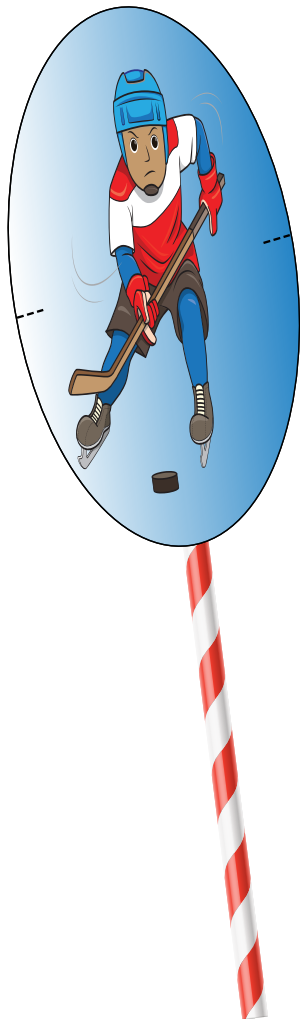


# Make a Thaumatrope

The thaumatrope has been tricking our eyes since the 1800s. With this toy, you can make two drawings on separate papers merge into one!

## What You'll Need

- Image pairs (next page)
- Scissors
- A glue stick
- Adhesive tape
- A wooden skewer or straw
- Optional: coloring pencils



## What You'll Do

1. Choose and print a pair of pictures.
2. Optional: color the pictures.
3. Cut out the circles.  
*Safety first! Adult supervision may be needed when handling scissors.*
4. Use the tape to attach the skewer or straw to the back side of one of the pictures. This will serve as your axis. Make sure that the dotted line is in the center.
5. Glue the second picture back-to-back with the first one (the skewer or straw will be between the two pictures). Before gluing them together, make sure that the dotted lines are aligned. The surfaces that you colored should be facing out.
6. Leave the glue to dry.

Hold the thaumatrope between your palms (as far from your face as possible for the best illusion). Rub your hands back and forth together quickly to spin the skewer and see your two pictures become one!

## What to Think About

The scientific principle behind this toy is known as “persistence of vision.” What happens is simple: the pictures change so quickly that the eyes and the brain don’t have time to see the individual images. The brain is still registering the first picture when the visual information from the second one arrives. As a result, the brain mixes the two pictures to make one single image!

You might be surprised to find that the principles behind the thaumatrope are the same ones that have led us to create animated films! By creating still drawings which change quickly from one to another, the illusion of motion is created. This is because the previous drawing, or frame, persists for just long enough to make the transition seamless.

## What to Try Next

Another toy which uses the principle of persistence of vision is the flipbook – try making your own!

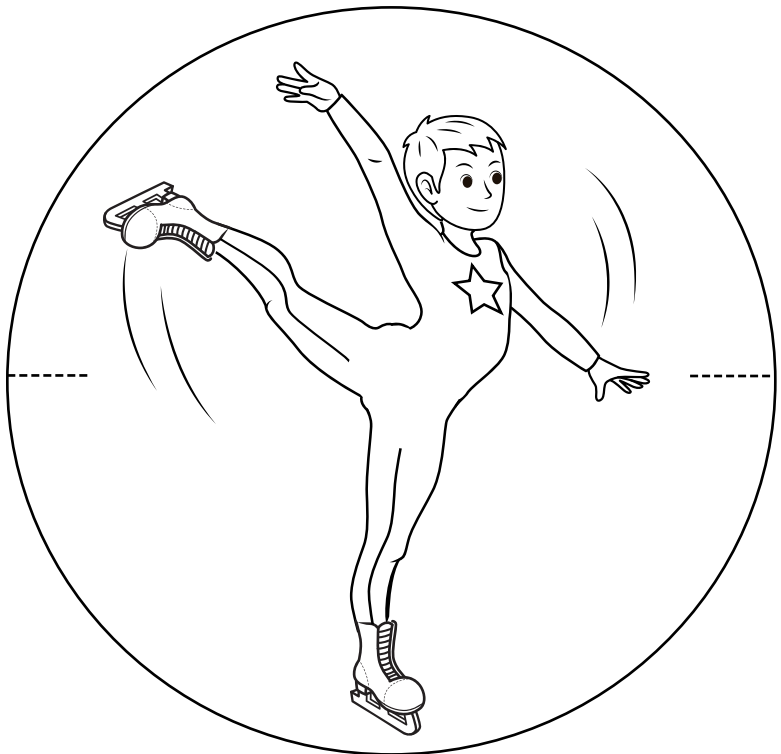
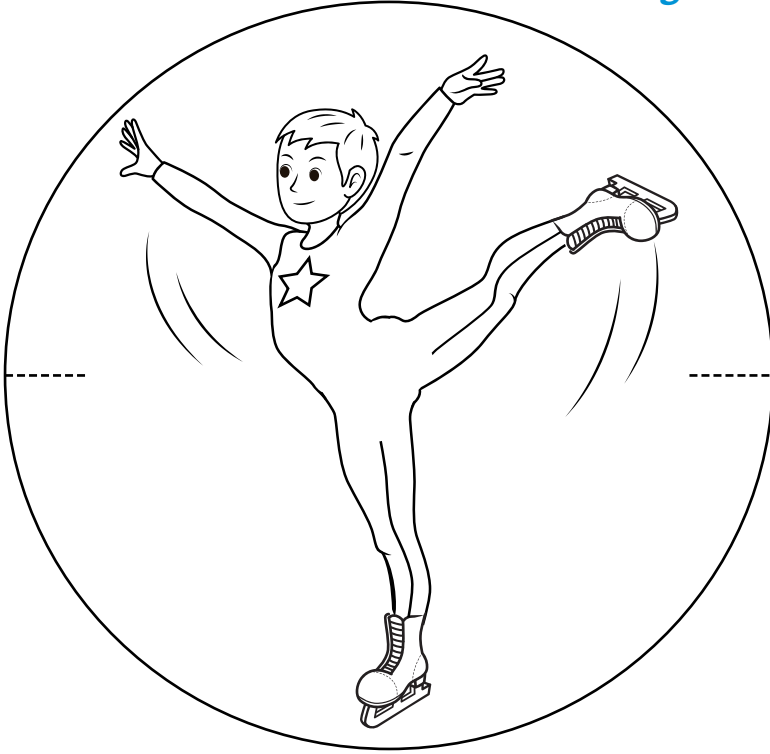
## Image Pairs: Ice Skater



## Image Pairs: Hockey Player



## Image Pairs: Ice Skater



## Image Pairs: Hockey Player

