Thaumatrope

Materials: cardstock, scissors, hold puncher, markers, glue sticks, rubber bands or string

Background Information: A thaumatrope is a simple optical illusion toy that was popular in the 19th century. It is simply a piece of strong paper with an image drawn on both sides and attached to a stick or two pieces of string as a means to spin it. When spun, the two images appear to merge or blend due to the persistence of vision.

STEM Career Connection: Cartoonists use the same science as thaumatropes to draw cartoons. Toymakers can use this optical illusion in the development of toys.

Literature Connections: Animation!: Make Your Own Moving Images by Lesley Dawes, Magic Moving Images: Animated Optical Illusions by Colin Ord, Optical Illusions by DK

Challenge:

1. Gather materials.
2. Trace 2 circles of the same size on the piece of cardstock. You can use a lid, cup or another round object to make the circles the same size.
3. Then, cut out the 2 pieces of cardstock. Decorate each side of the paper with a complementary pattern (cloud on one side lightning on the other, or sun/moon, smile/frown).
4. Use the tip of your scissors or a hole puncher to punch two holes on opposite sides of the circle—left and right or top and bottom - depending on your design.
5. Secure the 2 papers together by wrapping a rubber band in each hole or cut two lengths of string about 10" long. Thread a piece of string through one hole and tie the ends together to form a loop. Repeat for the other hole.
6. They can test how many twists are necessary for the optical illusion to work.
7. Extensions: Record data about number of twists necessary for illusion to work. Try different designs or words. Can you create the illusion of a word when you put some letters on one side and the other letters on the other side?

Source:
https://www.auntannie.com/FridayFun/MiniMovie/