

Stay at Home Science



Thaumatrope

What You Need

Index card or cardstock
Markers, crayons, or colored pencils
Straw, coffee stirrer, or pencil
Stapler or clear tape

What You Do

1. Fold your index card or piece of cardstock in half so that the shorter sides touch. Orient the card so that the folded side is at the top, and the open side is on the bottom.
2. Draw a pair of related pictures, with one picture on each side of the card. For example, draw a bird on one side and a cage on the other side or a flower on one side and a vase on the other.
3. Slide a straw between the two pictures, inside of the index card, until it reaches the fold.
4. Secure the straw in place with a stapler or clear tape.
5. Hold the straw of the thaumatrope in the palm of your hands.
6. Begin to rub your palms together as fast as you can, making the thaumatrope flip back and forth.
7. Look at the pictures while the thaumatrope is spinning. What do you observe?

Questions to ask

- *What happens if you spin your thaumatrope faster? Slower?*
- *Have you seen other optical illusions? Where?*

What's The Science?

All animation works because of an illusion called apparent motion. The effect is created when a series of still images flashes quickly in front of your eyes with a break in between each image. Your brain blends the still images together, creating the illusion called apparent motion.

Try This

Use science vocabulary: Use related science words such as thaumatrope, animation, illusion, and motion as you talk and play together. Children learn new vocabulary words when they hear grown-ups use them in context.

Extend the activity: Create a flip book using the corners of an old notebook or several index cards stapled together. Draw a series of related images, one per page, with minor changes in the drawing each time. Rapidly flip through the pages to bring your own example of apparent motion to life!

Keep In Mind

- Children are natural scientists; let them lead the way in their experimentation! Encourage them to ask questions and make suggestions only when they are stuck/discouraged.
- The order suggested is not the only right or perfect way. Make adjustments based on the age, ability, and interests of the children.

Additional Resources

Eye: How It Works by David Macaulay

<http://studyjams.scholastic.com/studyjams/jams/science/human-body/seeing.htm>

