

Moving Pictures.

Spin two pictures to trick the brain and make a new single image!

The inspiration for this activity!



MOXI Exhibit Connection	Spinetic Sculpture
Age	6+
Time	15+ min
Category	Motion, Tinkering, Design

Educational Value	
Based on Next Generation Science Standards (NGSS)	
Grade	Standard
K-2	K-2-ETS1-2
3-5	3-5-ETS1-3
6+	MS-ETS1-4
*May include opportunities to employ the following Science and Engineering Practices:	
<ul style="list-style-type: none"> Asking questions Defining problems Designing solutions Obtaining, evaluating, and communicating information 	

↖ For Educators

Design Challenge

In ancient Greek, "thaumatrope" means "wonder turner"! Give one a spin and you'll see a single picture emerge from a spinning disc containing two sketches. Tinker with the images and line them up perfectly to get the best effect.

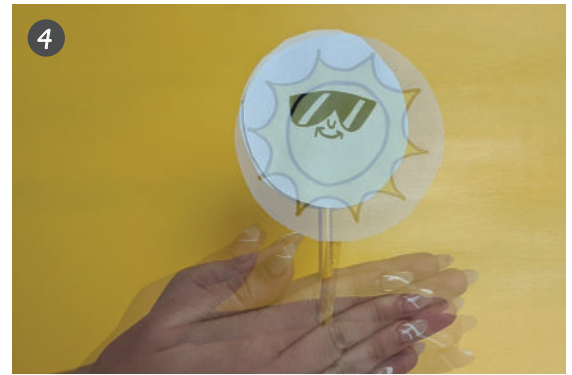
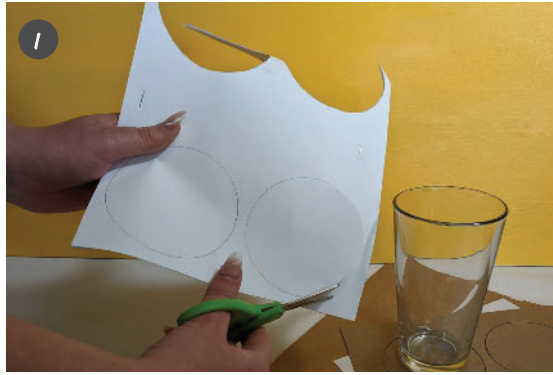
Materials

Below are some ideas for supplies, but be creative! What else could you use for each of the categories below? Your home is a creative tool chest waiting to be discovered!

Tools	Surfaces	Drawing	Connectors
<ul style="list-style-type: none"> Scissors Tracing circle (cup, lid, etc.) Spinner stick (paintbrush, pencil, chopstick, etc.) 	<ul style="list-style-type: none"> Cardboard Index card Blank paper 	<ul style="list-style-type: none"> Markers Pencils Pens Crayon 	<ul style="list-style-type: none"> Glue Tape Staples

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Instructions



Using a dark, thick drawing tool will make your animation easier to see.



1. Using a circular object to trace, cut out two circles on thick blank paper. You might also need a circle of cardboard to make it sturdier.
2. The two paper circles will be the two sides of your thaumatrope. On one side of each circle, draw a picture. Spinning your thaumatrope will blend the two pictures into one image. On your first try, keep it fun and simple!
3. Glue or tape the paper circles together or to the cardboard circle. What else can you add to



Images not lining up?



Try tracing the second picture on top of the first to make sure they're aligned.

4. Now you're ready to attach the disc to a spinner stick. The end result should look like a lollipop. To make your animation come to life, hold the stick between your palms and rub them together like you're trying to warm up your hands. Experiment with where you place your drawings and spin speed to make the perfect blend!

Activity Extensions

Why stop here?
Keep the MOXI fun going!

invent Old thaumatropes often contained riddles or jokes where one side had a question and the other had an answer! Can you think of one to add to your thaumatrope?

interact How else can still images trick the eye?
Collaborate on a flip book by organizing a mail exchange with a friend or drawing with a family member! Alternate drawing pages of a flipbook sketched on cardstock or Post-its.



imagine Want to explore digital ways to create animations? Using a stop motion app, you can use pictures to create your own stop-motion animation! Tell a story starring objects from around the house.

Ask a Spark

Why do the two pictures blend into one?



Yasmine Yamofio, MOXI Spark

Your brain can only process about twelve images per second. When pictures are presented faster than that, the image sticks around in your brain for a fraction of a second longer than the picture itself appears! It's like when you brush your teeth and the minty aftertaste blends with the flavors of things you eat afterward. It's similar with vision – the first picture sticks around, so it blends with the next one and lets you perceive one composite image!

Make + Share!

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