

# SCIENCE MAGIC

## HYPNOTIC SPINNER

### ⚠ WARNING

CHOKING HAZARD - Small parts  
Not for Children under 3 years

To Parents: Please read through these instructions carefully before giving guidance to your children.

### SCAN IT! WATCH IT!



WATCH THE ONLINE  
VIDEO TO SEE THE  
MAGIC SECRET!

**CAUTION:** The spinning patterns of the illusion spinner may cause dizziness to some individuals. If you find this illusion spinner uncomfortable to look at, do not continue with the games.

### A. PREPARATION

Push together the top and bottom parts of the spinner. Slot the spinner into the spinner base. Push the spinner handle into the hole in the top of the spinner. That's it. You're ready to do the trick.

### B. PERFORMING THE TRICK

1. Ask for a volunteer from your audience. Give the volunteer the cloud card to look at. Explain that you can make the clouds in the picture move, without touching the card.

Stand the spinner on the table in front of your volunteer, with the card next to it. Say that the spinner has magical powers!

Explain that you are going to spin the spinner, and that your volunteer must stare into the centre of spinner until you tell him or her to stop looking.

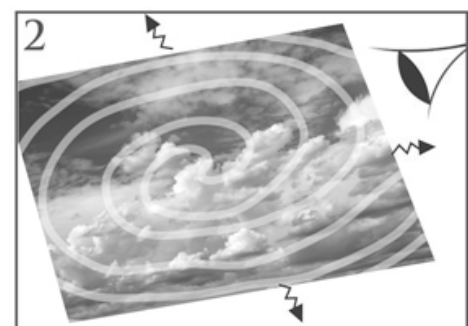
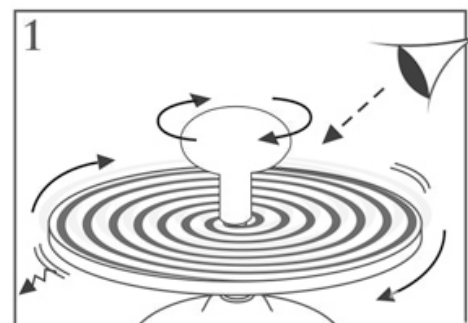
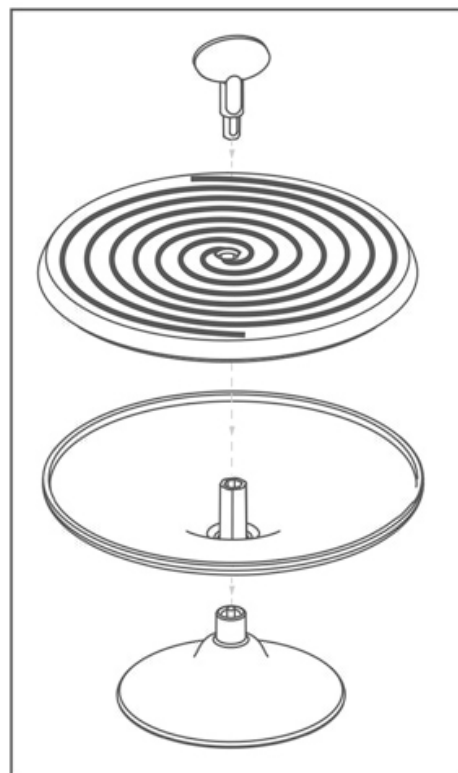
Using the handle, spin the spinner clockwise. Check that your volunteer is looking at the centre of the spinner, and count to thirty slowly in your head (this should take about 30 seconds). Encourage your volunteer to keep staring at the spinner.

2. Now ask your volunteer to stare at the centre of the cloud card. They should see the clouds moving outwards from the middle. Weird!

Then try spinning the top anti-clockwise and see what happen. Or try looking at some other objects like a toy figure, or the back of your hand etc, you will see them morph like magic.

### C. HOW THE TRICK WORKS

This trick has a scientific explanation. The spinner confuses your eyes and your brain. Your brain has different nerve cells that detect movement in different directions in the scene you are looking at. When you are looking at something stationary, the different cells are all stimulated by the same amount, and the signals from the cells cancel each other out. When you stare at the clockwise-spinning disc you see lines moving inwards. After a while the cells that detect this inwards movement get tired. When you then look at a stationary scene, like the picture of the clouds, the cells that detect outwards movement override the tired cells, and you are fooled into seeing outwards movement in the picture. That's why the clouds seem to move outwards. This is called the 'motion after-effect'. The illusion disappears when the tired cells recover after a few seconds.



### QUESTIONS & COMMENTS

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