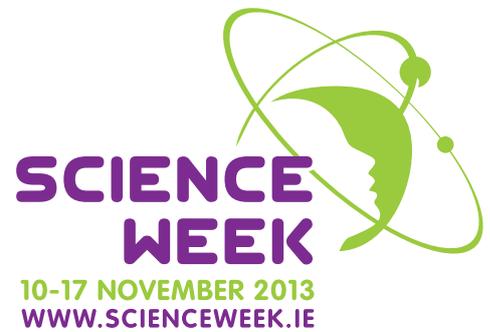


DOES COLOUR AFFECT HOW HEAT IS ABSORBED?



Why is it more comfortable to wear light-coloured clothes on a hot summer day?

Why is does a dark-coloured car seem much hotter on a day in summer? How much difference does colour make?

LET'S CARRY OUT AN INVESTIGATION TO FIND OUT!

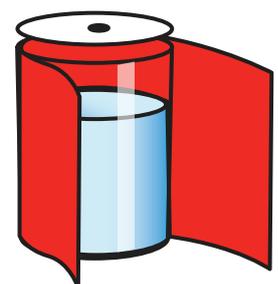
For this investigation, you will need

1. 6-8 identical beakers, with aeroboard covers or lids
2. 6-8 sheets of coloured paper (different colours). Make sure you have a sheet of black and a sheet of white and any other available colours
3. scissors
4. sticky tape
5. water
6. thermometers
7. plasticine
8. 200 W filament bulb
9. timer or clock

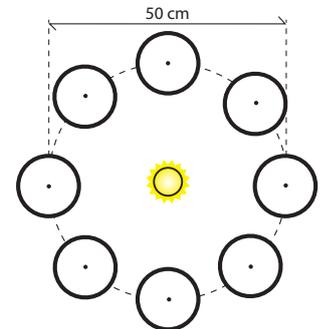
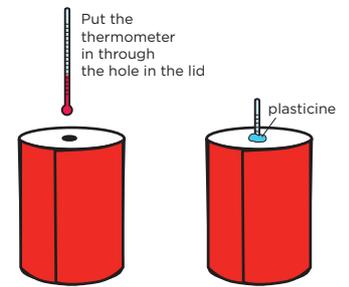
PROCEDURE

1. Put a hole slightly larger than the diameter of your thermometer in the lids of the beakers.
2. Tightly wrap each beaker with a different colour of paper.
3. Carefully fill each beaker with the same volume of water, making sure not to wet the paper.
4. You need to have the same starting temperature for each beaker. The easiest way to do this is to have all of the beakers at room temperature. Fill them with water that is about the same temperature the day before you want to start your experiment. Cover the beakers and leave them to come to room temperature overnight.

Tightly wrap each beaker with a different colour of paper



5. Put the thermometer in through the hole in the lid so that its bulb is completely immersed in the water. Use plasticine to seal the hole and hold the thermometer in place. Keep the thermometer at the same height with respect to the lid for all the beakers.
6. Get a large sheet of white paper. Draw a circle of radius 0.25 m on it. Place the jars at equal spaces on the circumference of the circle.
7. Clamp the bulb and place it at the centre of the circle.
8. Note the starting temperature for each beaker.
9. Switch on the bulb.
10. Leave the beakers around the bulb for 20 minutes. Record the temperature of each beaker when that time has elapsed.
11. Complete the table



Colour of paper	Starting Temperature	Finishing Temperature	Rise in Temperature

Make a bar graph to show your results, ordering the colors from lowest to highest rise in temperature.



1. Write down the colours of the spectrum of white light in the correct order

Red,

2. How does the arrangement of the colors in your bar graph compare to the spectrum of white light?

3. Why were the beakers placed on the circumference of the circle?

4. Could you use a CFL bulb for this investigation?

Explain your answer.

5. How could you carry out this investigation if you had only one thermometer?

6. From your investigation, which is the best colour to wear in warm weather?

7. From your investigation, which is the best colour to wear in cold weather?

