

Transparent or Opaque? Name:

Date:

Which materials are the most transparent?

Aim: See what type of materials allow the most light to pass through them.

Equipment:

Cardboard box (shoeboxes are ideal)

Paper or cardboard - black, white

Torch/flashlight

Modelling clay

Binder clips

A selection of objects made from various materials such as plastic, wood, paper, cardboard, glass, metal and cloth.



Method:

- 1) Cut a hole in one end of the cardboard box just big enough to hold the torch without letting in any daylight. You can use modelling clay to hold it in place and to fill the gaps if necessary.
- 2) Fix the white paper or cardboard to the inside of the other end of the box with modelling clay (opposite the torch position.)
- 4) Place the box in a darkened room and turn on the torch/flashlight lamp. Place an item between the light source and the white paper screen. (Use the binder clips to attach items like paper, cloth lunch wrap, foil etc.) Make sure the lamp light is shining directly on the item. Is there a shadow? How dark is it?
- 5) Try swapping the white paper/card for a black screen. Does any light shine through the object? How bright is it? Does the light shine through the object? Record your results. Repeat for other items.
- 6) Create a table to show the transparency of various materials. Rank the items from most transparent to most opaque. Write a statement about what you found out.