Solvents & Solutes Name\_\_\_\_\_\_\_\_\_\_\_

**Introduction:** In this lab you will try to determine solubility and speed of dissolving. But first, define the following terms.

Solubility \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solvent\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solute\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dissolve\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Saturated\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Granulated\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Engage**: Look at the substance in your cup. In your groups, make an inference using your observations as to whether or not the substance is a solute. Explain your reasoning:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Perform:** Time for a contest! We are going to see which group can get their mystery substance to dissolve (if it can) the fastest). Before the contest write down any method your group can use to speed up the dissolving process.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Results:

Dissolve Time: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

The substance being poured in the  
water is the \_\_\_\_\_\_\_\_\_

The water which does the dissolving is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Was your group able to speed up the process of dissolving? \_\_\_\_\_\_\_\_\_\_\_\_

Now that we have done this experiment, list any processes that can increase the speed of solubility, and explain why that process works.

|  |  |
| --- | --- |
| Process | How and why does it speeds up dissolving process? |
|  |  |
|  |  |
|  |  |
|  |  |

Is there any way to separate the solute from the solvent after it is dissolved? \_\_\_\_\_\_\_\_

How could you separate out the solute? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Matter Lab Name\_\_\_\_\_\_\_\_\_\_\_

Solvents & Solutes

**Introduction:** In this lab you will try to determine solubility and speed of dissolving. But first, define the following terms.

Solubility \_How much of a specific solute will dissolve into a specific solvent\_\_\_\_\_\_

Solvent\_\_\_\_The substance doing the dissolving\_(water)\_\_

Solute\_\_\_The substance getting dissolved\_\_\_(salt or sugar)\_\_\_

Dissolve\_\_\_\_A substance is broken down (gets smaller) into a solvent (you cannot see it)

Saturated\_\_\_A solvent is so full of a solute it cannot dissolve any more\_\_\_\_\_\_

Granulated\_\_Grain size particles (usually small) but larger than powder\_\_\_\_\_

**Engage**: Look at the substance in your cup. In your groups, make an inference using your observations as to whether or not the substance is a solute. Explain your reasoning:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Perform:** Time for a contest! We are going to see which group can get their mystery substance to dissolve (if it can) the fastest. Before the contest write down any method your group can use to speed up the dissolving process.

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Results:

Dissolve Time: \_The fastest time was \_\_\_\_\_\_\_\_\_\_\_\_\_

The substance being poured in the  
water is the \_**solute**\_\_

The water which does the dissolving is called the \_\_\_**solvent**\_\_

Was your group able to speed up the process of dissolving? \_\_\_\_\_\_\_\_\_\_\_\_

Now that we have done this experiment, list any processes that can increase the speed of solubility, and explain why that process works.

|  |  |
| --- | --- |
| Process | How and why does it speeds up dissolving process? |
| 1. Heat the solvent! | The molecules of the solvent and solute move faster breaking down the solute! |
| 1. Crush the solute | Pieces are smaller so you are breaking it down, and you are increasing the surface area of the solute. More of the solute is exposed to the solvent. |
| 1. Stir or shake the solution | Stirring makes the molecules move faster, and weathering of the solute takes place. |
| 1. Adding more solvent? | Remember, solubility will not change. Adding more water only increases the amount of solute you can add. Increases the ratio of solvent to solute raises saturation! |

Is there any way to separate the solute from the solvent after it is dissolved? yes

How could you separate out the solute? \_\_evaporation, filter, \_\_\_\_

Matter Lab Name\_\_\_\_\_\_\_\_\_\_\_

Solvents & Solutes

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Solute\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dissolve\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Saturated\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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How could you separate out the solute? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_