

Grade 7 Science – **Solutions Demonstration**

Name: _____ Class: _____ Date: _____

Anything that is not a pure substance is a MIXTURE

These can be easily seen as a mixture if it has more than one type of material in it. If you can see that it is not the same. In this case, it is a heterogeneous mixture. This is known as a MECHANICAL MIXTURE.

If a mixture looks all the same since one thing is dissolved in the other substance, this is known as a homogeneous mixture or a SOLUTION.

Creating Mixtures – Part 1

Describe what you see in the cups:

Cup A

25 mL brown, fine-grained granular solid

Cup B

150 mL clear colourless liquid

After they were combined, what did you observe:

The solid disappeared and the liquid became brown and clear with some foam or bubbles on top.

Could they be separated? Explain.

No, when passed through the filter paper, the liquid passed through with no residue.

What is this called?

This is called a solution.

Creating Mixtures – Part 2

Describe what you see in the cups:

Cup C

25 mL brown, fine-grained granular solid

Cup D

150 mL clear colourless liquid

After they were combined, what did you observe:

The brown solid grains did not dissolve – they just sank to the bottom – even when agitated with the spoon.

Could they be separated? Explain.

Yes. The filter paper caught all the solid particulate and it was easily separated from the liquid.

What is this called?

Mechanical Mixture

The substance that is the smaller part of the solution is the one that dissolves and is called the Solute.

The substance that is the larger portion of the solution is the one that does the dissolving and is called the Solvent.

Salt water can be separated by Evaporation or the water can be captured by a distillation process.

The amount of solute determines how much the properties of the Solvent change.

The amount of solute in the solvent is a measure of the ___ **CONCENTRATION** ___ of the solution. When there is only a little solute in the solvent, we call the solution ___ **DILUTE** ___ and when there is a lot, we call the solution ___ **CONCENTRATED** ___.

When the solution has as much of the solute that it can dissolve, we call the solution **SATURATED** ___.

There is a given amount of solute that can dissolve in a given solution at a given temperature and pressure. This is known as the ___ **SATURATION POINT** ___.

In special circumstances, when a substance has more solute in the solution, the solution is known as ___ **SUPER SATURATED** ___. The solute then comes out of solution through ___ **PRECIPITATION or CRYSTAL** ___ growth.

When a substance does not dissolve in a solvent, we call this ___ **INSOLUBLE** ___.

In making Maple syrup

- This sweet product is a solution.
- The solvent is _____
- The solute is _____
- Initially, when tapped, it is _____
- When much of the water is boiled off (1/40), the maple sugar is _____ and becomes sweeter.
- If all the water is carefully boiled off you get _____

