



Cambridge University

Botanic Garden

FAMILY ACTIVITIES AT HOME

Paint like a petal

Ages
7+

Flowers are nature's artists. Blues, purples, yellows and reds - flowers come in an amazing rainbow of colours and shades.

In this activity we will be using real pigments from plants and special flower tricks to paint like a petal.

We will be making petal paint which you can then paint onto paper or kitchen roll to make paper flowers.



To paint on paper you need:

- Blueberries (frozen work fine)
- Water
- Lemon juice or vinegar
- Bicarbonate of soda
- Paper
- Paintbrushes
- Paint palette or cups

To make flowers you also need:

- Kitchen roll
- Baking trays
- Masking tape
- Scissors
- Lolly sticks
- Pens



HOW DO FLOWERS GET THEIR COLOURS?

Flowers usually get their colour from special chemicals inside their petals called pigments.

Flower colour isn't always straightforward though. Sometimes the colour of petals changes even though the pigment stays the same.

Morning Glory is a beautiful flower that changes colour as it grows. When the flowers are buds they are purplish red but when they are open they are bright blue. They contain a pigment called anthocyanin.



Scientists discovered that this change in colour was caused by the petal changing its pH. The flowers were purple at a pH of 6.6 but as the pH increased to 7.7 they became blue.

In this activity we are going to be making colours just like this flower.

The pigment in this flower is called anthocyanin. We can get this pigment from blueberries and use it to make paint. To change the colour of our paint, just like the flower, we can change the pH by adding acids and bases.

ACIDS, BASES & pH

Have you ever noticed the tangy taste of lemon or orange juice? Well, that delicious tang comes from those juices being acid or acidic.

Scientists use a special scale called the pH scale for measuring how acidic things are. It goes from 0 to 14. Acidic things have a low number. Lemon juice has a pH of 2.

At the other end of the scale are bases or basic things. Things in your house that are bases include soap and bicarbonate of soda. Bicarbonate of soda has a pH of 9.

HOW TO MAKE PETAL PAINT

Anthocyanin is a colourful pigment found in flowers. It is also found in fruit and vegetables.

In this activity we are going to make paint using blueberries but you could try using red cabbage, blackberries or even flowers themselves.

Warning!
Might get messy.

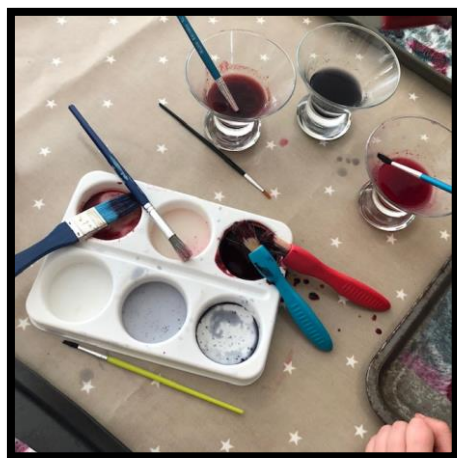


To extract pigment from blueberries mash them up in a little water. Use as small amount of water as possible – you don't want to dilute your pigments.

Heating can help extract the pigments too. Ask an adult if they can help you use a microwave or stove.

Get some acids and bases ready too. These are the magic ingredients that will change the colour of your mixture.

To make an acid, collect the juice from a lemon or find some vinegar. Make a basic liquid by dissolving a couple of spoons of bicarbonate of soda in a small amount of water.



Once you have made your blueberry mixture, acids and bases it's time to start experimenting! Use the blueberry mixture as paint, mix with acids and bases or try painting the acids and bases over the top of your artwork.

Try using different papers too. At home we found that kitchen roll gave us very different colours to normal A4 white paper.

HOW TO MAKE PAPER FLOWERS



1
Paint on kitchen roll in a tray. One sheet will make one flower.



2
Lay outside in the sun to dry.



3
Cut into 2 or 3 strips lengthways.



4
Pull sheets apart to make extra strips if you can.



5
Fold sheets in half lengthways.



6
Line up strip on lolly stick. Folded edge at top.



7
Wrap strip around stick. Secure at base with tape. Repeat with all of your strips.



8
Pinch in at the base and secure with more tape. Colour tape if you want.



9
Repeat to make a beautiful bouquet!