**Cornstarch in water**

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**Aim**: explore a material that is solid-like at short timescales and liquid at long timescales, thereby challenging the notion that all materials are solid or liquid or gas.

**Age**: 6+

**Complexity**: moderate. This experiment requires explaining timescales i.e. the material behaves differently at short and long timescales.

**Cost**: £5

**Location**: suitable to be done at home.

**Materials & Equipment**

* Cornstarch (cornflour)
* Tap water
* Measuring jug
* Washing up bowl
* Optional: food colouring

**Outline:**

1. Pour cornflour into the bowl forming a layer of about an inch thick.
2. Optional: add food colouring to the water in the measuring jug.
3. Gradually pour water from the measuring jug over the cornflour, mix until it has the consistency of custard.
4. Punch the top of the mixture with the side of a fist i.e. not with the knuckles.
5. Submerge fist slowly into the mixture, then try and pull it up slowly.

**Learning outcomes:**

- Explore materials that are not easily classified as solid or liquid or gas.

- Explore a material that behaves like a solid/liquid at short/long timescales.

- Discover that there are several of these non-Newtonian fluids around the house.

**RISK ASSESSMENT**

**Adult supervision is required for any experiment!**

Overall, this is a relatively safe experiment i.e. all ingredients are edible.

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| HAZARD | Likelihood and Seriousness of Injury | Control Measures | Remaining Risk |
| Pulling fingers | Rather low | Pull fist out of mixture slowly | Low |
| Hitting face with hand or bowl | Rather low | Pull fist out of mixture slowly | Low |
| Ingestion of solid-like material | Rather low | Pull fist out of mixture slowly  Dilution with water makes material more liquid-like | Low |

**First Aid: dilution with water makes material more liquid-like, which also helps cleaning.**

**Remember - never do experiments alone!**