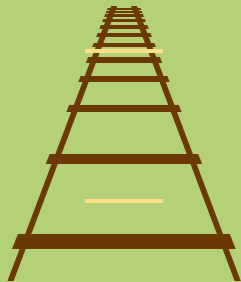


FUN FACTS

THERE EXIST MANY DIFFERENT  
OPTICAL ILLUSIONS.



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MINGDE RD., PUYAN, BINJIANG, HANGZHOU, CHINA.

# LEARNING BOOKLET

Magic Vision



**WARNING:**  
CHOKING HAZARD - Small parts,  
Not for children under 3 years.

AGES **8+**

## WARNING MESSAGE

### GENERAL WARNING

*Before you begin, please read through the instructions together with your children. Make sure you understand the safety messages. Please keep the packaging and instructions, as they contain important information.*

*This kit is designed for children over 8 years of age. This product contains small parts which may pose a choking hazard. It is not suitable for children under 3 years old. Please keep individual parts and the fully-assembled product away from children under 3 years of age.*

*Screws and other metal parts may have sharp edges. Children should have adult supervision when assembling the product.*

*Last but not least, please clean the parts and finished product with a damp cloth. Do not use any soap or cleaning solutions.*

## Package Contents



● Card holder



● Spinning mechanism



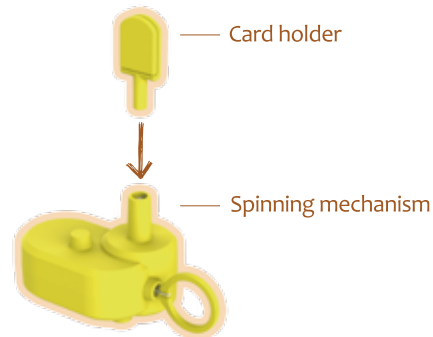
● Handle



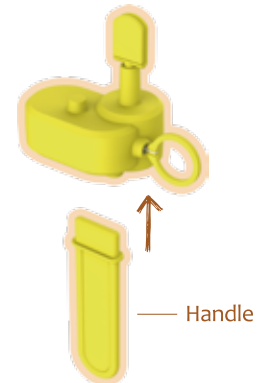
● Cards

## Installation steps

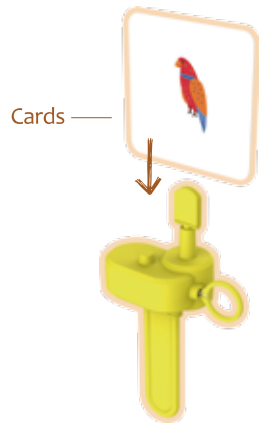
1. Insert the card holder into the spinning mechanism.



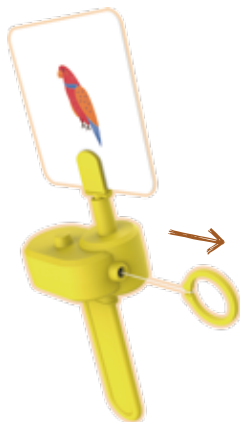
2. Attach the handle to the bottom of the spinning mechanism.



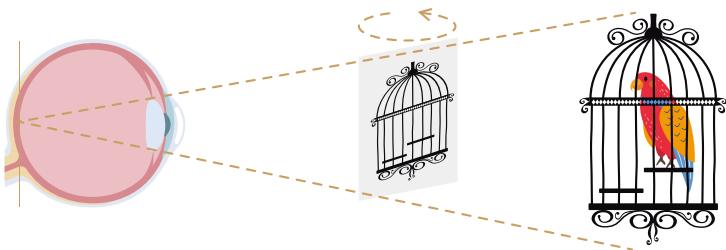
3. Slide the card into the card holder.



4. Fully pull out the string and let it go.



Use your imagination to draw your own images and create a funny blending.



## What does it do?

Pull the rope and let it go, the pictures will rotate and appear to blend into one.

## How does it work?

While looking at the spinning images you notice that they appear to blend into one. This is due to what scientists call "The persistence of vision". It is an optical illusion that makes an image persist in your brain for a very short moment after you actually see it. Since the images move very fast, while your brain still remembers the previous image, it receives the next one and the images blend into one in your brain.

# FUN FACTS

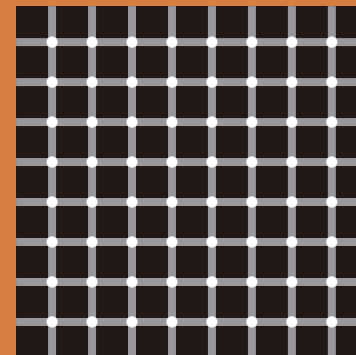
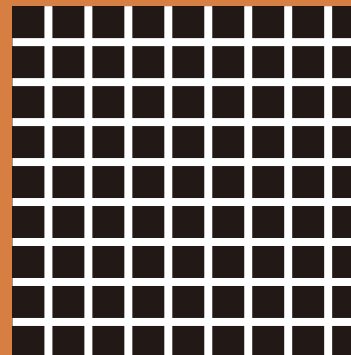
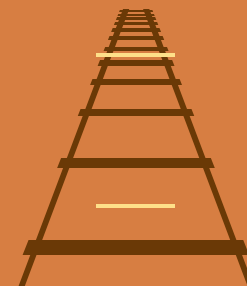
## FUN FACTS 01

The persistence of vision is also the principle behind animations. Cartoons and movies are actually a succession of many still images that are interpreted by the viewer as a moving image due to the persistence of vision.



## FUN FACTS 02

There exist many different optical illusions. The one you just created with Magic Vision is based on the Persistence of Vision. Some others like the **Ponzo illusion**, trick our brain using geometrical shapes.



Another well known illusion is called the **Hermann grid illusion**. Have a look at the grid, can you tell how many black or grey dots appear at the intersections of the lines? In fact there is no black or grey dots, the high contrast black and white areas fool the eyes into perceiving a gray circle at each intersection.

As explained in the previous page (fun fact 1), the persistence of vision is the principle behind animation and movies. But how fast the images should scroll to appear as a moving image? Our eyes can detect up to 25 images per second. More than that, and because of the persistence of vision, the images will "blend" and appear as a moving one.



Try to build other optical illusions with more pictures!

