Minds in Motion

Terrific Thaumatrope

What's The Plan?

What makes your favourite cartoon characters dance, sing and play? Animation! Animation harnessed the power of optical Experience the magic of optical illusions by building your very own thaumatrope, and learn about the neuroscience behind these amazing devices.
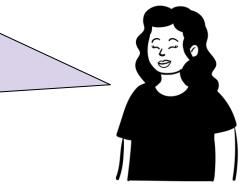
What You'll Need:

Here's a list of everything you'll need! Don't have something exactly? Get creative! Some of our suggested swaps are listed in Grey.

- A piece of cardboard you can cut
- Blank paper
- Markers
- Scissors
- Glue | Any Tape
- Skewer | Chopstick or pencil

What To Do:

1. Trace the cardboard circle onto your piece of blank paper twice, then cut these two circles out.

2. Come up with a simple picture you want to make on your thaumatrope. Typically images that have 2 components, such as a bird and a cage, or a shark and a blue ocean background, or a yellow circle with eyes and a mouth, work the best. Very complicated images often do not combine properly to form the whole picture in the illusion.

Check out these thaumatropes for ideas about what images you could use to create yours!
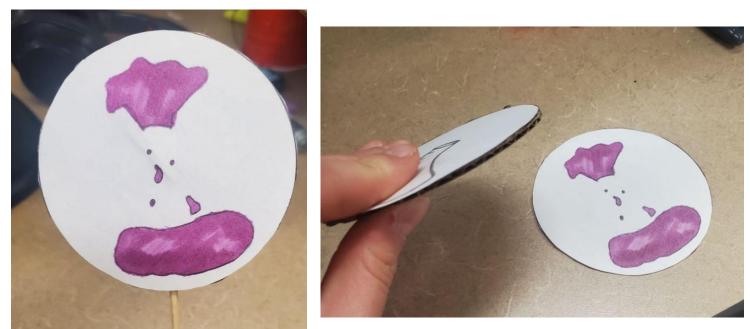
**Handy tip- you can draw your first image on the blank circle, then put your second circle over top of the first on a window to draw your second image. The light from the window will shine through the papers and let you see what your first drawing looks like while you make the second one to make sure they line up how you want them to.

3. Once you have both of your images drawn out, you can start to assemble your thaumatrope! Glue the circles you drew onto the cardboard circle, one on each side. Then VERY CAREFULLY poke

the skewer into the bottom of your thaumatrope and secure it with some white glue or tape. You can ask an adult for help with this step.

4. Test out your thaumatrope! Take the skewer between both hands and spin it. Carefully watch the pictures you drew combine as they spin. The faster you spin it, the more your two pictures should become one!
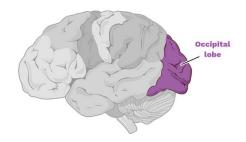
Why Did We Do It?

Here is a list of important words we use during the project!

- *Optical Illusions*: An optical illusion is an image that looks different from how it actually is. It works by tricking our brain into thinking it is seeing something that isn't really there. Some optical illusions make small things appear to be really big, still images appear to be moving, or as is the case with your thaumatrope, make 2 images appear to be one.

- *Neuroscience*: Neuroscience is a branch of science that looks at how the brain works, what the brain structures are, and how activities inside of the brain construct how we experience the world.

- *Persistence of Vision*: The neuroscience behind this optical illusion is called persistence of vision. It occurs because your brain holds a picture in your mind for a very brief moment after that image has actually been removed from your eyes. If you are shown another image while the first one is still being held in your mind, your brain can combine the two and think it is seeing both at once.

- *Occipital Lobe*: The occipital lobe is near the back of your brain, and is responsible for visual perception. It is one of the brain areas involved in persistence of vision, and helps us hold what we just saw in our mind.

- *Visual Cortex*: The occipital lobe works with a lot of other parts of the brain to create our perception of the world. Some of these areas are called visual cortices, and help us take the image of what we just saw in our occipital lobe, and make sense of it. The occipital lobe might tell us there is a red circular object on top of something green in front of us, but the visual cortices will tell us that it is a red ball in a field of grass.

How Did It Go?

We'd love to hear about all the amazing STEM projects you're doing! Show us your finished projects on any of the following social media platforms by tagging us!

Twitter: @MyMindsInMotion
Facebook: @mindsinmotion2014 || @ucactiveliving
Instagram: @ucalgaryactive

SCAN ME

Let us know how you felt about the project! Please click here or scan the QR code above to fill out a short survey!