

## SCIENCE FESTIVAL FACILITATOR'S GUIDE



### Catching a Bird

**Note: This activity is particularly applicable to grades K-2**

#### BEFORE THE EVENT

##### 1. Make sure you have the materials you need.

- Small index cards
- Colored pencils or markers for drawing
- Straws to hold the cards
- Clear tape

##### 2. Watch this video on your smartphone:

<https://www.youtube.com/watch?v=Dh2GcfTCqe0>

##### 3. Prepare your station.

- Distribute index cards, colored pencils or markers, straws and tape around the table, where they can be easily shared.
- If you have time, make an example to show participants.

#### DURING THE EVENT

##### Questions to ask participants before they start:

- Who likes cartoons and animated movies? (For older students, you might ask about anime instead.)
- Who has some ideas about how these shows are made?
- Encourage students to share their ideas for a few minutes—remember, there are no wrong answers!

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### Instructions:

Please read each set of instructions out loud. Make sure that you direct the correct person to complete each assigned task.

- **Both:** Pick who is going to make the bird and who is going to make the cage.
- **Student (or Adult):** Draw a picture of a bird on an index card.
- **Adult (or Student):** Draw a birdcage on another index card.
- **Adult:** Tape the two cards, drawing sides out, on opposite sides of your straw.
- **Student:** Spin the straw between your hands or fingers and watch your pictures. Is the bird still free or did you catch it and put it in the cage?

### How it Works:

The bird appears to be caged because of how your eyes and brain work. When you see the image of the bird, your brain holds onto the image for a short time—even though the image appears and disappears quickly. The same thing happens with the image of the cage. The two images actually overlap in your brain, so (if you put them in roughly the same place on the two index cards), the bird appears to be in the cage. The technical name for this effect is persistence.

### Vocabulary:

**Thaumatrope:** A toy with different pictures on opposite sides. When twirled, those pictures appear to combine into one image.

### Real-World Application:

Animation artists follow this same process to create cartoons. Rather than using just two images, animation is composed of many different images, all drawn in a way that suggests motion to our minds. The artist draws the cartoon characters in multiple sequential images and presents them to us in a manner that causes our minds to fill in the missing pieces. Understanding how to make optical illusions and work with images is important in many software and media jobs.

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