



society of dyers
and colourists

Society of Dyers and Colourists
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Charity Registration No 212331



Natural dye activities



A Chartered Society
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Natural dye activities

These activities can be carried out by students using the minimum of science equipment.

At the Colour Experience we carry out this workshop on a regular basis with visiting students. We use materials that they will probably have come across before and they may even have some of them at home. This means that the materials are readily available, helps the students feel comfortable in handling the materials and addresses a number of safety issues.

Suitable dyestuffs include:-

Turmeric, saffron, henna, onion skins, bilberries, tea and coffee.

For the more adventurous Indigo is available and can be used to demonstrate a more complicated technique.

One useful item is the SDC multifibre strip. This is a strip of fabric which is made out of six different fibres, four of which are synthetic, the other two natural. This enables students to compare how well the dye works on different fibres. As it is one piece of fabric it means that all fibres are treated identically and therefore ensures fair testing. The material is used in industry and educational discounts are available.

Powdered dyestuff - e.g. henna, turmeric

This is the easiest type to use. Simply sprinkle a small quantity into the beaker - just enough to cover the bottom - then pour on about 150ml of boiling, or near boiling, water. Stir until as much as possible is dissolved.

After leaving it to settle for a while the solution needs to be strained or filtered.

Henna works better if it is mixed into a paste with a little water before adding the rest of the water.

Onion skins, red cabbage

The cabbage needs to be chopped, the onion skins will do as they are. Place the dyestuff in water, bring it to the boil and simmer for around ten minutes. The liquid can then be drained off and used.

Tea, coffee, saffron

Very straightforward. You can use a teabag (open or sealed) in about 150ml of boiling water. Saffron only needs a few strands or a small pinch in 150ml of boiling water. Leave them to brew for a few minutes then strain off the liquid.

Bilberries, blackcurrants

Use fresh if possible, otherwise those in a jar or tin work fine. Pour out about 50ml of juice and berries and crush them. Pour on about 100ml of boiling water and stir and crush again. Leave for a few minutes then strain off the liquid.

Indigo

This is quite complicated. In addition to the indigo powder you will also need washing soda (sometimes just called soda crystals) and some sachets of Dylon Colour Run Remover. Both of these are available from supermarkets.

Make up a solution of washing soda - cover the bottom of a beaker and add 150ml of hot, not boiling, water. Stir until dissolved. Cover the bottom of a clean beaker with indigo powder and use a small amount of the washing soda solution to make a paste. If the powder is difficult to mix you can add a drop of washing up liquid, which should make it easier. When you are happy with the paste add the rest of the washing soda solution and stir. Finally sprinkle some of the Colour Run Remover into your solution - just enough to cover the surface - and stir. Your dye is now ready to use. The fabric will be green when you take it out of the dye, and it changes to blue as you rinse it and leave it in the air. Magic.

Dyeing or staining?

What these experiments are actually doing is staining the fibres rather than dyeing them. The colour is largely on the surface of the fibre, and there will be little or no actual bonding of the colour to the fibre. In order for dyeing to take place we need to increase the temperature of the dye and increase the length of time that the fibres are in the dye for. This will drive the dye into the fibres and enable the dye to react and bond with the fibre.

Extension activities

There are a number of variables in these experiments. Students can vary the amount of dyestuff or liquid - making the solution more, or less, concentrated. They can vary the temperature of the water or the time that the fibre is left in the solution. This provides a useful example of fair testing and using variables in experiments. Varying one thing at once is useful, varying more than one is confusing.

Pupils can compare natural and synthetic dyes. Do particular types of dyes work well on particular fabrics?

How well do the colours stand up to washing, or sunlight? (Colour fastness)

How can the dyes be made more fast in the fibre? (using a mordant to fix the dye - common salt is always worth a try)

If you have access to other plant materials, here are some further suggestions for you to try and the colours they produce:-

Bracken	lime green	Lichen	brown-purple
Elderberries	violet	Nettle	yellow-green
Goldenrod	lemon-gold	Privet leaves	yellow
Heather	dull yellow		

Extract the dyes as for onion skins or red cabbage. Some will need to be boiled for longer. Take care when collecting samples that you are sure about what you are collecting - many plants can be irritating to your skin or harmful to your health. Care should also be taken not to collect from parks and countryside as certain plants are protected (e.g. lichen)

Resources

Educational grade multifibre strip is available from the SDC:-

SDC Colour Experience
PO Box 244
Perkin House
82 Grattan Road
Bradford
BD1 2JB

Tel: 01274 725138

www.sdc.org

Indigo powder and a range of other natural dyestuffs:-

Fibrecrefts
George Weil & Son
Old Portsmouth Road
Peasmarsh
Guildford
Surrey
GU3 1LZ

Tel: 01483 565800

www.fibrecrefts.com

If you have any queries please contact one of the education team at the SDC Colour Experience at the above address.