Birches Science News!

Welcome to our Science Newsletter.

Science starts with questions, it's about curiosity! It's about how things happen using observations and experiments to answer them. It allows us to gain knowledge about how and why things happen. Take a look at this newsletter and start asking some questions of your own! For any further help, guidance or maybe to show me some of your fantastic Science, please email me at kcain@birches.staffs.sch.uk.

Stay safe, Mrs Cain :-)

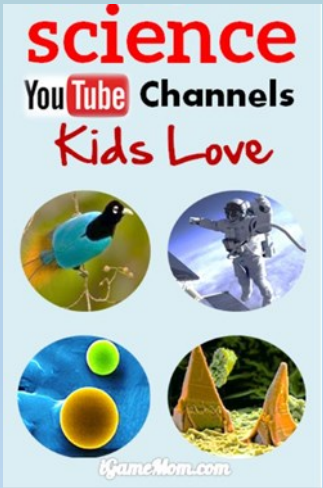
Science websites

Science fun for Everyone has lots of cool experiments to try out to make you say 'Coooooooo!' http://www.sciencefun.org/kidszone/experiments/

NASA for kids focus on all things 'space science'. They also have a free app. https://www.nasa.gov/stem

The British Science Week website has ready made packs for you to enjoy and really get those scientific thought processes going! https://www.britishscienceweek.org/plan-your-activities/activity-packs/?gclid=EAIaIQobChMI0KLnpsPx6AIViu7tCh1aoQLEEAAYASAAEgI90fD_BwE

* Mrs Cain's top site – Explorify! I love this website – great activities and amazing videos. Lots of questions for you to try and answer. There is now a 'Home Learning' section so it's worth giving this site a whirl!



SciShow: a collection of science videos of different topics: historical science figures, science news, science talk show and quizzes. This one answers lots of questions!

WhizKidScience: a channel by a kid for kids! Lots of cool experiments to try out that can be done at home.

Sick Science!: a channel from Steve Spangler with experiments that can be tried out at home.

Minute Physics – With a huge selection of science videos on topics such as space and gravity, you're sure to find something for everyone. I appreciate that the videos are quick and to the point, making them great when you're short on time, or have children with a limited attention span.

MRS CAIN'S QUESTION TO CONSIDER...

Can video games make you smarter?

Jobs in science – have you ever considered being...

- **Aerospace engineer** - design, build and maintain planes, space crafts and satellites
- **Marine Biologist** - study life in the oceans and explore how to minimise human impact
- **Architect** - design buildings such as homes, school and hospitals making sure that they are safe and fit for purpose
- **Geologist** - study the structure of the earth and it's natural resources, and assess the risk of natural disasters like volcanoes and earthquakes
- **Botanist** - study plants and help to conserve and protect them

These are just a few of the many job opportunities that lie with in Science!

Lava Lamp

You Will Need

- Water
- Vegetable Oil
- A Clear Plastic Bottle or Jar
- Food Colouring
- Effervescent Tablets

Method

1. Fill the bottle or jar a quarter full with water.
2. Top up, almost to the top with the vegetable oil
3. They should separate into two layers, water at the bottom and oil sitting on top.
4. Add about 6-8 drops of food colouring once the oil and water separate.
5. The colour will mix with the water at the bottom.
6. Pop in half an effervescent tablets and watch the bubbles form. Add more effervescent tablets bit by bit to keep the bubbles rising and falling.

The Science Bit

Firstly water and oil will not mix – this is because we say that water is a polar molecule – its structure means that is has a positive charge one end and a negative charge the other. Water molecules stick together because the positive end of one water molecule is attracted to the negative end of another. Oil molecule structure is different – it is non polar, meaning that its charge is more evenly spread out, so the oil is not attracted to water – in fact we call it hydrophobic (water fearing) so it tries to get as far away from water as possible and will not mix. The reason that oil rests on top of the water rather than underneath is because it has a different density to water.

As the effervescent tablets is added (this is made of citric acid and sodium bicarbonate) it reacts with the water and form carbon dioxide gas and sodium citrate. It is the carbon dioxide bubbles that carry the coloured water to the top.