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

Worksheet #15

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	H_2S, O_2 and CH_3OH all have comparable molecular masses. List the dominant type of IMF. (*H_2S is bent like water*), then rank the strength of each compound based on IMFs within the samples. (1 = strongest, 2 = in between, 3 = weakest). Substance IMF Relative Strength HBr O_2 CH_3OH
2	Circle the substances below that can form a hydrogen bond in its pure form. Explain why the other species couldn't hydrogen bond. C_2H_6 CH_3NH_2 KCl $CH_3CH_2CH_2OH$ CH_3OCH_3
3	Rank the following compounds from weakest intermolecular forces to strongest. Justify your answers. H_2S I_2 N_2 H_2O
4	Rank the following from weakest intermolecular forces to strongest. Justify your answers. *They are all bent like water)* H_2Se H_2S H_2Po H_2Te
5	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. PF_3 H_2CO HF
6	Explain how dipole-dipole forces cause molecules to be attracted to one another.
7	Explain how London Forces cause molecules to be attracted to one another.
8	Rank the following compounds from lowest to highest boiling point: calcium carbonate, methane, methanol (CH_4O), dimethyl ether (CH_3OCH_3).
9	Explain why nonpolar molecules usually have much lower surface tension than polar ones.
10	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?