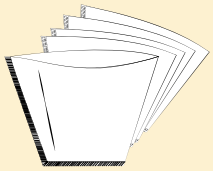
The cabmeleon

Lemon juice or vinegar stings the tongue ... They are said to be « **acidic** ». On the contrary, other natural components are « **basic** ». Let's find out if a component is « **acidic or basic** » using red cabbage ! Surprising isn't it ?

What material do you need ?

Red cabbage

A knife



Coffee filters

A paintbrush

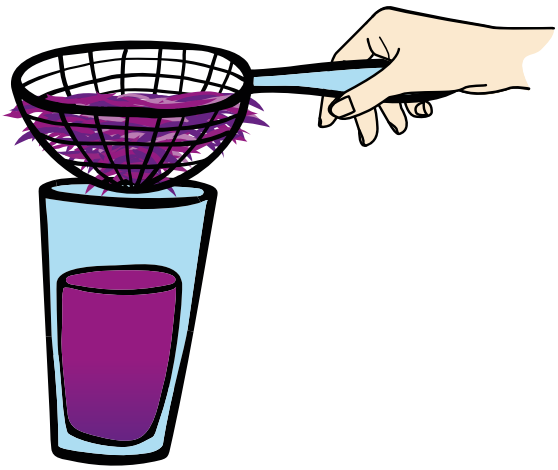
Ready ? Let's experiment !

1

With the help of an adult, cut the red cabbage into small pieces and put it in a pot with water. Boil it.

2

After a few minutes collect the cooking juice by filtering the preparation. Let it cool.
Look ! The cooking juice is pink !



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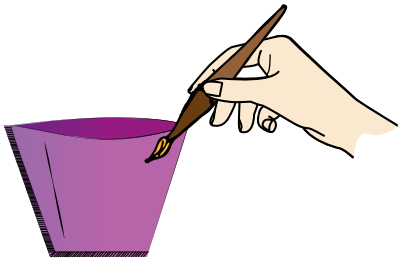
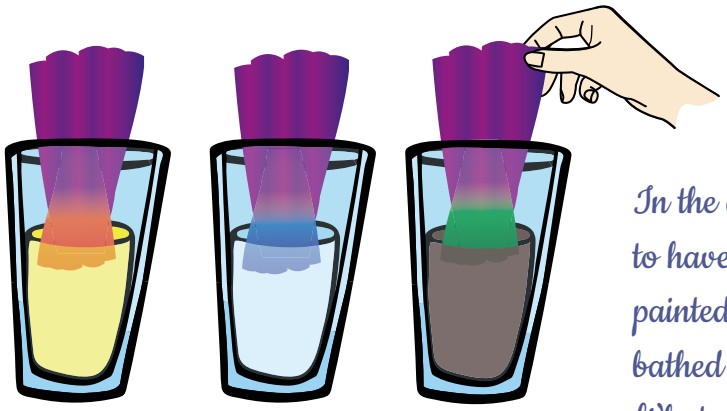


Now paint both sides of your coffee filters with the red cabbage juice using your paintbrush and let them dry.

The cabmeleon (end)

4

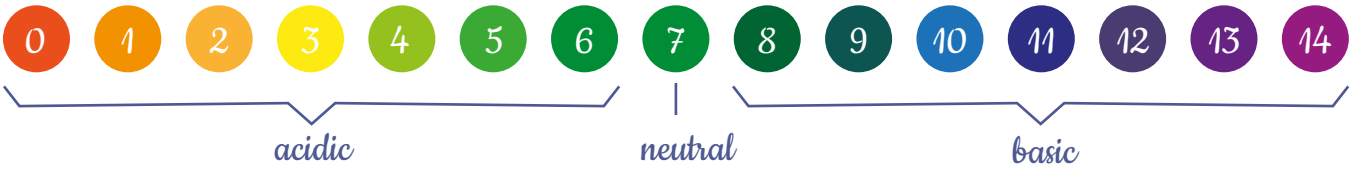


lemon juice | water + baking soda | coffee

In the glasses you prepared (you don't have to have them all to experiment), insert your painted coffee filters so that the bottom is bathed in the liquid.
What do you observe ?

In order to be able to classify components from the most acidic to the most basic, chemists have created a scale called the « pH scale » going from 0 to 14. The closer the pH value is to 0, the more acidic the component is and the closer to 14 the pH is, the more basic the component is.

You can measure the pH of the products you used by comparing them with the color scale.



Why does it work ?

Red cabbage contains a component called **anthocyanin**. It is this component who is responsible for its velvet color. It has the ability to change color depending on the presence of an **acid**, like vinegar, or a **base**, like baking soda.
That's why you can observe color changes when you put the coffee filters into the different liquids.

Nature also changes color...

Nature is the source of this with the acidity of the soil. For example, hydrangeas also contain anthocyanins exactly like the red cabbage we used.
If the soil is acidic, hydrangeas' flowers will be blue. If the soil becomes basic, the flowers will be pink.
So it is actually possible to change the color of the hydrangeas' flowers by changing the acidity of the soil.
Amazing !