

National Science Week 14 - 22 August, 2021

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Last week was National Science Week (14 - 22 August) and the theme this year was 'Food: Different by design'. Our class, Year 4 LA 27, decided to combine some maths measuring hands-on skills and look at some food chemistry. On Thursday 19 August, we did some experiments involving yeast and chemical reactions. We had three different groups use yeast, some added sugar and yeast, some just yeast and warm water. We used Ziplock bags and balloons to show what happened when we mixed yeast and warm water. The balloon that captured the most gas (we could see bubbles in the different yeast or water, yeast and sugar mixes) was in the experiment involving a smaller bottle and sugar (they had the fullest balloons). We showed our experiments to Mr Caldwell and he told us what was in the balloons and how we could make the balloons get big again by putting them in the sun. Mrs Marrion explained this was because heat increases the rate of chemical reactions, so we get more gas given off.

We learned a bit about equipment like sieves and had to find a different way of weighing butter because Mrs M forgot to bring in scales to measure mass! We also learned about fractions and how to make 1 cup or 3 cups if we only had half, quarter or third size cups. We learned that tsp. means teaspoon and tbsl. means tablespoon. We learned how to measure water in jugs with mls or cup measurements.

We talked a little about different types of bread and what makes the bread rise and that some cultures make breads without yeast or baking powder. We also made damper (no yeast) for the whole class and oobleck. Oobleck was just for a bit of fun but also looking at different states of matter (did you know there were 4?). Oobleck reacts really strangely if you use greater force (shear) on it, so it doesn't fit easily into solid/liquid state of matter. We don't have enough space for the damper recipe, but they are easy to find online. Thanks to Mrs Bunn for getting the damper out of the ovens and Mr Brown for cutting it up and helping with honey. It was yummy!

Here are our experiments:

Inside the balloon was H_2O & CO_2

Group 1:

Using a small plastic drinking bottle,
a balloon,
one cup of warm water,
one tablespoon of sugar and
one packet of dry yeast,



Group 2:

- a small snap lock sandwich bag,
- 1 tablespoon of dry yeast,
- a spoon, and
- 1/2 cup of warm water



Group 3:

- a clean empty 1.25 litre soft plastic drink bottle,
- 1/2 cup of warm water,
- 1 tablespoon of dry yeast,
- a balloon,
- a small funnel, and
- a spoon

References and Resources Used

To find out the states of matter

https://kids.kiddle.co/States_of_matter

Fluid Dynamics video

<https://www.youtube.com/watch?v=Yvvq9fHtam8&t=4s>

Harder reading and ideas - What are Newtonian fluids?

<https://blog.craneengineering.net/what-are-newtonian-and-non-newtonian-fluids>



HOW TO MAKE OOBLECK

What state of matter is oobleck? Solid, liquid, non-Newtonian or Newtonian liquid, gas?

Equipment

Cup, bowl, spoon, food colouring

Ingredients

2 cups of cornflour, 1 cup of water, food colouring added to water

Procedure or steps

1. Mix 2 cups of cornstarch to 1 cup of water into a bowl. Mix the cornstarch and water until your oobleck is formed.

Tip: If you would like to color your oobleck, add your food coloring to your water and then mix with the cornstarch.

How Long Does Oobleck Last?

Oobleck will last a day. After that it starts to go bad.

To dispose of the oobleck, we like to let it dry out overnight. The next day, you can take a spoon and smash it up into little pieces that can be placed in your green bin. If you want to wash it out, make sure to mix it with a lot of hot water.

OOBLECK!

Some people in our class made oobleck which got very messy because we used food colouring! Oobleck is a non-newtonian fluid. If you put hard pressure on oobleck it feels like a solid, but if you slowly put your hand in the bowl of oobleck it will turn into liquid.