



## Dyes - How do you get purple wool?

### Fact

- When leaves or berries are heated tiny coloured dye particles come out of the plant and spread through the water. When the wool is added dye particles are attracted to the wool
- The dye chemicals and the wool chemicals react together and the dye sticks to the wool.
- Food colouring dyes work the same way by sticking to your hair fibres and food colouring dyes stick to the food particles.
- Some natural plant dyes need a fixing agent like salt to make the dye last longer in the wool or fabric.

### Do you know

- People have been using dyes for over 4 and a half thousand years
- The earliest known dyes were used in China
- People in Gaul (it used to be a country in Europe) dyed themselves blue using the leaves of a plant called woad.
- 1600 years ago people used a type of sea snail to make purple dye and it was so popular that the cloth was worth its weight in gold.

### Experiments you can do

Dye it

#### What you need:

The help of an adult

A fruit or vegetable with lots of colour (onion skins, red cabbage, beetroot, berries, or even a tea bag or two)

Some plain or light coloured wool or material.

A pot big enough to fit the wool or material in

Water

#### What you do:

Get your adult assistant to chop up the fruit or vegetable of your choice then put it in the pot with water. Gently boil the chopped food for about 10 minutes then let it cool.

Remove the food and put the wool or material into the pot and bring the water to the boil again. Let it gently boil again for 10 minutes then let it cool completely before you take the wool or material out of the water. Leave the wool or material to dry.

Have the dye particles come out from the food and attached themselves to the wool or material? What colour is the wool or material now?

### **Other Investigations**

How long does the dye last?

Once you've finished examining your dyed wool or material wash cut in half and experiment to see how much dye comes out when you wash it. Wash one piece in cold water and the other in warm water and see if any of the dye comes out.

What about if you add detergent or clothes washing liquid or powder (you won't need much) Does that effect the dye at all?

### **Jokes**

How many sheep are born in a year?

None, because sheep don't get born, lambs do

From Jeremy Lee

Patient: Doctor, Doctor, I swallowed a sheep!

Doctor: How do you feel?

Patient: Very baaaa d!"

From Kate