



Magic Science Summer Camp Unit 4: Optical Illusions

Time: 3 hours

Ages: 4-10

Learning Objectives:

- What is an optical illusion?
- What are light reflection and refraction?

Word of the Day: ILLUSION

Activity Overview

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Introduction to the Subject, Word of the Day & Videos (10-15 mins)

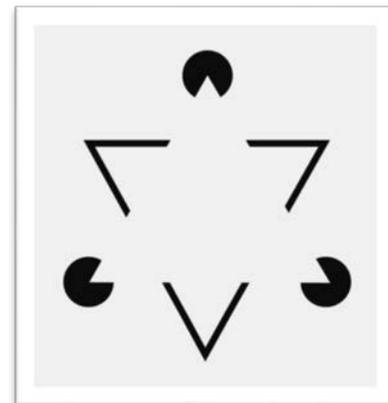
Introductions are usually done with students sitting together on a carpet or similar.

Ask the kids some questions to get them excited about the camp: How many of you have seen a real magician before? How many of you know some magic tricks already?

Today we will be using optical illusions in our magic tricks. Does anyone know what "illusion" means?

Word of the Day: ILLUSION

The Science: What is an illusion? An illusion is something that isn't really there or isn't really happening. An optical illusion is an image that fools the eye and creates an image in your brain that doesn't really exist. When the information from an image is incomplete, the brain will fill in the gaps by making an educated guess and creating patterns from information that is there. For example, in the optical illusion that you see to the right (see printables for a larger version), it looks as if there are 2 triangles present, but in reality, there are no triangles at all -- just a series of shapes.



Magicians are masters of illusion and tricking the eye. We will create our own optical illusion tricks in camp today!

Show Videos.

Show videos of magicians creating different illusions. Suggested videos are available on the Curiosity Zone YouTube

channel: https://www.youtube.com/user/CuriosityZone/playlists?view=50&shelf_id=14&sort=dd



Big Demo of the Day: Growing Arc (see attached) (5-10 mins)

<Transition: have each student move from circle time to a seat at a table.>

Moody Money and Other Optical Illusions (see attached) (25 mins)

<Transition: have students practice with their "moody money" or explore their optical illusion books while you organize for the next activity. Then ask them to place their materials in their designated spot and help you clean up.>

Birdcage Spinner Illusion (see attached) (25 mins)

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Birdcage Spinner Illusion



Time: 25 minutes

In this activity, students make an optical illusion spinner that tricks the brain into thinking that two different images have merged into one. In this case, the image looks like a bird flying out of a cage.

Materials

- White card stock – 1 sheet per 2 students
- Pencil or similar “stick” – 1 per student
- Scissors – class set
- Scotch tape – class set
- Bird and cage printables (see camp printables) – 1 per student

Prep

- Print the bird and cage images out on cardstock – one set per student.
- Make a demo by the following the steps in the procedure and practice.

Procedure

1. Demonstrate the birdcage spinner to the students and ask how they think it works.
2. Pass out the supplies. Have students cut out the rectangles with the cage and the bird.
3. Tape the pencil/stick to the center back of the cage image; now tape the bird to the other side, so that when you spin the stick you quickly see the cage, then the bird, then the cage, then the bird – over and over. This creates the illusion that the bird is flying out of the cage.
4. Have the students practice spinning the pencil quickly by pressing the pencil between the palms of their hands (with the illusion card at the top above their hands) and quickly rubbing their hands back and forth.



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