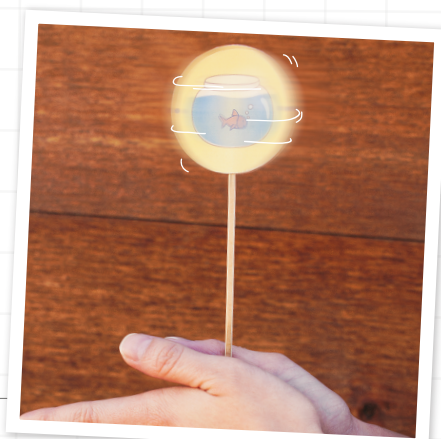


# MAKE A Thaumatrope

This classic toy is a fun and easy way to play with persistence of vision. When you spin a thaumatrope, the pictures on either side seem to combine into one image. Use the cut-outs to get the hang of it, then try drawing your own designs!



## What you'll need



cut-outs from the back page



scissors

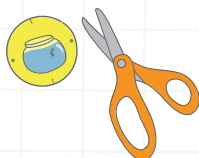


wooden skewers



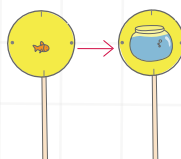
double-stick tape

The word "thaumatrope" means "wonder turner"



## Step 1

Cut out a pair of thaumatrope circles from the back page.

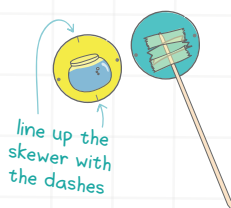


## Step 3

Place the other circle on top so the dots line up.

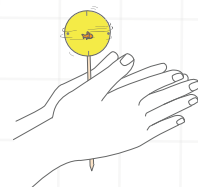
## QUICK TIP

Make sure both pictures are right side up



## Step 2

Tape a skewer to the back side of one circle.



## Step 4

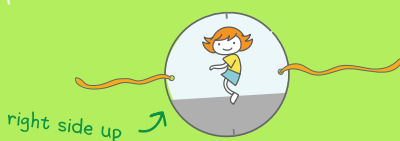
Spin the skewer and watch the pictures combine!



Try spinning the robot design slowly. At the right speed, it begins to look as if the robot is jumping up and down. Congratulations, you just used a thaumatrope to create a tiny two-frame animation!

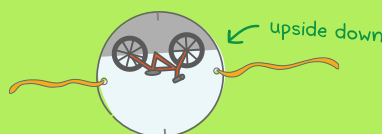
## Try this!

You can also spin your thaumatrope using a string instead of a skewer. First, tape the circles together so that the picture on the back is upside down.



Then poke a hole through each dot, and tie on a short piece of string.

To spin, hold the string tight and roll it back and forth between your fingers.

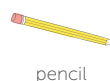
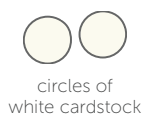


Turn the page to learn how to create your own designs!

# Design your own

You can make a thaumatrope with almost any pair of drawings you can think of—try it out and see what you can make!

## You'll also need



A good place to start is with words. Pick a short phrase and sketch it lightly in pencil onto two cardstock circles. To make the effect as smooth as possible, make sure the letters are in the same place on both circles.

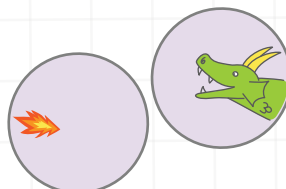
Then trace over the letters with a marker. Do some letters on one circle and some on the other, like this.



Finally, tape your circles onto a skewer and give it a spin!



You can use this same technique to combine drawings—just make sure the two halves of the drawing line up. What about a dragon on one side and flame on the other? Or a bee landing on a flower? Or a bare tree on one side and leaves on the other? Sketch out your ideas and test it out!



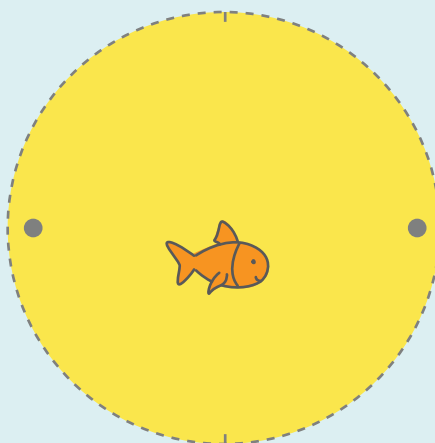
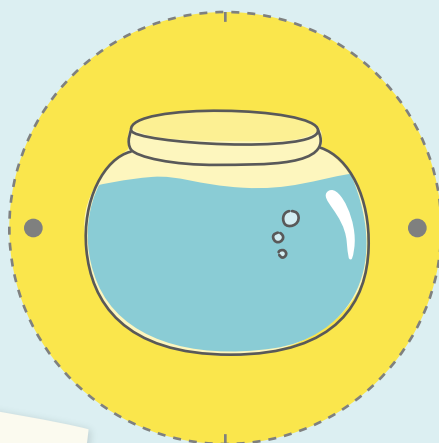
**Question:** How do you see two sides of a coin at the same time?

**Answer:** Spin it!

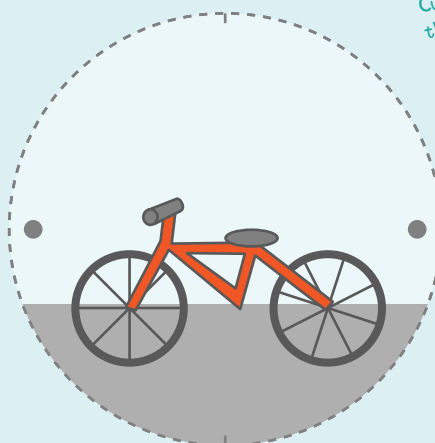
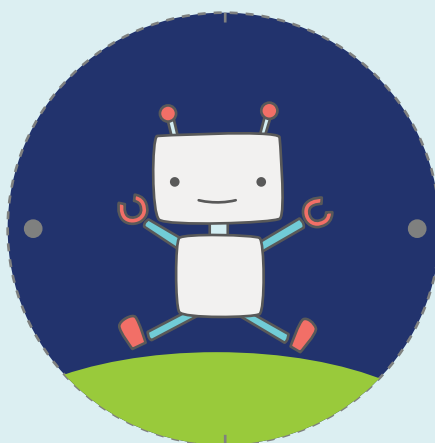
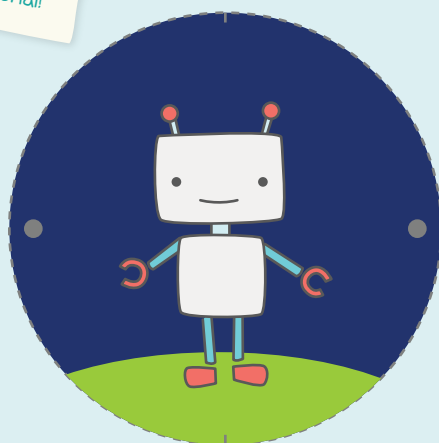


Yes, spinning a coin will let you see both sides at the same time. In fact, this trick may be the inspiration for the invention of the thaumatrope in the early 1800s. Give it a try and see for yourself!

# Cut-out Thaumatropes



Check out page 3  
for the tutorial!



Cut out along  
the dotted lines

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