**Solubility and Intermolecular forces**

**Review** – what are intermolecular forces?

*forces between molecules*

**What are the types of intermolecular forces?**

London Forces – *present between all molecules due to formation of temporary dipoles*

Dipole-Dipole Forces – *attraction of the positive part of one molecule to the negative part of another*

Hydrogen Bonding – *very strong intermolecular force that exists – only when there is H bonded directly to O,N, or F; attraction from the H of one molecule to the O,N, or F in a neigbouring molecule*

**Why does this matter now?**

Look at your results from last day’s lab

What do you notice about what types of compounds will dissolve in polar solvents?

*Ionic or polar covalent*

What type of compounds will dissolve in non-polar solvents?

*Non-polar*

What types of liquids are miscible?

*Polar and polar (by extension, non-polar and non-polar)*

Why? Look in your Hebden book or in the online textbook to try and find out.

*In order for a substance to dissolve, the molecules (for a covalent compound) or ions (in an ionic compound) need to be separated and surrounded by solvent molecules. If the solvent is non-polar, the intermolecular forces are relatively weak, and cannot overcome the attraction between the ions or polar molecules. On the other hand, a polar solvent is able to solvate both positive and negative ions (or polar solute molecules) and interact with them due to the attraction of opposite charges.*

*If the solute is non-polar, the strong attraction between polar solvent molecules keeps them from interacting with the non-polar solute molecules. Only a non-polar solvent will be able to disrupt its intermolecular forces to solvate a non-polar solute.*