**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_**

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| **Week 2:** | **Mixtures** |
| **Question:** | Explain, in terms of particles, what is meant by a mixture and a pure substance. |
| Model: | |
| A pure substance is one which contains only one single element or compound. For example, distilled water is pure because it only contains water molecules.  Some substances are mixtures because they contain two or more different substances that are not chemically joined together. For example, sea water contains salt and water so is a mixture.  Formulations are mixtures that have been designed as a useful product, For example, paint, fuel, alloys are all formulations.  Solutions are examples of a mixtures. A solution is a mixture of one substance dissolved into another so it is evenly spread throughout. This is usually made up of a solid called a solute, for example salt, and a liquid called a solvent, for example water. When the solute (salt) dissolves into the solvent (water) a solution (salty water) is formed.  Some substances are not able to dissolve into a solvent. We call these substances insoluble. For example, sand, fats and wood do not dissolve in water so are insoluble.  Because mixtures are not chemically bonded together, we can easily separate them using separation techniques.  For example, if we have a mixture of an insoluble solid and a liquid we can use filtration because the solid particles are larger than the liquid particles so will not pass through the filter paper.  For a soluble solid and a solvent, we can use crystallisation where the solution is heated and the substances evaporate and are separated based on their different boiling points.  For two liquids mixed together, we can use distillation. This works because when the mixture is heated the two liquids will evaporate and are separated based on their boiling points.  For different coloured inks or dyes we can use chromatography. | |