Your teacher may watch to see if you can:
- make careful measurements.

Aim

To compare the amount of light reflected by different materials.

Introduction

You can use light sensors to measure the amount of light reflected by different materials.

Method

Apparatus

- datalogging equipment
- 2 clamps and stands
- light source (ray box or torch)
- light sensor
- selection of materials

⚠ Take care if moving about in a darkened room.

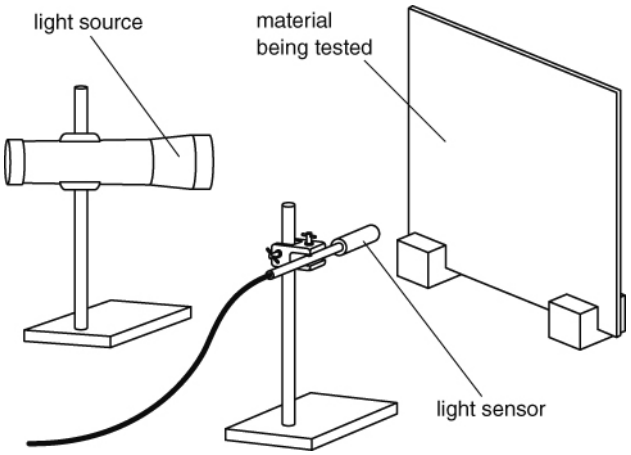
Do not look directly at the bulb or touch it while it is hot.

A The room will need to be dark for the measurements to be reasonably accurate.

B Set up the apparatus as shown in the diagram using one of the materials to be tested.

C Place the light sensor so that it gives the highest possible reading with the light source switched off. Record this reading and keep the light sensor in this place for the rest of the investigation.

D Switch on the light source and record the reading on the light sensor. The difference between this reading and the one you took in step C is the amount of light being reflected by the material.



E Repeat steps C and D with your other materials.

Recording your results

1 Draw a table like the one below for your results.

Material	Reading with light off	Reading with light on	Amount of light reflected

2 Draw a bar chart to show your results. Show the materials in the order of the amount of light they reflected. Start with the one that reflected least light.

Considering your results/conclusions

3 Could you have predicted the order of your results just by looking at the materials? Explain how.

Evaluation

4 **a** How fair do you think your comparisons were? Were there any factors you could not keep the same each time?

b How could you improve the accuracy of your results?

I can…
- carry out an investigation safely
- draw conclusions
- evaluate an investigation and suggest improvements.