

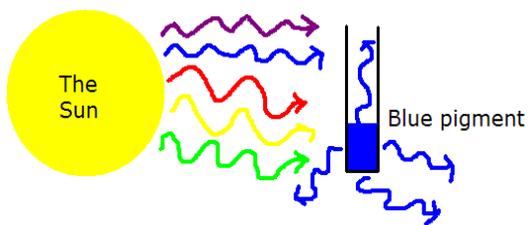
# Make Your Own Pigments

Creating  
A  
Colourful  
Life

## Pigments



- A pigment is a small particle that does not dissolve in water.
- Pigments can be natural or man-made. Natural pigments are obtained from rocks and minerals.
- The rainbow light from the sun gets selectively absorbed by the pigment. The colour that is reflected by the pigment is the colour we see.
- A solvent (liquid part) and a binder (sticky part) are added to the pigment to make paint.



### You Will Need:

- 3 burettes filled with iron chloride, copper sulfate and cobalt chloride respectively.
- 3 beakers.
- 3 volumetric flasks containing potassium ferrocyanide, sodium carbonate and disodium hydrogen phosphate respectively.
- 3 filter papers, 3 funnels and 3 conical flasks
- 3 x watch glasses

### **Prussian Blue**

1. Transfer approximately 20 ml of potassium ferrocyanide to a beaker from the volumetric flask.
2. Ask a demonstrator to show you how to use a burette. Add approximately 20 ml of iron chloride to the beaker containing the potassium ferrocyanide from the burette. Observe what happens.
3. Flute a piece of filter paper so that it fits into the funnel. Put the funnel into the conical flask.
4. Pour the solution into the funnel slowly.
5. If there is any pigment left at the bottom of the flask, use a little water and swirl around the flask. Filter this solution too.
6. When the pigment is left on the filter paper leave it on the side to dry.

### **Malachite Green**

Repeat the experiment as described for Prussian Blue but use sodium carbonate in the beaker and copper sulfate in the burette.

### **Cobalt Violet**

Repeat the experiment as described for Prussian Blue but use disodium hydrogen phosphate in the beaker and cobalt chloride in the burette.

### **Make Your Paint**

Choose one of the pre-dried pigments. In a plastic cup add a small amount of PVA glue to the pigment. Use water to thin your paint and use it to paint the mural.

## Questions

1. In the pigments, it is usually the type of metal that makes them colourful. Can you name the metals present in the three pigments you have made?
2. What did you observe when mixing the two solutions to make Malachite green?
3. What was this effect caused by?