

# Turmeric printing

Outdoor, Age 6 – 16, Cost per student in £– 0.20

Curriculum areas - Biology, Art, Food Tech, Photography, Chemistry

Turmeric photography is an 'anthotype'. A plant is placed on coated paper or card, under glass. Sunlight then bleaches the exposed areas leaving an image of the objects placed on the paper. The paper can be prepared in a few minutes and exposures, in midsummer, can be less than 10 minutes (although midwinter sun can be 6 hours!). It is an excellent project for the start and end of a lesson.

The chemistry used is *fairly* harmless (see the information below) and the whole process, from mixing the solution, coating the paper to 'toning' the final image, can be done by the students.

## Materials:

- Cheap, glossy surfaced, inkjet photo paper (NOT light sensitive photographic paper)
- Turmeric powder
- Isopropyl alcohol (or runny hand sanitiser!)
- Rubber gloves (to avoid staining).
- A table cloth (to avoid staining!).
- A teaspoon
- A 'J cloth' for straining out the liquid
- 2 x jam jars (one for the turmeric liquid and one for the toner)
- 2 x paintbrushes (One with a yellow marker for coating the turmeric liquid onto the paper and one with a red marker for applying the toner)
- A clip frame (a 10 x 8 frame will accommodate three images)
- Some materials (flowers, leaves, acetate template, cut out card butterflies etc)
- Sodium Sesquicarbonate powder. (optional but so cheap £5 will last a lifetime)



Video on how to do this process from start to finish [here](#) however, one addition to the video is to 'paint' the toner on rather than soak the image in a tray. This allows the photo to dry faster (and allows the next swarm of enthusiastic dudes to have their go!)

## Potential pitfalls

### Inkjet photo paper

Every house in the country has loads of this stuff, unused due to the cost of printing ink. Weirdly some of the better quality papers don't work! This is down to the absorbency of

the paper as well as (possibly) the acidity of its surface. As with all lessons, **test the papers you have beforehand**. Luckily the cheaper ink jet glossy papers seem to work best.

### **Initials**

Get the students to write their initials on the back of the photo paper before they coat it.

### **Staining**

Turmeric stains! Although not harmful, it's probably best not to get it everywhere and to hold onto the jar of turmeric mixture when the paintbrush is being used to coat the paper.

### **Tilting the frame to get the sun (for faster exposure)**

Works fine with glass clip frames but the safer plastic frames are more bendy which can result in the leaves etc falling off the paper. Best to keep them flat.

## **Health and Safety information.**

### **Isopropyl alcohol**

I use cleaning alcohol, a litre of which costs £5 online and is sufficient for many classes. Be aware this is flammable. Hand sanitiser works as well but can be a bit 'gluey'.

### **A clip frame**

Plastic frames are safer to use with smaller children however they aren't great at keeping the objects pressed firmly onto the paper. It is also best to reassemble the frames yourself. The intricacy of reassembling clip frames is beyond most students!

### **Sodium Sesquicarbonate powder**

This can be bought under the trade name of 'Borax Substitute'. This is NOT Borax but a cleaning powder of the same Alkaline ph. When mixed up it is very diluted, but should be handled with appropriate care. It doesn't 'go off' so mix up a waterproof jar of it with a lid.

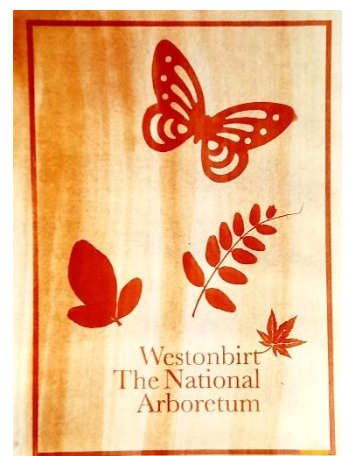
### **Separate Paintbrushes**

Have different brushes, some with yellow tape on for painting on the turmeric mixture and some with red tape on for painting on the 'toner'. Don't get these mixed up!!!!

## **Advanced**

### **Templates**

Acetate templates can be used either on their own or along with plants etc. This is useful whether to make the final image specific to a project (or to appease organisations who are employing you!) Make sure you use the correct 'photocopiable' sheets so the photocopier doesn't gunge up with melted the plastic, (if it does,,,walk away slowly!). When there's a strong sun it is possible to use thin photocopies with lettering etc on but the exposure times are longer.



### **UV beds**

These work well but are beyond the budget for many. They also won't take 30 students work at the same time leading to the carnage arising from 'waiting in turn'. If doing this project in the winter leave the frames out (under cover) for several days until the next lesson.