

STANDING RAINBOW INVESTIGATION



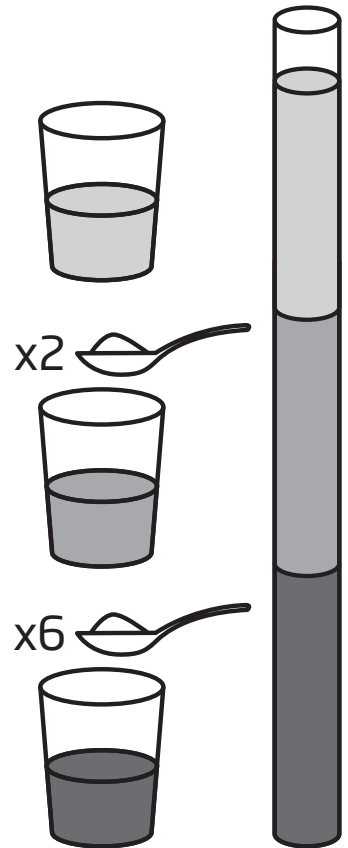
This activity is fun for all ages. If used as a science experiment, it is ideal for KS2. It encourages children to make predictions, measure weight, make observations, record results and draw conclusions.

You will need

- A tall, narrow glass or beaker. The narrower the glass, the better the experiment works. A clear straw also works but can be difficult to pour water into.
- Food colouring (3 different colours or more)
- Smaller beakers or cups (enough for each different colour of food colouring)
- A funnel (if using cups)
- Salt
- Water
- Spoon or stirrer

Method

- 1 Take your cups or smaller beakers and fill with water.
- 2 Add a few drops of food colouring to each cup/beaker, eg, one cup red, one cup blue, etc. Swill or stir the water and food colouring until mixed.
- 3 Add a large amount of salt to one of the cups, a medium amount to the second cup and leave one cup unsalted. Stir until the salt is dissolved. The more salt you add to the first cup, the better the experiment will work. You will need to add less than half the amount to the medium cup. For example, six tablespoons to the first cup, two tablespoons to the second. The amount of salt depends on the size of the beakers or cups you are using though so you may need to play around with the salt content to get it right before you try the experiment with children.
- 4 Explain that you are going to add the coloured water one at a time to the tallest beaker/glass/straw. Ask the children to predict what they think will happen.
- 5 Add the colour with the most salt first, medium salt second and no salt last. You may want to pour the water in using a funnel to avoid spillages. Try to pour the second and third colours in very carefully and slowly to avoid the colours mixing. If you pour too quickly, the colours can end up mixing.
- 6 Observe what happens and ask the children to explain and/or record what they see.
- 7 The colour with the most salt should sit on the bottom and the other two colours should sit on top.



The science

The salt added to the water makes the water **dense** (or heavier by volume). The more salt that is added, the denser the water is. You should see the water with the most added salt sitting on the bottom.

Extension

You could repeat the experiment again with different or more colours and different amounts of salt.

Before you tidy away, you can also talk about what you can do with the water after the experiment. Rather than tipping it down the drain and wasting it, can your children think of other ways to use it? You could discuss why it wouldn't be safe to drink or why it wouldn't be best used for plant watering.

You could use the coloured water in another science experiment, eg, observing the process of the water cycle by leaving the water on a sunny windowsill and noting what happens to the water and to the salt when the water evaporates.

You can find out more about water conservation and its importance on our website www.wessexwater.co.uk

You can also have a look at our education page to find more fun resources and investigations

www.wessexwater.co.uk/community/education

