

# KidzLabs™

## Kaleidoscope Making Kit

**Build your own kaleidoscope. Create millions of dazzling patterns by filling in different trinkets into the object chamber. Make a 25 cm long Colour Changing Kaleidoscope, Mystic Glow Kaleidoscope, Geometric Pattern Kaleidoscope, Snowflake Kaleidoscope. All in one kit.**

### A. SAFETY MESSAGES

1. Please read through the instructions before you start.
2. Adult assistance and supervision recommended.
3. This kit and its finished product contain small parts which may cause choking if misused. Keep away from children under 3 years old.
4. Scissors from home needed. Adult supervision required.

### B. CONTENTS

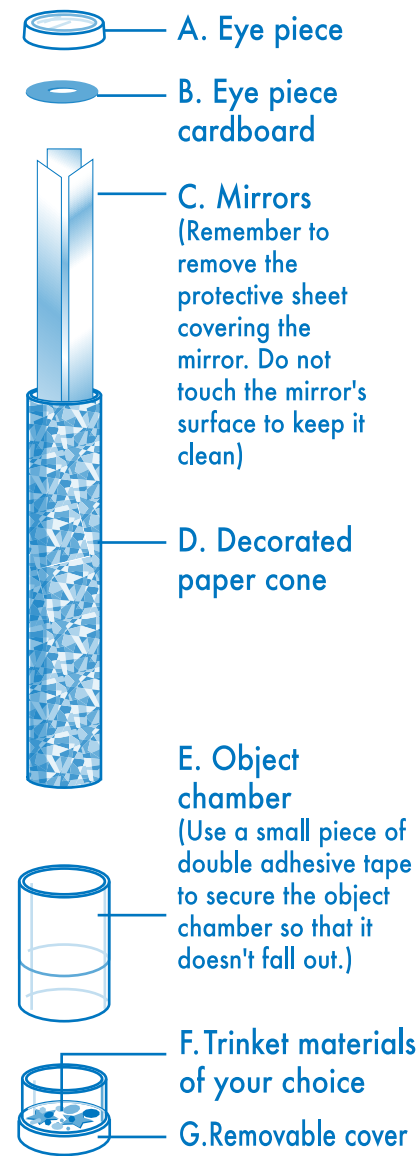
1 paper cone, 1 holographic foil, 1 set object chamber with removable cover, 3 safety mirrors, 3 bags of different trinkets (glow stars, coloured beads, crystal clear beads), 1 coloured paper, 1 holographic sticker, 1 eye piece cardboard, 1 card strip, double adhesive tapes, detailed instructions with fun facts and ideas for making different kaleidoscopes.

### C. INSTRUCTIONS

#### 1. DECORATE THE PAPER CONE

Use the holographic foil included to decorate your kaleidoscope. Simply roll it around the paper cone and stick both ends with the double adhesive sticker provided. You can decorate your paper cone or object chamber further with the holographic stickers provided.

### 2. ASSEMBLY DIAGRAM



### 3. MAKE YOUR OWN KALEIDOSCOPIES

The object chamber is specially designed with a removable cover. Fill the object chamber with different things to create totally different styles and patterns for your kaleidoscope. Just remember not to overfill the chamber. You should always allow some room for the objects inside to move around so that patterns can be created freely. Here are some of the unique kaleidoscopes you can make.

#### a) Colour Changing Kaleidoscope...

Open the cover of the object chamber and fill it with the coloured beads provided. Replace the cover and a generic colour kaleidoscope is made. Look into the kaleidoscope to see the dazzling patterns you created! The kit also includes 3 colour filters. You can use these to try some simple experiments. Insert them into the object chamber and explore the extra dimension they add to your kaleidoscope. Some colour mixing hints can be found below:

Yellow + Red = Orange    Yellow + Blue = Green    Red + Blue = Purple

#### b) Mystic Glow Kaleidoscope...

Add the glow stars (the bag of greenish yellow stars provided) into the chamber. Charge it with any light source for a while. Turn the light off, or cover the object chamber with your hand. The patterns inside the kaleidoscope will glow in the dark like magic.

#### c) Cool Snowflake Kaleidoscope...

Take the bag of clear transparent beads provided and fill them into the chamber of the kaleidoscope. This creates millions of charming snowflake patterns for you to admire! Now, remove the eye piece, and cover one mirror with the black cardboard strip provided. The "two-mirror kaleidoscope" will show a single snowflake pattern. (Can you tell the difference between a two-mirror kaleidoscope and a three-mirror kaleidoscope?)

#### d) Geometric Pattern Kaleidoscope...

Use the bag of coloured beads and coloured paper (cut it into random pieces before use) and place them into the object chamber. For this kaleidoscope, you will see more patterns by holding the kaleidoscope vertically with the object chamber at the bottom. The geometric pattern will be spread wider and will be able to reflect colourful lights more efficiently. Move the kaleidoscope gently and watch the shape and light patterns twinkle like jewels.

#### e) Real World Kaleidoscope...

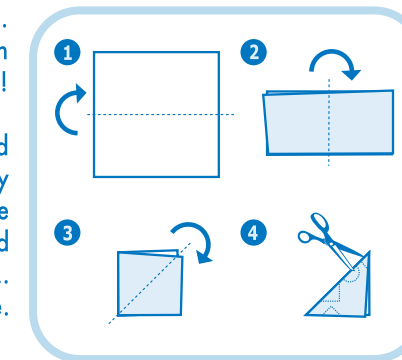
Did you know you can turn the things around you kaleidoscopic? Just remove the whole object chamber from the tube! Now, use your "open ended kaleidoscope" to view objects around you. You will see an interesting kaleidoscopic world.

#### f) Kaleidoscopic Images on Paper...

A kaleidoscope is the magic of reflection and symmetric properties. But can you still make a kaleidoscopic image without the use of mirrors? Follow the instruction diagram to fold a piece of paper. Once you have finished folding, cut the edges into different shapes. Spread open the

piece of paper and you will see a kaleidoscopic design. Try experimenting using this design technique with different shapes and cuts. The combinations are endless!

Unleash your creativity. Try mixing the trinkets provided to create more unusual kaleidoscopes. You can also try using different objects as trinkets. Here are some suggestions: paper clips, buttons, pieces of coloured paper, insects, flower petals, small stones, photos..... Everything is beautiful from inside a kaleidoscope. ENJOY!



### D. FUN FACTS

The kaleidoscope was invented in 1813 by a Scottish scientist, Sir David Brewster, who worked in the field of optics and polarised light. He discovered that when mirrors and loose coloured glass objects were placed inside a tube, one could see beautiful patterns from the other end of the tube. Fascinated by the optic beauty it created, he gave the device a name which was a combinations of Greek words: KALOS, EIDOS, SCOPOS, meaning beautiful(kalos)-form(eidos)-viewer(scopos).

The kaleidoscope was meant to be a scientific device. Some designers of the time also used it as an aid for creating fabric patterns. However, it was such a fun invention that it became more popular as a toy! It has captured the imagination of both children and adults for nearly two centuries. A kaleidoscope is formed by placing two or three mirrors in acute angles inside a tube. When trinkets like coloured glass are placed in between the mirrors, multiple reflections of the objects are formed, creating dazzling patterns which never repeat. In a two-mirror kaleidoscope, the smaller the angle between the two mirrors, the more reflections will be formed.

### QUESTIONS & COMMENTS

We treasure you as a customer and your satisfaction with this product is important to us. In case you have any comments or questions, or you find any parts of this kit missing or defective, please do not hesitate to contact our distributor in your country, whose address is printed on the package. You are also welcome to contact our marketing support team at Email: [infodesk@4M-IND.com](mailto:infodesk@4M-IND.com), Fax (852) 25911566, Tel (852) 28936241, Web site: [WWW.4M-IND.COM](http://WWW.4M-IND.COM)