Overview: Learning and Activity Sequence for Grades 3-5
Can be adapted for Grades K-2
Suggested Time to Complete: 4 Sessions of 30-45 minutes

The Goal: Students will be introduced to the basic ideas of animation by observing student produced animations and short videos and then creating their own phenakistoscopes or flip books using ideas and images and putting them in a sequence.

The Objective: Students will understand that in animation, the illusion of movement is created by manipulating a sequential set of images. Animations tell a story through those images. They will demonstrate their understanding through making their own phenakistoscope or flip book.

Overview:

In this sequence of three lessons, students will learn basic principles of animation, review techniques and create a simple hand-made phenakistoscope or flip book.

- **Lesson 1:** Watch NYC Public School Film Festival animation selections to

explore different interpretations and techniques of animation.
- **Lesson 2:** Explore the history of the phenakistoscope and early animation.
- **Lesson 3 and 4:** Learn 'how to' build your own phenakistoscope and or a flip book, using the materials and instruction below. View examples and videos.

Materials Needed:

● phenakistoscope template (you can drawer a circle using a bowl, a protractor or any round object in your home)
● cardstock
● scissors
● pencil
● colored pencils or thin-tip markers
● pencil with eraser to mount
● thumbtack
● mirror
● stapler (for Flip Book)

DISCLAIMER: *Resources in these activities contain external internet links. In other words, once a student links to a video or to one of the recommended images, they are on an external site and have access to whatever the site has placed online. As with all independent student engagement, it is strongly recommended that parents or guardians actively supervise each student's independent research.*

SESSION 1: What is Animation?

Lesson Objective: Watch NYC Public School Film Festival animation selections to explore different interpretations and techniques of animation.

Students will watch the New York Public School 2021 Film Festival here and explore the different techniques of animation. The first section of the film festival is animation and it begins @ 2:47.

Animation Titles
X Morph 2021
The Future Is Female
Is This Farming
To Every End
Quarantine
Self Confidence

DISCUSSION:
There are four basic techniques used in animation.

- Drawn animation.
- Cut-out animation.
- Model animation or stop motion animation.
- Computer animation or computer generated imagery (CGI)

Students can break out into six groups and assign each group one animation to review. Have students watch the animations again to answer the following questions.

1. Art means something different to every person that comes across it. In your group, discuss what this piece means to you and how your interpretations are different.
2. What techniques did you notice?
3. How does the music help to set the tone?
4. What stood out visually in these animations? Colors, shapes or objects that helped to set tell the story?
5. If you were to change the ending what would it look like?
6. If you could meet the student artists who created this animation, what would you ask them about the story that they chose to tell and how they chose to tell it?

SESSION 2: What is a Phenakistoscope?

Lesson Objective: Explore the history of the phenakistoscope and early animation.

Phenakistoscope, pronounced fenno'kisto skope

DISCUSSION:
Animation is a technique through which pictures seem to move. Before there were movies, people made animated toys to play with. The phenakistoscope is the first animated toy that was invented in 1832 by Joseph Plateau. A phenakistoscope is a circle with a series of drawings that gradually change from one frame to the next so that when the circle turns the pictures appear to move, or be animated. Today, the GIF is a very popular way to produce looping animations of drawings or photographs to tell a quick story.

ACTIVITY:
1. First, watch this short video from the Exploratorium in San Francisco about why our eyes see 'moving pictures.' Watch:
https://www.exploratorium.edu/video/whirling-watcher-activity-whats-going

2. Next, look at examples of the first phenakistoscopes, also called the "Magic Wheel." Watch: https://publicdomainreview.org/collection/phenakistoscopes-1833

3. In 1878, Eadweard Muybridge used photography to study human and animal motion. He took a series of time-lapse photographs of a galloping horse to see whether all four hooves ever left the ground at the same time. Watch this short documentary and Muybridge's experiments, SLICES OF TIME, from the San Francisco Museum of Art. Watch:
https://www.sfmoma.org/watch/slices-time-eadweard-muybridges-cinematic-legacy/

4. In 1987, Steve Wilhite invented the GIF (Graphics Interchange Format) which produced looping animations of drawings or photographs to tell a quick story.

Go to GIFs4Kids and pick out your favorite from the list!
https://sites.google.com/view/gorogueedu/gifs4kids?authuser=0

SESSION 3 and 4: Build Your Own Phenakistoscope or a Flip Book

Lesson Objective: Learn 'how to' build your own phenakistoscope, using the materials and instruction below. View examples and videos.

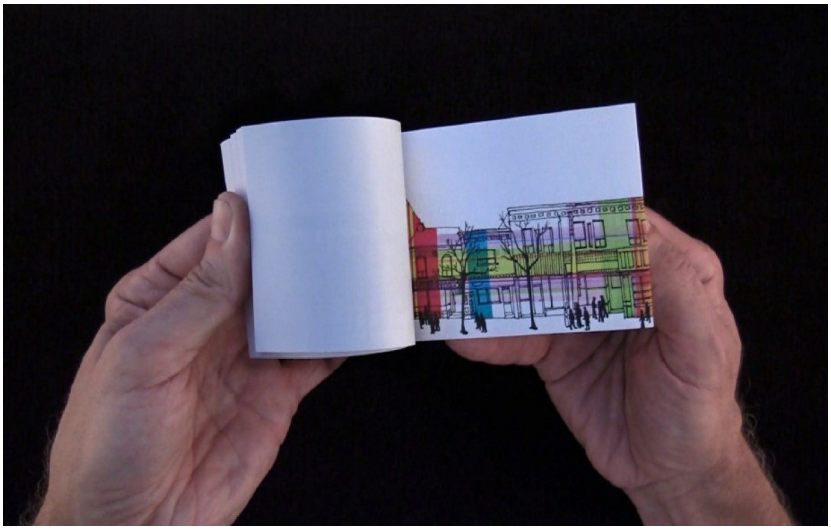
DISCUSSION:
One reason that we see animations as moving pictures is an optical illusion known as 'persistence of vision.' This means that in our mind and eye, multiple separate images blend into a single image. For your phenakistoscope, you will make a series of pictures that will change gradually. Our example will show how to make a jumping horse but you can use an animal, object or even create a cartoon that resonates with you.

First, watch this "how to' video on making a phenakistoscope.
https://www.youtube.com/watch?v=2rzwdRqsuVM

ACTIVITY 1: Phenakistoscope

1. Trace a circle on cardstock, a manila folder or another sturdy drawing paper. The circle should be approximately 5-9 inches in diameter.
2. Cut around the phenakistoscope and cut out 12 small slots along the edge. Don't cut the radii that converge at the center. These visually separate the 12 "frames" of the phenakistoscope.
3. Use a pencil to draw a 12-frame animated sequence around the phenakistoscope. In this example, we are using a horse. **Loop** – a short animated sequence that begins and ends on the same frame and shows a complete action, for example, a horse jumping and then landing.
4. Tip: The closer the animation stays towards the edge of the disc, the easier it will be to view.

5. Preview your animated sequence (before coloring it in).
    a. Use the thumbtack to secure the center of the phenakistoscope to the eraser on a pencil. Keep it loose enough, so you can spin the disc.
    b. Stand in front of a mirror, with the phenakistoscope between you and the mirror.
    c. Face the side of the phenakistoscope with your drawing towards the mirror and look at the blank side of the phenakistoscope.
    d. Look through one of the slits into the mirror, until you can see the reflection of your drawing.
    e. Spin the phenakistoscope (as you peer through the slit) at a pace that allows you to see the animation (not too fast and not too slow).
6. When you are satisfied with your project, color it in.



Watch the New York Film Academy's *Flipbook Animation: Techniques & Mind-Blowing Examples* to see different kinds of flipbooks.
https://www.nyfa.edu/student-resources/flipbook-animation-techniques-and-examples/

ACTIVITY 2: Flip book

1. Watch How to Make a Quick and Easy Flip book **https://www.youtube.com/watch?v=29SCiHN9zCI**
2. Stack 3 pieces of paper and fold them in half. Cut down the fold.
3. Fold each side in half again. Cut down folds.
4. Stack cut panels of paper and fold them in half.
5. Staple three times along the fold.
6. Fold over the stapled side and cut paper evenly.
7. Unfold and give it a flip.
8. Draw circles on the bottom of each page moving them slightly on each page.
9. Flip your book to watch your animation.

Alignment to the NYC DOE Blueprint for Teaching and Learning: Moving Image **Gr. 5 Benchmark Indicators**

Making Moving Images

Through hands-on work, learn basic aspects of filmmaking production

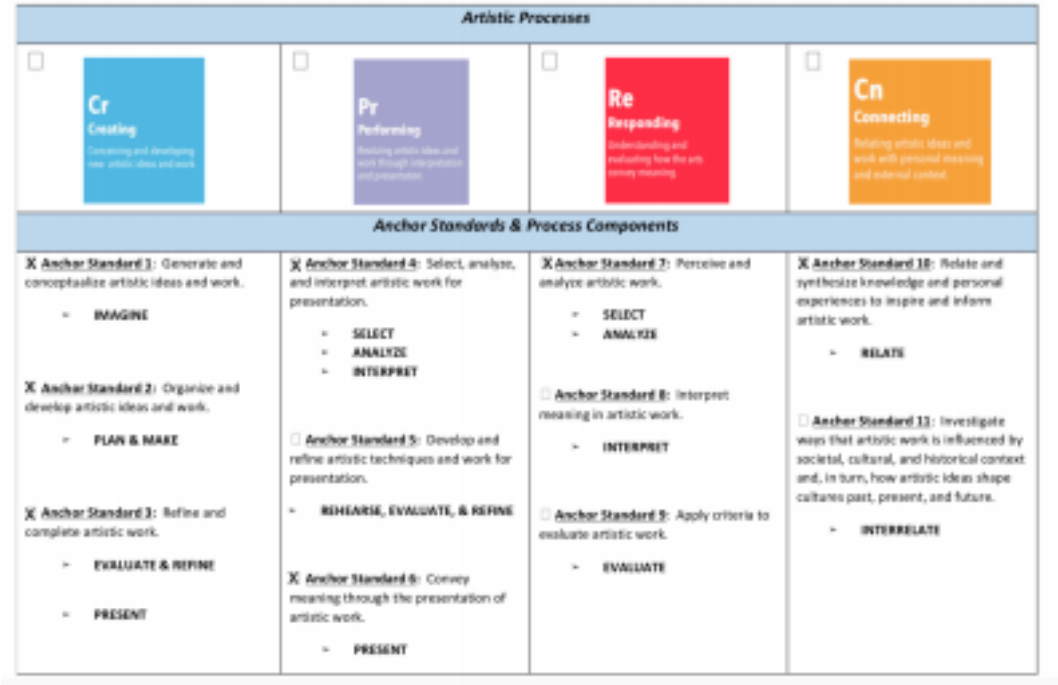
Media Literacy

Comprehend that films are made up of moving images
Develop critical viewing skills
Understand basic vocabulary terms of animation

Making Connections

Understand that film can be used in a variety of contexts—cultural, personal, historical, and technological.
Develop a deeper understanding in other content areas by creating animation projects.

Alignment to the NYS Learning Standards for the Arts



Artistic Processes			
Cr Creating	Pr Performing	Re Responding	Cn Connecting
Anchor Standards & Process Components			
X Anchor Standard 1: Generate and conceptualize artistic ideas and work. - IMAGINE X Anchor Standard 2: Organize and develop artistic ideas and work. - PLAN & MAKE X Anchor Standard 3: Refine and complete artistic work. - EVALUATE & REFINE - PRESENT	X Anchor Standard 4: Select, analyze, and interpret artistic work for presentation. - SELECT - ANALYZE - INTERPRET Anchor Standard 5: Develop and refine artistic techniques and work for presentation. - REHEARSE, EVALUATE, & REFINE X Anchor Standard 6: Convey meaning through the presentation of artistic work. - PRESENT	X Anchor Standard 7: Perceive and analyze artistic work. - SELECT - ANALYZE Anchor Standard 8: Interpret meaning in artistic work. - INTERPRET Anchor Standard 9: Apply criteria to evaluate artistic work. - EVALUATE	X Anchor Standard 10: Relate and synthesize knowledge and personal experiences to inspire and inform artistic work. - RELATE Anchor Standard 11: Investigate ways that artistic work is influenced by societal, cultural, and historical context and, in turn, how artistic ideas shape cultures past, present, and future. - INTERRELATE