# EcoArt with science

This EcoArt activity unites chemistry and art in a sustainable way. Together with your students, you can create one-of-a-kind pieces of fabric by dyeing them with natural dyes, such as red cabbage and turmeric. These two substances can be used as acid-base indicators, and by changing the pH values, we can create different colours.

Experiment with various methods and have fun exploring the endless possibilities of natural dyeing!

## Required materials

* natural fabrics (cotton or linen)
* a red cabbage
* turmeric powder
* vinegar
* salt
* baking soda
* a pot
* wooden spoons or spatulas
* a filter
* gloves
* a cutting board
* a knife
* measuring jugs
* glass containers (for storing the dyes)
* water
* brushes and sponges (for painting)
* a cork or a potato (for stamps)
* a stove
* a cover to protect the work surface

## The procedure

### 1. Wash the fabrics

### 2. Prepare the natural dyes

Red cabbage dye:

* Chop half of a red cabbage into small pieces.
* Place the pieces in a large pot and add enough water to cover them.
* Boil for about 30 minutes until the water takes an intense purple colour.
* Strain the mixture.
* Divide the mixture into three parts. Save one part, which will be the purple dye.
* To the second part, add baking soda until the mixture acquires the desired green colour.
* To the third part, add vinegar until it acquires a desired reddish-pink colour.

A knife and a cutting board

Description automatically generated A bowl of red cabbage

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Turmeric dye:

* Put one tablespoon of turmeric powder and four cups of water into a pot.
* Boil the mixture for about 15 minutes.
* Strain the mixture to remove any turmeric powder and save the colouring liquid.
* Divide the mixture into two parts. Save one part, which will be the yellow dye.
* Add baking soda to the second part until it acquires a desired orange-reddish colour.

### 3. Dye the fabric

* Place the prepared fabric in the pot with the desired dye.
* Let the fabric rest in the dye for at least two hours.
* Remove the fabric from the dye and rinse it in cold water and salt until the water runs clear.
* Dry the fabric in the shade to prevent fading.

**A group of colorful cloths

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*Sample pieces of fabric dyed with red cabbage and turmeric*

### 4. Ideas for artistic dyeing

These natural dyes can be used to paint fabrics using a variety of techniques. Use paint brushes or sponges to create various textures. Make stencils or stamps from a cork or a piece of a potato.