

Practical Experiment

- Light Waves: Reflection and Refraction.

Background information.

As we know, light travels from one place to another as waves. We can use equipment such as a light box kit to investigate how light waves interact when reflecting and refracting. Light box kits contain concave (curved inwards) objects, convex (curved outwards) objects, prisms and planes that can be used to demonstrate how light is reflected or refracted.

Aim: The aim of the experiment is to visibly see light waves travelling using reflection and refraction while utilising the lightbox kits and different surfaces.

Hypothesis: It is hypothesized that the experiment will demonstrate reflection and refraction with the light waves of energy by using the light box kits to create a beam of light that can reflect or refract depending on the different surfaces used, such as concave, convex, plane, lens or prisms.

Materials:

- Light box kit
- Convex and concave lenses - Prisms and planes
- Battery pack
- White A4 paper

Method:

Set up of light box kit.

Connect your lightbox to your battery pack as shown by your teacher.

Place the black plastic light distributor down with the single opening facing downwards.

Place a sheet of white paper down in front of the light box.

Choose a coloured square of your choice

Close the sides of the box making sure no light escapes.

Experiment 1.

Place a concave mirror in front of the light box and fill in the table below.

Flip Over the concave mirror so it faces backwards and fill in the table below.

Place down the plane mirror so that it faces the light box and fill in the table below.

Experiment 2.

Place the concave lens in front of the light box (on the horizontal) and fill in table below.

Place the convex lens in front of the light box (on the horizontal) and fill in the table below.

Place down the rectangular plane in front of the light box (on the diagonal) and fill in the table below.

Place the prism in front of the light box and fill in the table below.

Object	Observation	Drawing