**Lab: Solubility: CLASS COPY—PLEASE DO NOT WRITE ON THIS SHEET!!**

**Purpose**: To test the properties of different substances and to determine their solubility in various liquid substances.

## Pre-Lab Questions:

1. IF (not saying this is true, but IF) salt dissolves in water, what will this look like? How will you know if a substance is soluble?

**Materials**

* Pre-made cups of sugar, powder, flour, salt (each cup is labeled)
* Pre-made cups of oil, water, rubbing alcohol (each cup is labeled)
* 12 toothpicks
* 1 Well plate
* Goggles!

**Experiment**

**Problem 1**: Which substances will dissolve-be soluble-in water?

Hypothesis:

1. Using the cup filled with water, slowly and carefully fill 4 spaces in the well plate with water.
2. Use the amount of powdered substance that teacher has specified. (Teacher: show students how to measure amounts of powder using a paperclip. Fill one end of the clip to make sure that the same amount is used every time) fill separate well spaces with sugar, powder, flour and salt. Put them in order so you remember which is sugar, powder, etc.
3. Use a clean/new toothpick to stir the mixture. Be sure to use a different toothpick every time!
4. Record your observations for each substance on your student worksheet.
5. Wash your well plate and dry it with a paper towel and bring it back to your desk to start Problem # 2.

**Problem 2**: Which substances will dissolve-be soluble-in oil?

Hypothesis:

1. Using the cup filled with oil, slowly and carefully fill 4 spaces in the well plate with water.
2. Repeat steps from the above directions.
3. Make sure to use soap when you wash out the well plate to get out all of the oil.

**Problem 3**: Which substances will dissolve-be soluble-in rubbing alcohol?

Hypothesis:

1. Using the cup filled with rubbing alcohol, slowly and carefully fill 4 spaces in the well plate with water.
2. Repeat steps from the above directions.
3. Wash your well plate with soap and water and dry it off with a paper towel.

**Clean-up**:

1. put all cups back where you found them in the correct labeled section
2. be sure that your well plate is clean
3. use the “solution” to clean goggles and put back in the box

**Data**

**Questions to consider for your observations:** Do you still see small particles or have all of the particles mixed with the liquid? *What’s the color-- Clear? Cloudy? No change?*

**Water**

|  |  |  |
| --- | --- | --- |
| **Substance** | **Observations (at least 2!)** | **Soluble-**  **yes or no?** |
| Sugar |  |  |
| Salt |  |  |
| Baby Powder |  |  |
| Flour |  |  |

**Oil**

|  |  |  |
| --- | --- | --- |
| **Substance** | **Observations (at least 2!)** | **Soluble-**  **yes or no?** |
| Sugar |  |  |
| Salt |  |  |
| Baby Powder |  |  |
| Flour |  |  |

**Rubbing Alcohol**

|  |  |  |
| --- | --- | --- |
| **Substance** | **Observations (at least 2!)** | **Soluble-**  **yes or no?** |
| Sugar |  |  |
| Salt |  |  |
| Baby Powder |  |  |
| Flour |  |  |