - below 7 on pH scale - sour taste - Soda, fruits 	<ul style="list-style-type: none"> - above 7 on pH scale - bitter taste - cleaning products
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<p style="text-align: center;">Reactions</p> <p>Exergonic/Exothermic - release energy/heat - fire burning</p> <p>Endergonic/Endothermic - absorb energy/heat - cooking</p>	<p style="text-align: center;">Equations</p> <p>Example:</p> <div style="text-align: center;"> $\overbrace{\text{CO}_2 + \text{H}_2\text{O}}^{\text{reactants}} \rightarrow \overbrace{\text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2}^{\text{products}}$ </div> <p>Reactants: left side</p> <p>Products: right side</p>				

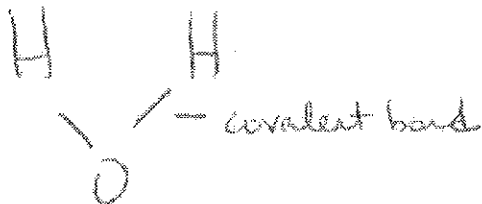
Water Notes

Water's Structure and Formula

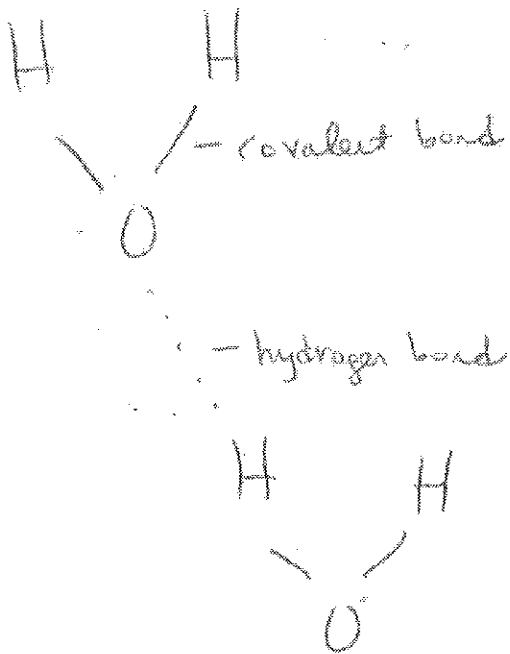
Chemical Formula for Water:



Structure and Bond in one Water molecule:



Structure and Bonds in Two Water molecules:



Water's Properties

- 1) Water is able to stick to itself and other things
 - Cohesion: water sticks to water
 - Adhesion: water sticks to other things
 - Scenarios of cohesion and adhesion:
 - water moving in a plant
 - Penny lab
 - water bug on top of water
- 2) Water is a versatile solvent
 - water dissolves almost everything
 - not dissolves fat, oil
 - Scenarios of water as a versatile solvent:
 - dissolve → move your food
- 3) Water is less dense in its solid form
 - ice floats on top surface of bodies of water
 - Scenarios
 - fish under ice are able to live
- 4) Water has a high specific heat
 - takes a lot of energy to change water's temp.
 - Scenarios
 - water stays cooler than sidewalk or pavement
 - Evaporative cooling
 - sweating cools our bodies