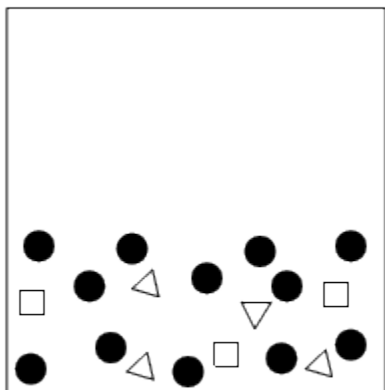
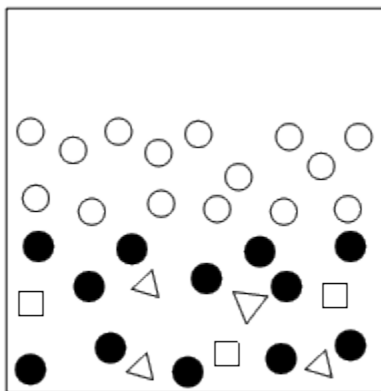


# SOLVENT PARTITIONING

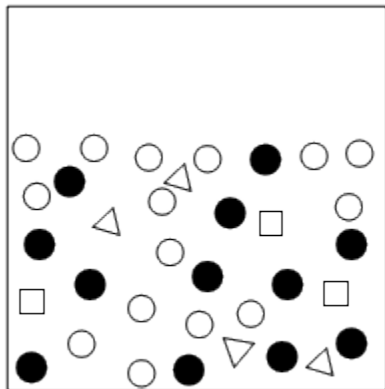
This method is often called "extraction". Extraction means drawing a compound out of a mixture using a solvent. Solvent partitioning is more specific. It means compounds have a "choice" of two solvents that they can dissolve in. Some compounds dissolve in one solvent. Some compounds dissolve in the other solvent. That way the compounds in the mixture become separated into two groups.



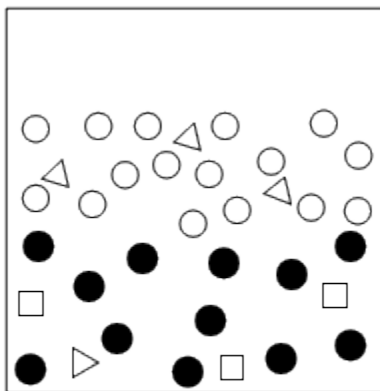
two compounds are dissolved in a solvent



a second solvent is added; it is immiscible in the first solvent



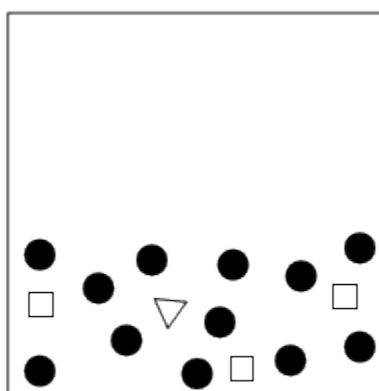
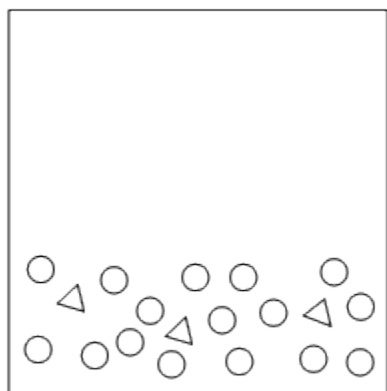
the solvents are mixed together



when the solvents separate again, the compounds go into one solvent or the other based on their polarity

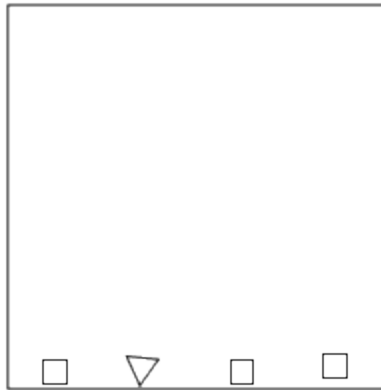
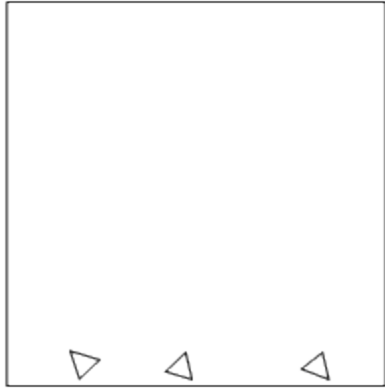
Solvent partitioning depends on solubility. It depends on the solubility in two different solvents, though. It depends on an equilibrium: does the compound dissolve more in solvent A, or solvent B?

Solvent partitioning requires two solvents that are not miscible in each other. Usually one of the solvents is water. The other solvent is a liquid that does not dissolve very well in water, such as diethyl ether (this is the most common type of ether, and it is often called simply "ether"). If you look closely at a mixture of ether and water, you will see two layers because the two compounds do not dissolve very well in each other.



the two solvents are then separated

It's important that the two solvents are immiscible, because then it is easy to separate them from each other. The top liquid can be drawn off with a pipet, or the bottom layer can be drained out via a stopcock. The compounds that dissolved in the ether have thus been separated from the water-soluble compounds. Because ether evaporates very easily, the compounds that dissolved in the ether can also be separated from the ether (see "distillation"). As a result, purer compounds can be obtained.



the two solvents are evaporated to give two separate compounds

Source : [http://employees.csbsju.edu/cschaller/Principles%20Chem/purification/solvent\\_partitioning.htm](http://employees.csbsju.edu/cschaller/Principles%20Chem/purification/solvent_partitioning.htm)