

# Optical Illusions

## Objective:

*Students will create thaumatropes which demonstrate that the eye and brain make assumptions and sometimes see what isn't there.*

## Key Concept:

The eye continues to see an object for a short time after light from the object no longer enters the eye, causing us to see the previous image while the next is shown. This persistence of vision makes the pictures appear to blend together.

## Supplies Needed:

- Crayola® crayons
- 3"x 5" index cards or similar size pieces of firm paper or poster board
- straw or pencil
- clear tape

## Procedure and Results:

1. Provide each student with two cards or pieces of firm paper and crayons to make a thaumatrope. Ask each child to draw a bird on the center of the plain side of one card and an empty bird cage on the plain side of the other card.
2. Tape a straw or pencil on to the back of one card. Then tape the sides and top of the two cards together. The straw or pencil will serve as a handle, similar to a lollipop's stick.
3. Roll the pencil between your hands very quickly. Observe the two drawings. What happens? How did the bird get into the cage?
4. Explain that the images are moving faster than the eye and brain can receive them. The eye persists in holding an image for a fraction of a second after the image is gone, which is called "persistence of vision". The thaumatrope makes it appear that the two images are combined.



**FACT:**



THE BIRD LOOKS LIKE IT IS IN THE CAGE BECAUSE THE IMAGES ARE MOVING SO FAST THE EYE CONTINUES TO SEE THE FIRST IMAGE EVEN AFTER IT IS GONE.

