STEAM POWERED GIRLS™ OPTICAL MOOD LAMP

⚠ WARNING:
CHOKING HAZARD - Small parts
Not for Children under 3 years.

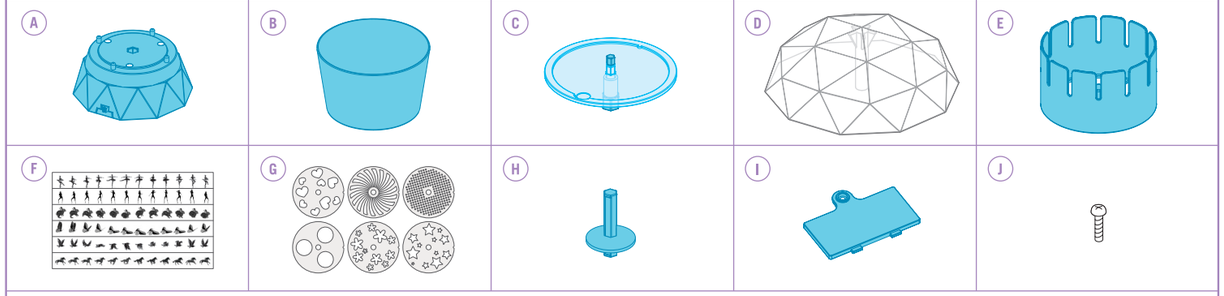
A. SAFETY MESSAGES

1. Please read these instructions carefully before using the product. 2. Adult supervision and assistance are recommended at all times. 3. This kit is intended for children over 8 years of age. 4. This kit and the finished product contain small parts that present a choking hazard. Keep away from children under 3 years of age. 5. Only install batteries after you have assembled the product. Adult supervision is required.

B. USE OF BATTERIES

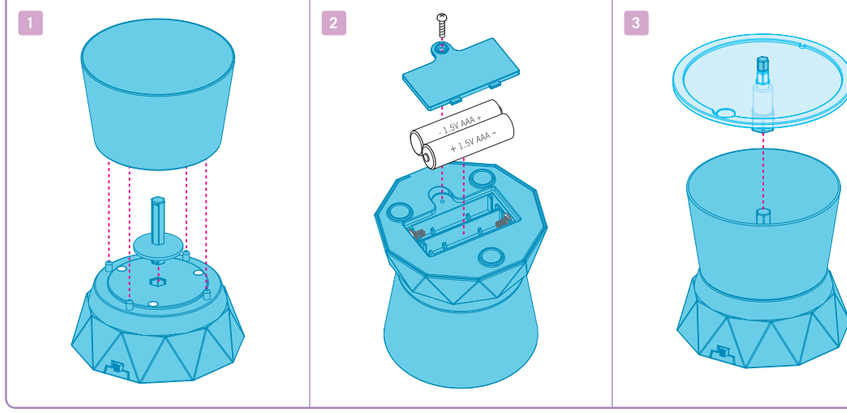
1. Requires two 1.5V AAA batteries (not included). 2. For best results, always use fresh batteries. 3. Make sure you insert the batteries with the correct polarities. 4. Remove the batteries from the kit when not in use. 5. Replace exhausted batteries straight away to avoid possible damage to the kit. 6. Rechargeable batteries must be removed from the kit before recharging. 7. Rechargeable batteries should be recharged under adult supervision. 8. Make sure that the supply terminals in the battery case are not short circuited. 9. Do not attempt to recharge non-rechargeable batteries. 10. Do not mix old and new batteries. 11. Do not mix alkaline, standard (carbon-zinc), or rechargeable batteries.

C. CONTENTS



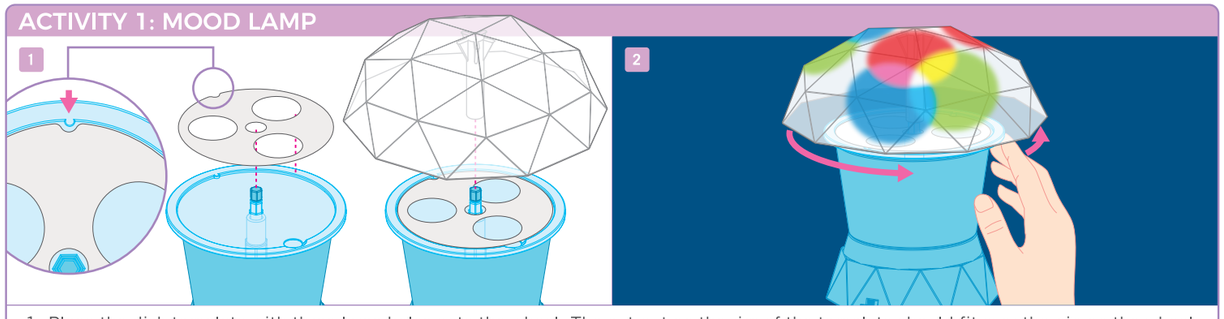
Part A: base x1, Part B: lamp body x1, Part C: wheel x1, Part D: lamp shade x1, Part E: zoetrope x1, Part F: animation strip x6, Part G: disk template x6, Part H: axis x1, Part I: battery compartment cover x1, Part J: screw x1 and detailed instructions. (Also required, but not included in the kit: a small crosshead screwdriver, two 1.5V AAA batteries.)

D. ASSEMBLY

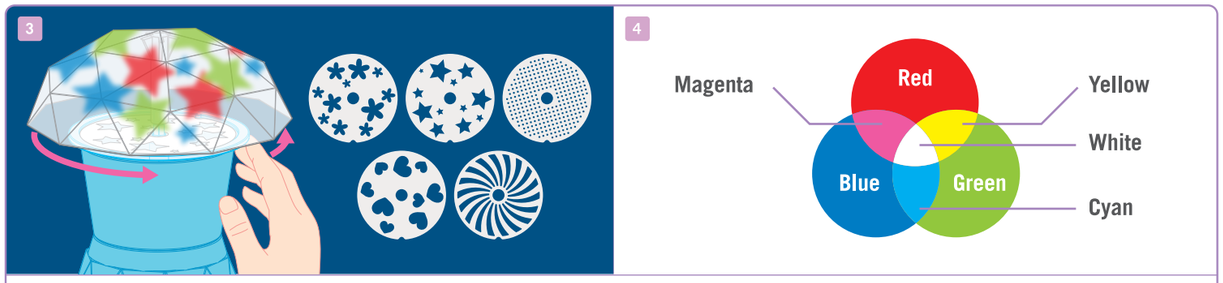


1. Push the axis into the centre of the base. Slot the lamp body onto the base.
2. Turn the Optical Mood Lamp upside down and insert two AAA 1.5V batteries into the battery compartment. Ensure that the batteries are inserted in the correct polarity (the flat, negative end of each battery should rest against the coiled spring). Replace the battery compartment cover and secure it with the screw.
3. Place the wheel onto the axis. It is now ready to use.

ACTIVITY 1: MOOD LAMP



1. Place the disk template with three large holes onto the wheel. The cut-out on the rim of the template should fit over the pin on the wheel. Push the lamp shade onto the axis.
2. For best results, use the Optical Mood Lamp in a dark room. Switch on the lamp and turn the template wheel until the three coloured circles slightly overlap.

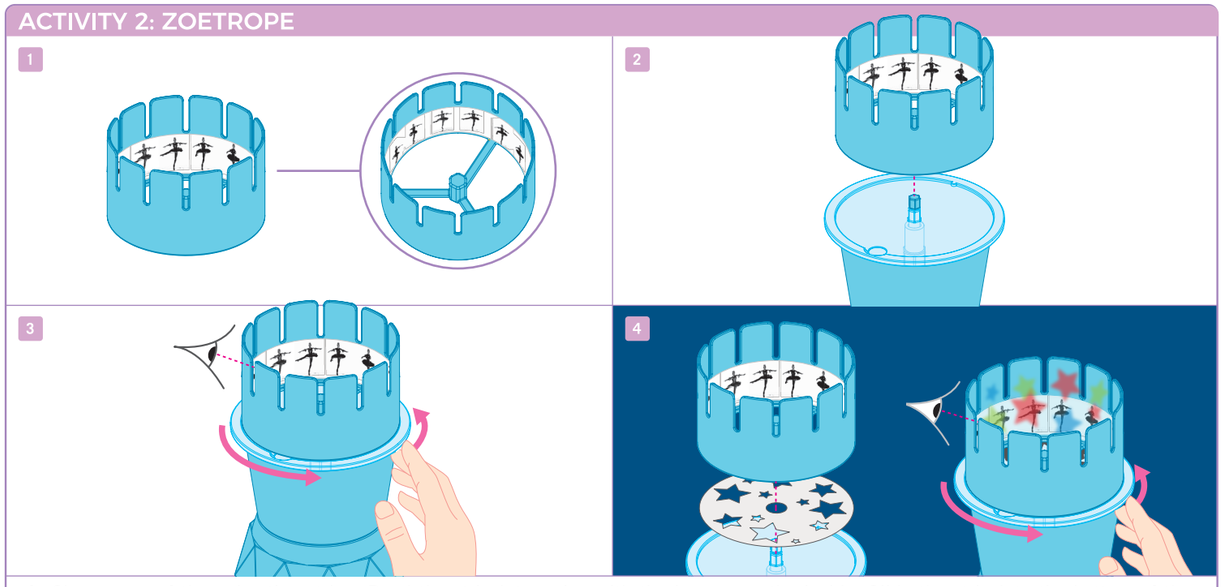


3. When two colours overlap, a new colour is made. For example, magenta appears in the area where the red and blue circles overlap. In the centre, all three colours hit the screen to create white light. This effect is called colour addition.
4. Try using the other templates to make more beautiful coloured patterns. See how new colours are made when the coloured shapes overlap.

HOW DOES IT WORK?

Red, green and blue are primary colours. When two colours overlap, a new colour is created: Red + Blue = Magenta; Red + Green = Yellow; Green + Blue = Cyan. This effect is called colour addition. When all three colours overlap, they come together to make white light. Any colour can be made by adding red, green and blue light in different amounts. Magenta, yellow and cyan are called secondary colours.

ACTIVITY 2: ZOETROPE



1. Choose one of the animation strips. Bend the strip into a ring with the images on the inside. Slide the strip into the bottom of the zoetrope drum.
2. Slot the base of the zoetrope onto the axis as shown in the diagram.
3. Your zoetrope is ready for action! Hold the zoetrope upright in one hand about 20cm from your eyes and spin the wheel with the other hand. Look through the slots in the drum and you should see the images come to life!
4. This time, let's play in a dark room. Choose a disk template and place it onto the wheel. Slot the base of the zoetrope back onto the wheel. Switch on the lamp and see how it lights up your animations!

HOW DOES IT WORK?

The zoetrope works by creating an optical illusion. Your eyes remember an image for a fraction of a second after the image has gone. This effect is called persistence of vision. When you look through the slits in the spinning zoetrope, your eye sees each picture in the strip momentarily. It remembers the picture until the next one appears. Your eyes are therefore fooled into seeing a moving picture.

E. FUN FACTS

- White light is made up of all three primary colours of light added together in equal amounts. If you take away one colour, you are left with the other two added together. For example, if you take blue light away from white light, you are left with red and green, so you see yellow. A yellow light filter actually removes blue light from the white light that hits it.
- The colours on the packaging of this product are made by colour subtraction, not colour addition. White light falls on the inks, and inks absorb some colours and reflect others. For example, yellow ink absorbs blue light from the white light, so it appears yellow to you.
- The zoetrope was invented in the early nineteenth century. It was one of many optical toys invented in Victorian times that displayed animated pictures before the invention of film and film projectors.
- The word zoetrope comes from the Greek words for 'life' and 'turning'.

QUESTION AND COMMENTS: We value you as a customer and your satisfaction with this product is important to us. If you have comments or questions, or you find any part of this kit missing or defective, please do not hesitate to contact our distributor in your country. You will find the address printed on the package. You are also welcome to contact our Marketing Support Team: Email: infodesk@4m-ind.com, Fax (852) 25911566, Tel: (852) 28936241, Web site: WWW.4M-IND.COM

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