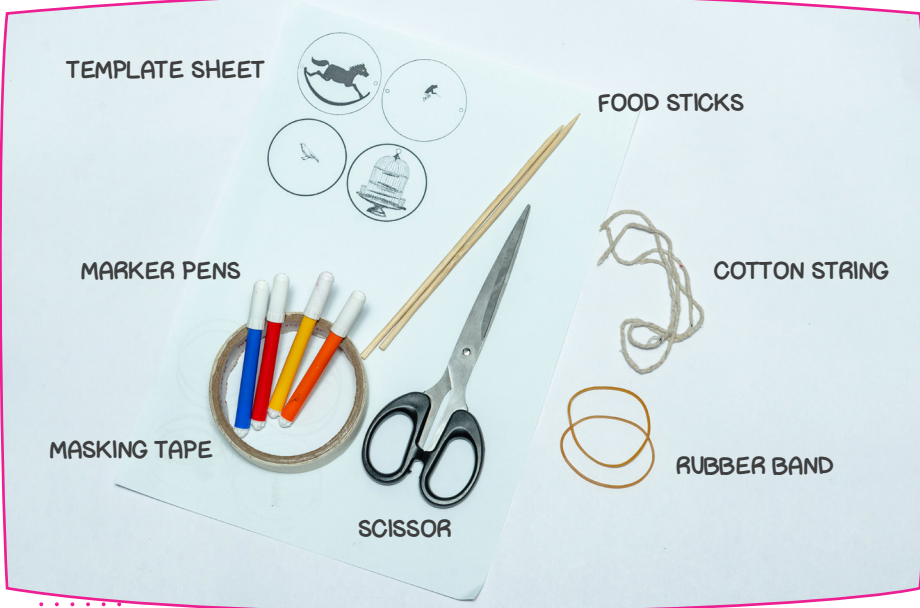# Thaumatrope

Optical illusions are really cool. Can you recall any optical illusions that you've enjoyed?

Let's create some wonderful optical illusions. In this lesson, we will build a device called thaumatrope and play with it. The term thaumatrope comes from Greek origin which means "wonder turner."

WE WILL NEED THESE MATERIALS

TEMPLATE SHEET

FOOD STICKS

MARKER PENS

COTTON STRING

MASKING TAPE

RUBBER BAND

SCISSOR

LET'S BUILD A SIMPLE THAUMATROPE FIRST TO UNDERSTAND WHAT IT IS.
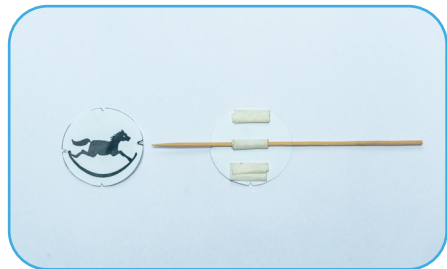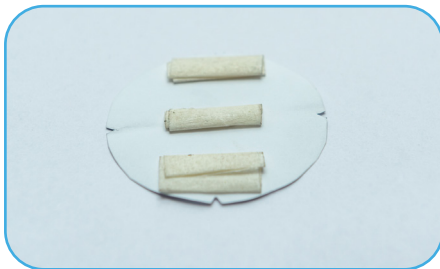
1

Take the template sheet. Cut out the printed images in circular shape.

2

Make three small rolls of masking tape such that the sticky surface lies outside. Attach those masking tape rolls horizontally on the backside of one of the circles. Apply two rolls at the top and bottom, and one at the center. Insert a food stick through the tape roll in the middle.
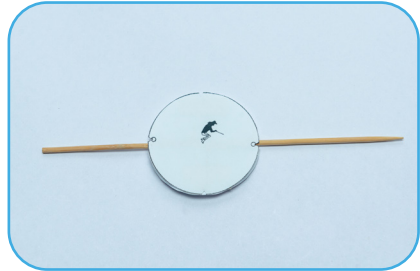
3 Join both the circles by pressing the backside of the other circle against the first. Before attaching make sure the images are properly aligned with each other.
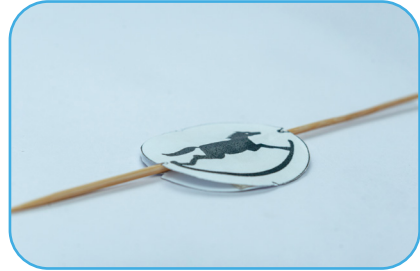
Note: This part can be a bit tricky. But Don't worry, we'll figure out the correct way to align the two images after a few tries.

4 Our thaumatrope is now ready

5 Lift the thaumatrope by holding the ends of the food stick. The stick should be held in a horizontal position. Now blow gently at the edge of the circle and get it to rotate. Observe what happens.

What did you observe?

_____

_____

If we have done it correctly, we should see the two images overlap and appear together. This simple device is known as the thaumatrope.

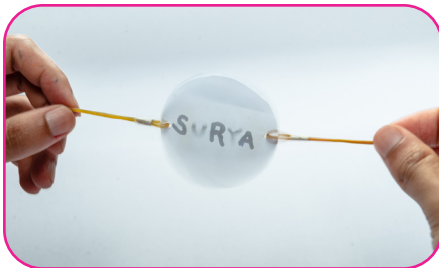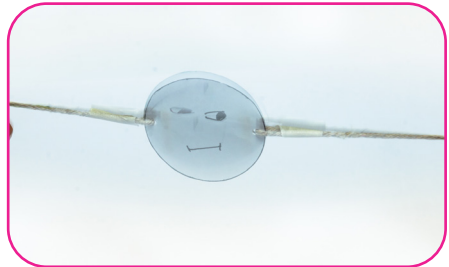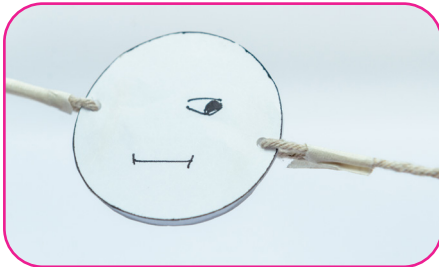## LET'S BUILD SOME THAUMATROPES WITH OUR OWN DESIGNS

The process is the same as that we followed earlier. Cut out two equal circles from blank paper and draw on them. You can use colored papers as well.
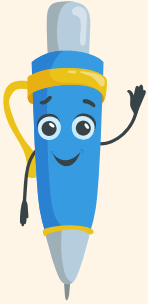
LET'S MAKE

GET CREATIVE WITH YOUR THAUMATROPE. WHAT ILLUSION DO YOU WANT TO CREATE?

THESE SAMPLE THAUMATROPES WILL HELP YOU GET IDEAS.

These thaumatropes work by simply twisting the strings or the rubber bands.

We found these tips to be helpful while building the thaumatrope

✓ Think about the kind of optical illusion you want to create.

✓ Cut circles from the edge of the paper. We'll be able to create more thaumatropes this way.

✓ Make sure both the images are aligned with each other, vertically and horizontally, before you move on to decorate them. Doing so will save you a lot of time.

✓ Use light colors for background or paper, and dark colors for text and image to improve the visibility of your illusion.

Think like a scientist
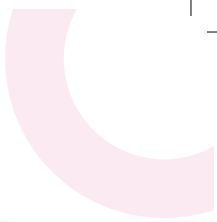
What makes us see the two images combine?

Think like an engineer

How is the working of a thaumatrope similar to the working of animations?
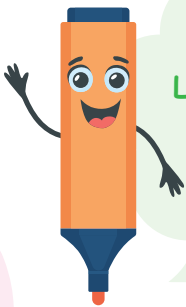
Let's experiment with different designs

- What difference does the size of the thaumatrope make to the illusion? What if the thaumatrope circle is large? Or small?

- What happens if we rotate the thaumatrope slowly? What if we rotate it too rapidly? Is there a correct speed of rotation?

As usual, let's reflect on our learning experience. Successfully making your thaumatrope and having fun is great, but learning is equally important.

Complete these sentences

- Something I already knew is _____

- I am now curious about _____

What kind of illusion did you enjoy making the most? Why?