

## **The Science Behind The Experiments – How Does It Happen?**

### **Joys of Attraction**

Magnets are attracted to metallic objects containing iron and so your magnet would stick to things that have iron in them. They don't stick to all metals eg: an aluminium can.

### **Musical Coat Hanger**

All sound is caused by vibrations. When the coat hanger is tapped, it starts vibrating. When vibrations travel through air, the energy spreads out so the sound reaching our ears is much less. But when vibrations travel through a solid (the string and our fingers), they don't spread out as much, and so we hear a resonant louder sound.

### **Sink and Float**

Even though the shapes have the same amount of Blu tack or plasticine in them, the boat or cup shape is more buoyant and this is what allows heavy ships made of metal to float.

### **Sink and Salt**

The egg or grape floated in the cup with added salt but not in the cup of tap water. Adding the salt changes the density of the water, and so it is more buoyant. The children can try something similar by trying to float in a chlorinated pool and in a sea rock pool.

### **Magnifying with a Glass of Water**

The water acts as a convex lens, magnifying the image and even reversing it. This is because of refraction or the bending of light as it travels through water. The image might magnify sufficiently for you to see that it is made up of dots. When a printed image or an image on a computer screen is not clear or sharp, the 'dots' (actually pixels or tiny squares of colour on a computer) are too large so you can see them individually instead of them blending together (the resolution is too low). Your grown-ups' fingerprint should have been different to yours – we all have a unique fingerprint.

### **Kissing Balloons**

it is impossible to blow the balloons apart and instead they 'kiss'. The air you blow between them is moving faster than the air around the rest of the balloon. The faster moving air has a lower pressure, so the comparatively higher air pressure around the outside of the balloons pushes them together.

### **Raw or Boiled?**

Both eggs probably look, feel and smell the same. The raw egg might make a different sound when shaken as the thick liquid inside wobbles about (especially after being shaken for some minutes). Also when you spin the raw egg, the thick liquid inside will prevent it spinning well, but the solid cooked egg spins well.

**Resources: check out these websites for some more great science activities!**

<https://childrensdiscovery.org.au/>

<https://www.fizzicseducation.com.au/free-resources/>

<https://www.questacon.edu.au/discover/questaconathome>

<https://www.scitech.org.au/explore/at-home/experiments/>

<https://education.abc.net.au/home#!/topic/494940/experiments>

<https://www.kidspot.com.au/things-to-do/collection/science-experiments>