

Name: _____

Period: _____

Seat#: _____

TASK #		ANSWER					
1	Sort by: Ionic, covalent or metallic	Ionic		Covalent		Metallic	
2	Sort by: Polar or non-polar	Polar			Non-Polar		
3	Sort by: "Dominant" IMF present – Dipole-dipole or London Forces	Dipole-Dipole			London Forces		
4	Sort by: Hydrogen bonding or No Hydrogen bonding	Hydrogen Bonding			No Hydrogen Bonding		
5	Sort by: Dipole-dipole or hydrogen bonding	Dipole-Dipole			Hydrogen Bonding		
6	Sort by: "Dominant" IMF present – London, Dipole-dipole, or Hydrogen Bonding	London Forces		Dipole-Dipole		Hydrogen Bonding	
7	Rank from: Lowest to Highest expected boiling point	Lowest					Highest
8	Rank from: Lowest to Highest expected boiling point	Lowest					Highest

Dougherty Valley HS Chemistry
Bonding and Structure – IMF Card Sort and Practice

Q#	Questions												
1	<p>H₂S, O₂ and CH₃OH all have comparable molecular masses. List the dominant type of IMF. (<i>H₂S is bent like water</i>), then rank the strength of each compound based on IMFs within the samples. (1 = strongest, 2 = in between, 3 = weakest).</p> <table border="1" data-bbox="188 306 837 464"> <thead> <tr> <th data-bbox="188 306 302 338">Substance</th> <th data-bbox="302 306 643 338">IMF</th> <th data-bbox="643 306 837 338">Relative Strength</th> </tr> </thead> <tbody> <tr> <td data-bbox="188 338 302 369">HBr</td> <td data-bbox="302 338 643 369"></td> <td data-bbox="643 338 837 369"></td> </tr> <tr> <td data-bbox="188 369 302 401">O₂</td> <td data-bbox="302 369 643 401"></td> <td data-bbox="643 369 837 401"></td> </tr> <tr> <td data-bbox="188 401 302 464">CH₃OH</td> <td data-bbox="302 401 643 464"></td> <td data-bbox="643 401 837 464"></td> </tr> </tbody> </table>	Substance	IMF	Relative Strength	HBr			O ₂			CH ₃ OH		
Substance	IMF	Relative Strength											
HBr													
O ₂													
CH ₃ OH													
2	<p>Circle the substances below that can form a hydrogen bond in its pure form. Explain why the other species couldn't hydrogen bond. C₂H₆ CH₃NH₂ KCl CH₃CH₂CH₂OH CH₃OCH₃</p>												
3	<p>Rank the following compounds from weakest intermolecular forces to strongest. Justify your answers. H₂S I₂ N₂ H₂O</p>												
4	<p>Rank the following from weakest intermolecular forces to strongest. Justify your answers. (<i>They are all bent like water</i>) H₂Se H₂S H₂PO H₂Te</p>												
5	<p>Using your knowledge of molecular structure, identify the main intermolecular force in the following compounds. You may find it useful to draw Lewis structures to find your answer. PF₃ H₂CO HF</p>												
6	<p>Explain how dipole-dipole forces cause molecules to be attracted to one another.</p>												
7	<p>Explain how London Forces cause molecules to be attracted to one another.</p>												
8	<p>Rank the following compounds from lowest to highest boiling point: calcium carbonate, methane, methanol (CH₄O), dimethyl ether (CH₃OCH₃).</p>												
9	<p>Explain why nonpolar molecules usually have much lower surface tension than polar ones.</p>												
10	<p>What is the difference between a regular dipole-dipole force and a hydrogen bond force? What is an example of hydrogen bonding that occurs in your body?</p>												