cavendish nuclear

ACTIVITY 1- Chemical Separation

Materials

- ½ cup boiling water
- ½ cup salt - table salt will work
- Ball bearings/pebbles
- 2 heat proof containers
- Pencil/spoon/stick
- String
- Sieve/tea strainer

Hi, my name is Emma I am a STEM Ambassador and work in the Westlakes Laboratories. Today I am going to show you an exciting experiment you can do at home **"but remember to ask an adult to help you."**
You can watch how I got on at
www.cavendishnuclear.com

Method

In the lab, a lot of work revolves around separating out mixtures of materials into their original parts. Sometimes this is easy, but sometimes it's not quite so simple. We are going to look at separating a mixture of solids and liquids using 2 different techniques.

- Here we have water, salt and ball bearings. The water is very hot so make sure an adult does this part - but you can still watch!
- We are going to mix ½ a cup of boiling water with ¼ to ½ a cup of salt and our ball bearings.
- As you can see, the salt dissolves, but the ball bearings don't. Once this is all settled we're going to separate it out.
- Separating the ball bearings out is very easy - we can just use a sieve or a tea strainer - again, very carefully by an adult because it is hot, pouring it into a clean container.
- This leaves us with the question: how do we separate the salt out?
- The reason we used hot water is so that more salt can dissolve in the water at a time - we have made a supersaturated salt solution. From this, we are going to grow crystals.
- Take a pencil, or a spoon, or anything you can tie some string around, and let the string dip into the salt solution, but make sure it is not touching the bottom.
- After a few days, you should see the crystals begin to form on the string! This is the salt that we dissolved in the water. Be patient, don't touch it or poke it!