


Science at home



**HOLIDAY
CLUB**



In these uncertain times, as a parent you have the added stress of keeping your children busy and connected with friends and family, all while social distancing and staying home to slow the spread of coronavirus. We did some crowdsourcing to get some great ideas for younger and older kids.

Searching for kid-friendly science experiments? These 5 science experiments for kids are super-easy and a lot of fun to boot, as kids are exposed to a wide variety of scientific concepts. It's a great way to spend quality time together as a family and who knows, you may end up learning a new thing or two as well!

Hands Hygiene Experiment

How Clean Are Your Hands? In order to ensure that children understand how vital it is that they practise good hand hygiene, a simple, fascinating trick has been developed using soap, pepper and water.

An experiment has been floating around the internet showing the importance of washing your hands with soap. Here's why it works.

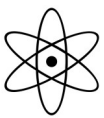
You will need:

- Plate
- Water
- Dish Soap
- Pepper



Instructions:

1. Pour water onto your plate. Wait for the water to calm, and then shake some pepper into the water.
2. Pepper will represent a virus in this experiment.
3. Take your finger and stick it into the water and pepper. Notice how the pepper sticks to your finger.
4. Now either wash your hands, or put soap onto your finger then put your finger back into the plate. Watch how the pepper moves to the side of the plate quickly.



The Science Behind It

Water molecules like to cling to each other, because of this it creates surface tension. The surface tension allows it to resist other outside forces.

Pepper is not attracted to water, which will allow the pepper to float on top of the surface of the water due to the surface tension.

When you stick your finger in it that isn't clean, the pepper sticks to your hand. When you use soap, it quickly moves away. This is because soaps are meant to break the surface tension so that it can clean an object.

This makes the water molecules carry the pepper with them as the tension is broken. This is why it's important to use soap and water to wash your hands. It will make the viruses want to move away.

Egg Experiment

Bouncy Egg Science Experiment. In this experiment, we are going to turn a regular raw egg into a bouncy egg. The result will be an egg that feel rubbery (like a bouncy ball) and does bounce.

You will need:

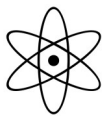
- Raw Egg
- Glass or Jar
- Vinegar

Instructions:

1. Get a raw egg and carefully place it into a glass or jar.
2. Fill the glass with white vinegar until the egg is completely submerged.
3. Leave the egg in the glass for 1-3 days. Each day check back on the egg. When the egg has started to become translucent you will know it is ready.
4. Remove the egg from the glass and rinse it under some tap water. While rinsing the egg gently rub the outside of the egg and the white film will come off leaving you will a translucent egg.
5. Examine the egg. You'll notice that is feels rubbery (like a bouncy ball). Then lift the egg 1-2 inches in the air, let go and watch it bounce.
6. When you are ready for some messy fun, lift the egg a little higher in the air and let it go.....SPLAT!



Be sure to do the bouncing on a plate or other container...just in case.



The Science Behind It ?

While the egg is submerged, the vinegar begins to dissolve the shell. If enough time passed the shell will completely dissolve leaving the thin membrane of the egg. The result is an egg that looks and feels like a bouncy ball.

Blow it up!

Exploring Gas w/Balloons, Baking Soda & Vinegar.

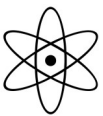
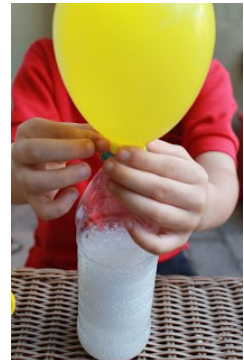
Students learn about gas and chemical reactions by discovering how to inflate a balloon using baking soda and vinegar.

You will need:

- Baking Soda
- Vinegar
- Plastic Bottle
- Balloon
- Funnel

Instructions:

1. Using the funnel pour vinegar into your bottle. You only need to fill about 1/3 of the bottle
2. Using another (dry) funnel pour baking soda into your balloon. Fill the balloon approximatively half way.
3. Cover the top of the bottle with you balloon. Make sure you don't let the baking soda spill into the bottle prematurely.
4. When ready, lift your balloon and let the baking soda fall into the vinegar.
5. Watch as the mixture fizzes, bubbles & expands your balloon!
6. Discuss how the baking soda & vinegar produce a gas which fills the balloon.



The Science Behind It ?

Baking soda and the vinegar create an ACID-BASE reaction. When combined/mixed they create a gas: carbon dioxide. Gasses need room to spread, so the carbon dioxide fills the bottle and then moves into the balloon inflating it.

Source: <http://www.momto2poshlildivas.com/2012/01/blow-it-up-exploring-gas-with-balloons.html>

DIY Puffy Paint

A few kitchen items, very little set up and clean up time, this is perfect for little scientist-artists who are always looking for new activities and wondering how they work.

You will need:

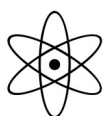
- 1 tbsp self raising Flour
- 2 drop of food colouring
- 1 tbsp Salt
- Little bit of Water

Instructions:

1. Combine the flour and salt in small bowl
2. Add a little bit of water and stir until it gets smooth, thin paste
3. Add your food colouring & mix well.
4. When happy with your masterpiece, pop it into the microwave for 30 seconds and watch your painting puff up.
5. Your artwork will be warm when you remove it from the microwave, but it will be completely set.



WARNING: Watch the paint in the microwave. Cardboard can start to burn if left in too long. Plus, it's fun to watch the paint bubble and puff while it cooks.



The Science Behind It ? The key to this activity is the **self-rising flour** because it contains baking powder and a little salt. The baking powder is important because it is an ingredient added to pastries, bread and bakery **to make them rise**. When the baking powder is mixed with water, it releases a carbon dioxide gas. Add the extra salt, which also reacts with the chemicals in the baking powder to release even more CO₂, and **you have the makings for a bubbling paint potion**. The heat plus the water in the microwave will cause the baking powder to release small amounts of CO₂, producing even bigger bubbles. It's important that you **use a thicker paper** that can not only support the weight of the puffy paint, but also hold up for a few seconds in the microwave.

Floating Ink

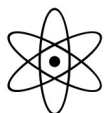
Dry Erase and Water Trick. It's a fun and easy science activity to do with kids and a great party trick that will "wow" the grown-ups too.

You will need:

- A plate, a bowl or a baking dish
- Dry erase marker
- Water

Instructions:

1. Draw a simple picture on the glass. A stick figure is a good one to start with
2. Pour water onto the plate or into the bowl slowly to lift up the drawing
3. Swirl the water around to make the picture dance and move.
4. Experiment with different types of drawings – letters, pictures, outlines, solid shapes etc to see which ones float best.



The Science Behind It ?

The marker leaves behind mixture of pigments and a type of alcohol mixed together. The alcohol dissolves and the pigments are left behind as a solid. Glass is so smooth that the solid slides right off when it gets wet!

Source: <http://www.sciencefun.org/kidszone/experiments/dry-erase/>

References

- NEXSTAR MEDIA WIRE (2020), *Science experiment shows importance of washing hands with soap*, FOX40, accessed 1 April 2020, <<https://fox40.com/news/coronavirus/science-experiment-shows-importance-of-washing-hands-with-soap/>>
- COOL SCIENCE EXPERIMENT HEADQUARTER (2020), *Bouncy Egg Science Experiment*, accessed 1 April 2020, <<http://coolscienceexperimentshq.com/bouncy-egg/>>
- MOM TO 2 POSH LIL DIVAS (2012), *Blow It Up! Exploring Gas with Balloons, Baking Soda & Vinegar*, accessed 1 April 2020, <<http://www.momto2poshlildivas.com/2012/01/blow-it-up-exploring-gas-with-balloons.html>>
- STEVE SPANGLER SCIENCE(2019), *Puffy Paint in the Microwave*, accessed 1 April 2020, <<https://www.stevespanglerscience.com/lab/experiments/puffy-paint-in-the-microwave/>>
- SCIENCE FUN (2020), *Dry Erase*, accessed 1 April 2020, <<http://www.sciencefun.org/kidszone/experiments/dry-erase/>>