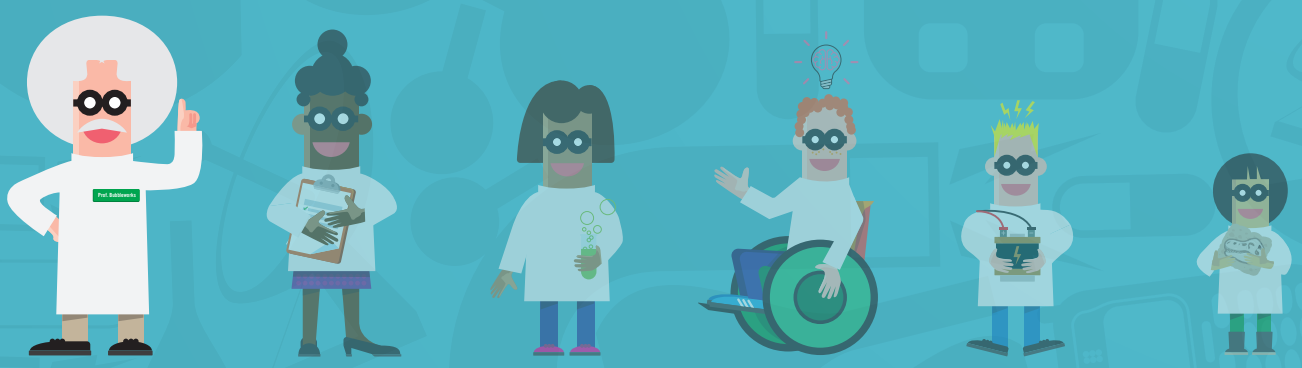
YEAR 1

PROFESSOR BUBBLEWORKS

Connections 2023
Working Scientifically



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Year 1 Focus - Electricity

Introduction

We looked at a number of different demonstrations on your science day in relation to forces including some of all of these: Flying table tennis balls, Tennis ball launch and Bernoulli's windbags + more.

Write down your favourite demonstration below:

Draw what happened

Write down - Different materials

1.

2.

3.

4.

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Experiment: Materials Experiments

Background science

Escaping from quicksand is easier than you might think. Stepping into quicksand is like stepping in a pond of goo. Your weight causes you to sink. A person's natural instinct is to thrash around in an attempt to get out. In fact, this is the worst thing you could do because you only succeed in forcing yourself down farther in the quicksand pit.

What is quicksand?

Quicksand consists of light sand or mud, blended with water.

Where are you likely to find quicksand?

Riverbanks, beaches, lake shorelines, marshes and near underground springs.

What other types of materials are gooey and messy?

Slime, mud, jelly, shaving foam, clay.

Is quicksand very common to find?

Quicksand is much more common than you might think – but most quicksand is only a few inches deep.

Equipment needed

Item	Tips
Cornflour	Pick up in the baking aisle
Shallow baking trays	1 per group
Items to play with	Toys - rubber animals work well
Zip bag	Best to pour into and place in the bin
Mixing bowl	Large mix bowl

Experiment

Let's get hands on

Quicksand

Instructions

1. Gather the cornflour, water and mixing bowl.
2. Add in 100g of cornflour and add ½ cup slowly whilst mixing (per tray)
3. As a general rule you will need a mix of 10 parts cornflour and 1 part water
4. Mix until the consistency is like honey
5. Pour into the baking trays
6. Experiment with fingers, first stir slowly, and then as fast as you can. Skim your finger across the top of the glop.
7. Try to roll the fluid between your palms to make a ball.
8. Now try to slap it, what happens?
9. Try to place some rubber animals in the quicksand, observe what happens.

Review of Experiment

What's going on here?

You can't move your hand around very fast in the mix! In fact, the faster you thrash around, the more solid the gooey stuff becomes. Sink your entire hand into the goo and try to grab the fluid and pull it up. That's the sensation of sinking in quicksand!

The cornstarch and water mixture acts like a solid sometimes and a liquid at other times. This concoction is an example of a suspension - a mixture of two substances, one of which is finely divided and dispersed in the other. In the case of the cornstarch quicksand, it's a solid dispersed in a liquid.

When you slap the cornstarch quicksand, you force the long starch molecules closer together. The impact of this force traps the water between the starch chains to form a semi-rigid structure. When the pressure is released, the cornstarch flows again. Some other examples are honey and ketchup which are liquids that have a high resistance to flow.

Please make sure you clean your hands thoroughly after the experiment.

Workshop Scientifically

We are now going to do an experiment to extend our learning from the workshop. Please use your experiment sheet to work scientifically through each stage.

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Title of experiment:

Things we used:

Write

Draw

Things we did:

What happened:

Write

Draw