

Light & Optics

Assembly Instructions

The Light & Optics kit is a unique tool that enables students to see how light travels through the air and other media. By using laser light, students can clearly trace the path that light follows as it travels through a prism. Students can observe the effects of lenses, mirrors and polarizing filters; prove the laws of refraction and reflection; and perform color mixing.

Parts Checklist

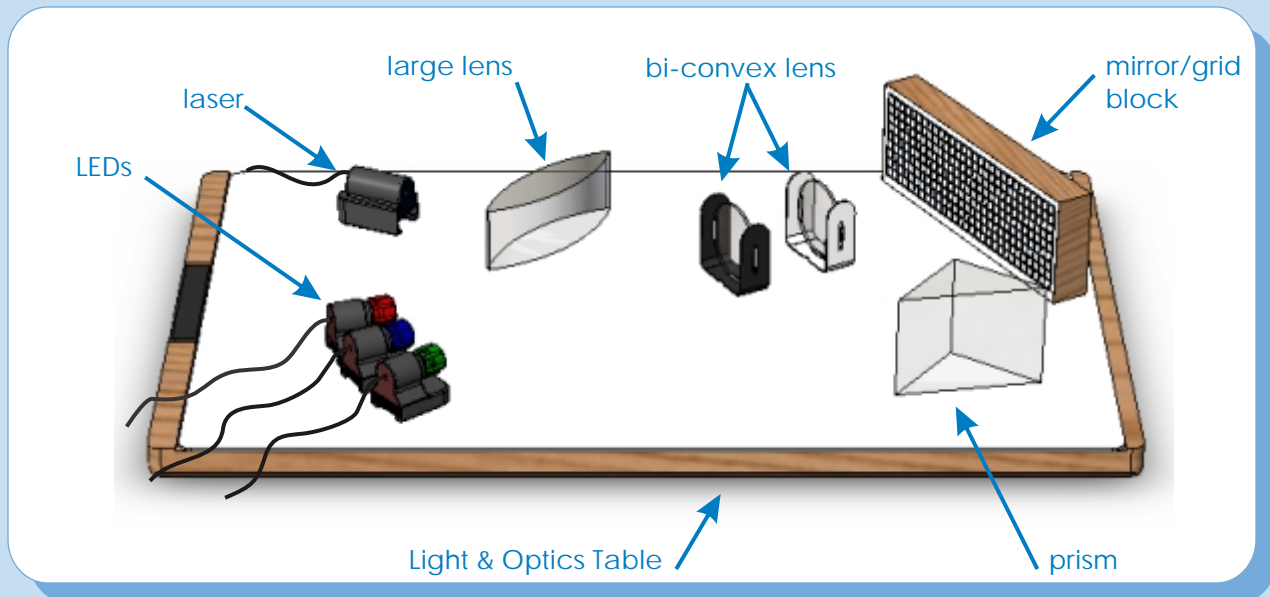
The following items are provided with Light & Optics:

- Light & Optics Table with phospho-luminescent square (on back) and built-in circuitry box
- laser module
- 3 bright white LED modules with colored filters (filters: red, green, blue, clear)
- 9-volt UL approved power transformer
- triangular prism, 45°- 45°- 90°
- large bi-convex lens (non-spherical)
- plane mirror/grid block
- diffraction grating glasses (5 pairs)
- sample graph paper (11" x 17")
- magnetic strips for securing graph paper (2)
- polarizing filters (2)
- bi-convex sphere lens, long focal length
- bi-convex sphere lens, short focal length

Setting up the Table

Understanding the table

The Light & Optics Table is a platform for arranging optic elements and graphing the path of light as it is affected by these elements. The table consists of a solid wood base with a metallic inlay layer for positioning the elements, most of which have magnetic bases. The table has a built-in circuitry box for attaching the lights and power transformer.



Setting up the graph paper

Place a single sheet of graph paper on the table so that it lines up with the white inlay sheet. Secure the graph paper by placing a magnetic strip along each of the long edges of the paper.

Assembly instructions continue on page 2.

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Setting up the Light Modules

Understanding the built-in circuitry box

The circuitry box is located on the left edge of the table. The box has five (5) sockets. The right-most socket is for attaching the 9-volt power transformer. You must connect the circular plug of the power transformer to this socket and the two-pronged transformer plug to a standard 120-volt electric wall outlet. This will provide power for all of your light modules. The four circular sockets are for connecting any of the light modules (laser and LED's).

Connecting the light modules

Each of the light modules has a wire with a plug at its end. To attach a light module, insert the plug by pushing firmly and completely into any of the light sockets. With the power transformer attached to the power socket and a wall outlet, the light will turn on as you plug it in. Up to four light modules may be attached at a time.

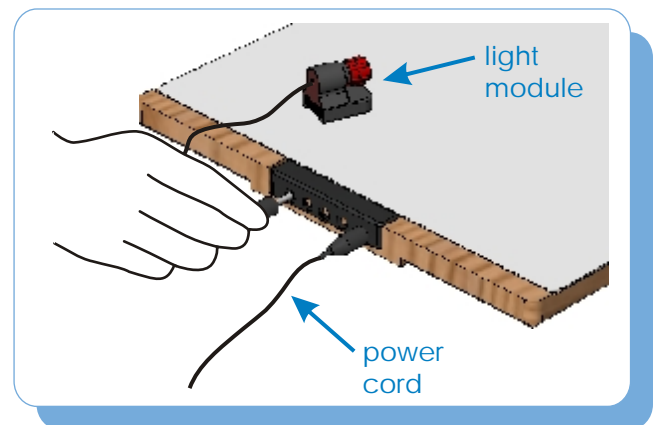
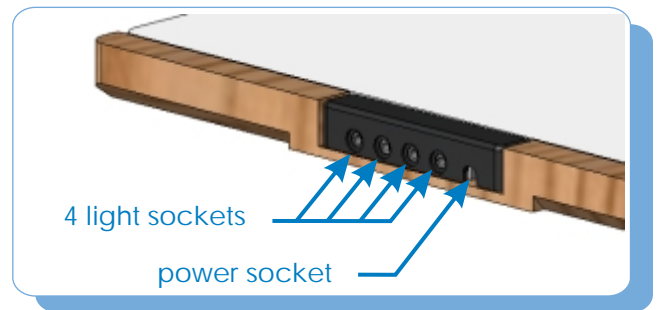
Note: If the light does not function properly check to see if its plug is inserted completely into the socket.

Removing plugs

When removing plugs from the circuitry box, pull from the plug itself, NOT the cord.

WARNING:

Use only the 9V, 500 mA power transformer supplied with this kit.



For activities, consult your *Teacher's Guide*. We also offer multi-level activities in the *Light & Optics Curriculum Resource Guide*, sold separately.

For technical assistance, please call 866.588.6951.