**25th April 2019**

**Report for the Science Museum**

**Soluble and Insoluble Materials**

**Oobleck**

We mixed cornflour and water together and observed what happened. The cornflour did not dissolve into the water – we could not see through it. It behaved in an odd way though, we discovered that when we stirred, touched or moved it quickly it behaved like a solid. However, if we stirred or touched it slowly it behaved like a liquid. This is known as a Newtonian fluid. When you mix cornflour with water, the large cornflour particles remain 'suspended' (float around) in the liquid.

Cornflour slime is thick because the particles are packed very close together, yet they are still able to slip past each other. When you stir the mixture slowly it acts like a liquid because the suspended particles have time to move past each other.

Yet when you put sudden stress (or pressure) on the mixture, by rolling it for example, the water quickly flows out of the area but the particles do not have enough time to move out of the way. The cornflour particles temporarily stay packed up where they are, which makes the slime act like a solid. We all enjoyed this activity.

**Dissolving Experiment**

We used lots of materials and ensured that we had a fair test by using the same amount of solvent (water) each time and stirring each mixture for the same amount of time. Before we carried out the experiment we made our predictions on what might happen.

We wrote up our findings in a table like this:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Material** | **Dissolved** | **Did not dissolve (formed sediment)** | **Reacted with water to form new substance** | **Observations/Explanation** |
| Vitamin C tablets  | Yes | No | Vitamin C Drink | The tablet fizzed in the water, and changed the colour  |
| Filter Coffee | No | Yes |  | The filter coffee did not dissolve and formed a sediment on the bottom, but the water changed colour slightly so some of us said it was partly soluble. |
| Instant Coffee | Yes |  |  | The Water turned brown but we could see through it in light. There were no bits floating in water. |
| Salt | Yes |  |  | Clear solution |
| Sugar | Yes |  |  | Clear Solution |
| Crushed Biscuits | No | Yes |  | Crumbs floated for a while then sank to the bottom. |
| Oil | No | Yes |  | The oil stayed on the surface of the water |
| Cocoa | No | Yes |  | The cocoa would not mix with the water. |
| Flour | No | Yes |  | The flour mixed with the water but the mixture was not transparent. |
| Ready Brek | No | Yes | Thickened | The Ready Brek did not mix well, and slightly thickened  |
| Tea Leaves | No | Yes |  | The tea leaves floated on the top of the water. We wondered if this would change if it was hot water. |

We would like to try this experiment with hot water, or different solvents.

 

 

  

 