snow city arts
virtual
learning

Workshop Duration: 25-45 Minutes | ALL LEVELS

VIRTUAL INSTRUCTION GUIDE

Workshop: *Thaumatropes*

Teaching Artist: Mikey Peterson

Learn the history and processes behind animation and pre-film animation machines and how animation works alongside its concepts, such as persistence of vision. You will then construct a thaumatrope.

snow city arts
virtual
learning

Workshop Duration: 25–45 Minutes | ALL LEVELS

TABLE OF CONTENTS:

OBJECTIVES & MATERIALS	Page 1
DIFFERENTIATED LEARNING METHODS	Page 2
BACKGROUND RESOURCES	Page 3
INSTRUCTION	Page 4–8
LEARNING STANDARDS	Page 9

snow city arts
virtual
learning

Workshop Duration: 25–45 Minutes | ALL LEVELS

OBJECTIVES:

You will learn:

- The history and processes behind animation and pre-film animation machines
- How animation works and its concepts such as persistence of vision
- How to construct a thaumatrope using minimal materials
- How to experiment with shape, color, line, texture, scale and position

MATERIALS:

- Blank paper
- Scissors
- Pencils (2)
- Cylindrical object or compass (to draw two circles)
- Tape
- Dark marker (e.g., a Sharpie)

snow city arts
virtual
learning

Workshop Duration: 25–45 Minutes | ALL LEVELS

DIFFERENTIATED LEARNING
Methods

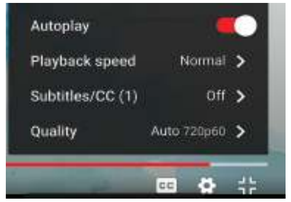
Instruction is provided in text and video formats, available in both Spanish and English.

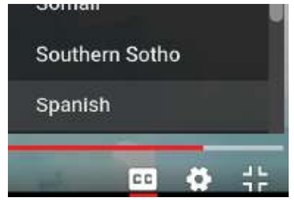
You may also work by printing this art-making guide.

YouTube can automatically create closed captions.

Click the [CC] button near the lower right corner of the viewer frame.
Please note: captions are generated by algorithms, so their quality may vary.

A variety of language subtitles are available for each video.





- **The drawn images can be as simple or as complex as necessary.** The animation process is what's most important!

- **The entirety of this workshop can be done at bedside.** If you need assistance, you can recruit a friend or family member to help draw, cut, and tape.

- **If you are visually impaired, you can act as the artistic director of this project.** Describe the imagery using your imagination to a friend or family member who can follow your descriptions to construct the final work.

snow city arts
virtual
learning

Workshop Duration: 25–45 Minutes | ALL LEVELS

BACKGROUND/RESOURCES

You will be introduced to these artists, art histories, movements and/or concepts:

Thaumatrope: A simple machine or toy that rapidly switches back and forth from two different image. Created by J.A. Paris in 1825, this machine predates many other animation machines.

Persistence of vision: An optical illusion in which the human eye continues to see an after-image of an object for a very short duration, even after the removal of that object.

Ding Huan: A Chinese engineer who, in 180 A.D., created a device which rotated sequential paintings through the rising heat of a lamp.

Phenakistoscope: An early animation device in which one looks through cut-out slits in a mirror to see images animate.

Zoetrope: An early animation device similar to the phenakistoscope, only the disc is positioned on its side like a carousel. The cut-out slits are positioned in front of the viewer.

snow city arts
virtual
learning

Workshop Duration: 25-45 Minutes | ALL LEVELS

INSTRUCTION:

Today we will be making **thaumatropes**, early animation machines that predate photography and film.

The thaumatrope is a simple machine or toy that rapidly switches back and forth from two different images.

Persistence of Vision

When we watch these images in rapid succession, we experience what is known as **persistence of vision**.

Persistence of Vision

An after-image appears where we've seen both images simultaneously.

The optical illusion happens because our eyes and brains can't keep up with each image changing.

1825
J.A. Paris

The thaumatrope toy was invented in 1825 by English physician J.A. Paris. It was a precursor to other animation machines.

snow city arts virtual learning

Workshop Duration: 25-45 Minutes | ALL LEVELS

INSTRUCTION CONTINUED:

180 A.D. Ding Huan

The concept of multi-framed animation machines like the thaumatrope was first developed in China in 180 A.D. by inventor **Ding Huan**.

180 A.D. Ding Huan

Ding Huan created a device which rotated sequential paintings through the rising heat of a lamp.

Phenakistiscopes

In a **phenakistoscope**, you look through the cut-out slits in a mirror in order to see the images animate.

Phenakistiscopes

The slits are used in order to break up the images so they do not blur together. This is similar to shutter speed today.

Zoetropes

Zoetropes use the same technique, but the disc is positioned on its side like a carousel with the slits positioned in front of the viewer.

Unlike zoetropes, thaumatropes only consist of two images as opposed to multiple. Now, let's make our own!

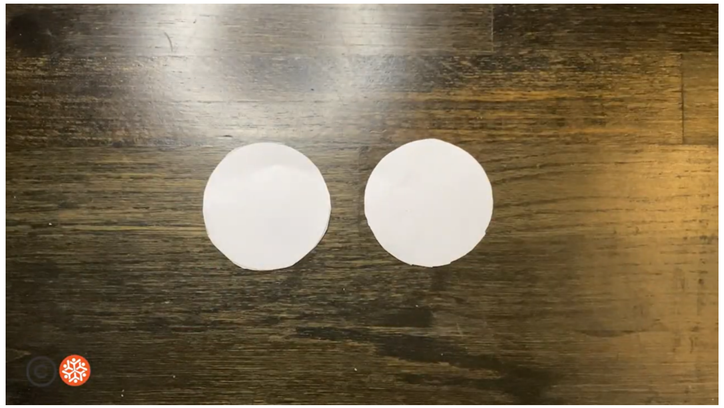
snow city arts
virtual
learning

Workshop Duration: 25-45 Minutes | ALL LEVELS

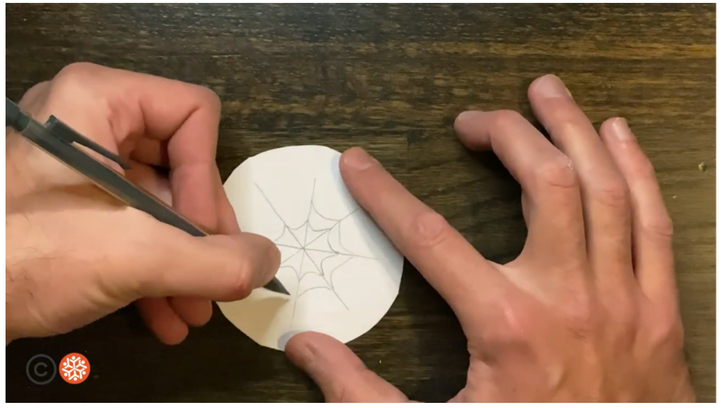
INSTRUCTION CONTINUED:

Use your cylindrical object to trace two circles of the same size on white paper.

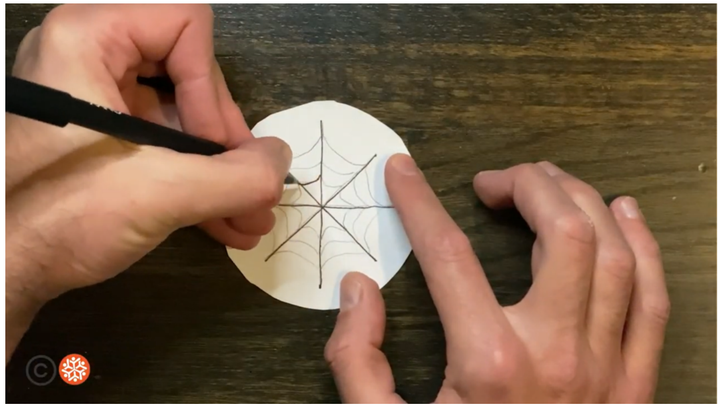
Cut out the circles.



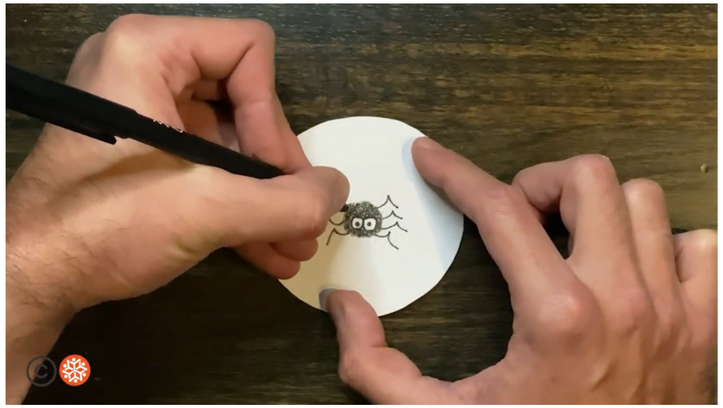
Think about what two images you want to draw for your thaumatrope. For this workshop, we'll draw a spider on a web.



Begin drawing your images. Use a pencil during the step in case you need to erase.



Once you're done drawing your images, use a dark marker to trace over the pencil.



Make sure that your images are to scale with each other, as well as lined up in the appropriate space.

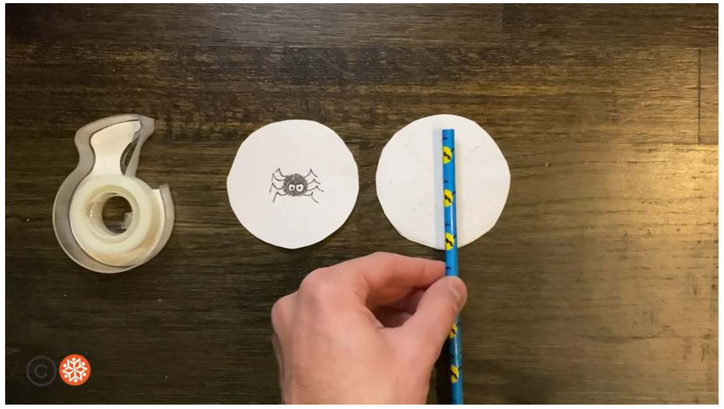
snow city arts
virtual
learning

Workshop Duration: 25-45 Minutes | ALL LEVELS

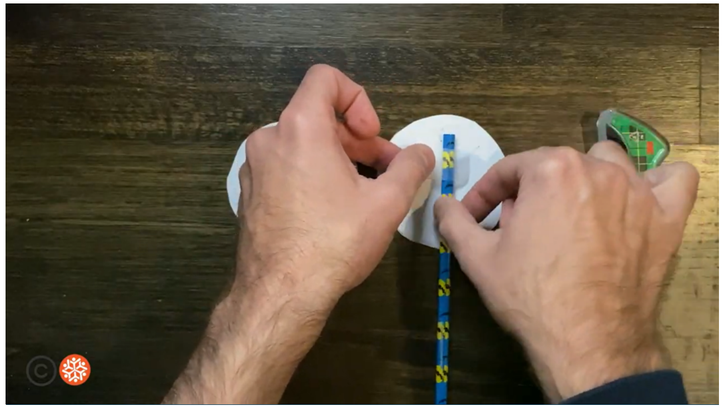
INSTRUCTION CONTINUED:

A nice trick to guarantee your images are aligned is to stack them together, then hold them up to the light.

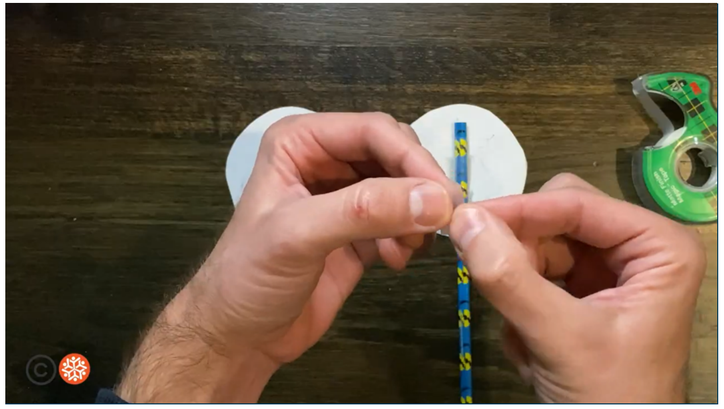
Next, grab the tape and the second pencil. We will use the pencil as the thaumatrope's handle.



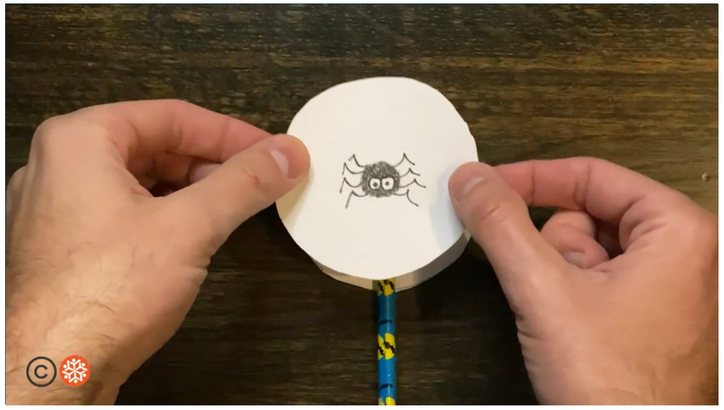
Place your first paper circle image side down and lay the pencil down on top of it. The top of the pencil should fall a little below the edge of the paper circle.



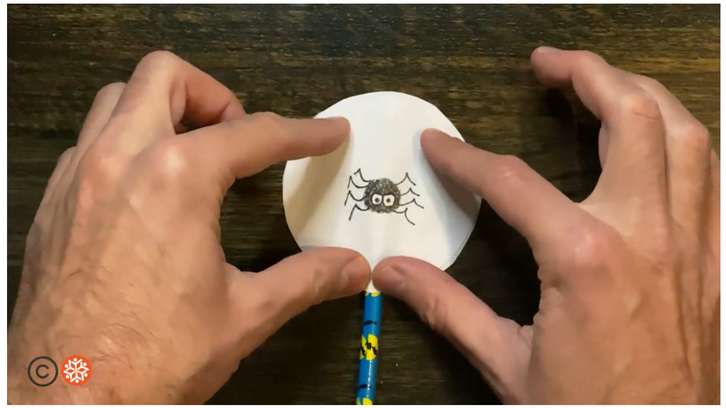
Use three strips of tape to tape the pencil and paper circles together.



Then create a couple of looped tape pieces and stick them near the edges of the circle.



Place the second paper circle on the top of the first circle. Make sure that your images line up.



Gently press down in order for the tape to hold both circles together, but not too hard where you crease the paper.

Congrats! You've made the thaumatrope. Now let's take it for a spin!

snow city arts virtual learning

Workshop Duration: 25–45 Minutes | ALL LEVELS

LEARNING STANDARDS

This workshop is aligned to the following state and national anchor standards. It can be differentiated for learners at every grade level. (For arts performance standard alignments at specific grade levels, feel free to email **programs@snowcityarts.org**.)

ILLINOIS ARTS LEARNING STANDARDS

Anchor Standards: Creating

- **CR1.** Generate and conceptualize artistic ideas and work.
- **CR2.** Organize and develop artistic ideas and work.
- **CR3**. Revise, refine, and complete artistic work.

Anchor Standards: Connecting

- **CN11.** Relate artistic ideas and works with societal, cultural, and historical context to deepen understanding.

COMMON CORE STATE STANDARDS

English Language Arts: College and Career Readiness Anchor Standards

Language

- **CCSS.ELA-Literacy.CCRA.L.6.** Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

snow city arts
virtual
learning

If you are interested in **receiving school credit** for the work you have completed in this workshop or if you would like to **have your artwork displayed** in a Snow City Arts exhibition space or virtual gallery, please visit https://snowcityarts.org/consent-releases/

Contact us at programs@snowcityarts.org if you have questions, would like to offer feedback, or would like to continue working with us virtually.

snow city arts
virtual
learning

Workshop Duration: 25–45 Minutes | ALL LEVELS

snow city arts

1653 W Congress Pkwy
Chicago, IL 60612

Phone: (312) 942-6991
Fax: (312) 942-6859
snowcityarts.org

Snow City Arts inspires and educates children and youth in hospitals through the arts.

Contact us if you have questions,
or would like to offer feedback at
programs@snowcityarts.org