

Nicole Emmons | Session 1:

Let's Animate!: Research and Development

List of Required Supplies: Scissors, Compass or Jar to make circle, Ruler, Markers or colored pencils/other coloring implements, pencil, eraser, copy paper, string, glue (light duty, Elmers- type is fine.) Single Hole punch, or can use a needle to start the hole and widen with a pencil or pen or other such object. Notebook preferably with 3 ring binder and / and: pockets or a large envelope or Ziploc bag that you keep with your notebook to keep all of your course materials: notes, activities, vocabulary pages and ART WORK together.

Space/Facility Requirements: Table or floor space.

Student Time Required: 60 minutes (Introduction), 30 minutes (Activity), 30 minutes (Reading, Analysis, and Reflection)

Additional Links:

https://www.youtube.com/watch?v=dIUggq_uvyM

<https://www.youtube.com/watch?v=46Mlr4hvW-E>

All words in bold are considered essential vocabulary for this course. Their definitions are listed under each word.

Research and Development is the phase of production where you are developing the concept of your film, doing research on your topic. I am structuring this course around the typical phases of film production. In this production, our research and development involves learning about animation!

Today:

1. Intro (research & development)
2. ACTIVITY: thaumatrope- bird in cage
3. Vocabulary, (in document) brief history of animation

Introduction To Let's Animate!

The most important thing to understand with **animation**, is that it is an art form that exists in time. Animation is made up of many beautiful images, objects, and considerations, with often many artists contributing countless hours of work, and the art of animation itself is the combination and culmination of all of these pieces.

Which is to say, do not get hung up on just one **frame**, or individual image of the film, one puppet, one prop or set or scene of your piece. The art of animation is the effect created by watching the images of all of these things together flit by our eyes 24 **frames per second**.

Persistence of Vision

Persistence of Vision is the **optical phenomenon** that makes it possible for us to perceive a group of **still images** in a **timeline** as movement. If you are near a lamp or in door light, such as a kitchen light, stare at this light for up to 5 seconds or so, then look away quickly towards a wall or darker area of the room. (I shouldn't have to say this, but DO NOT STARE AT THE SUN for this exercise or you could permanently damage your eyes.)

What do you see?

Usually, you will see a shape that resembles the shape of the light that you just stared at. You may see an afterimage of the light itself. I just stared into the flashlight of my phone and it was quite bright and I am still seeing an after image over a minute later! This is **persistence of vision**, and this is what is happening when you watch moving images.

NOTE: *There are contradicting theories amongst the film and scientific community about this being the basis of our ability to perceive movement. On your own, you may research what other theories have been presented, as well as learning about the history of cinema and animation. Please look at sources beyond Wikipedia. Here is one example of a reputable site that can provide more information: <https://www.scienceandmediamuseum.org.uk/objects-and-stories/very-short-history-of-cinema>*

Activity: Make your own Thaumatrope

Thaumatrope is an optical toy that was popular in the 19th century. A disk with a picture on each side is attached to two pieces of string. When the strings are twirled quickly between the fingers the two pictures appear to blend into one due to the persistence of vision.

Reading, Analysis, and Reflection

Completed Video: <https://www.youtube.com/watch?v=46Mlr4hvW-E>

How to Video: https://www.youtube.com/watch?v=dIUggq_uvyM

Step-by-step Instructions

1. Cut (2) 3" circles out of copy paper. (use a compass OR can use a jar or similar item from kitchen and trace, does not have to be exactly 3")
2. Cut a third 3" circle of thin cardboard (like cereal box thin) or cardstock. (just make this circle the same size as the paper ones.)
3. Draw a bird in the center of one circle.
4. In the exact same area of the other piece of paper, draw a bird cage that the bird you just drew would be able to fit inside of.
5. Glue both copy paper circles to the cardstock or cardboard circle, so that the image of the bird is facing out on one side, and the image of the cage is directly opposite the bird on the other side of the cardboard facing out and upside down. Now you should have one circle with a drawing of a bird on one side, and an upside down cage on the other side in the same area of the circle.
6. Punch 1 hole through both sides of the circle, directly to the left and right of the bird, and towards the edge of the circle. Leave enough room between the hole and the edge so that you can attach a string to each side of the circle (do not connect them to each other).
7. Make a knot (that does not rip the paper when you tighten it) by threading the string through the hole and tying it to the paper. Do the same thing on the other side.
8. Twist the string backwards and forwards between your thumb and fingers and the image will flip backwards as well.

Analysis: Write down your answers in your Animation Journal/Class Notebook.

- What do you see?
- Why do you think you see this?
- What other image combinations could you use that would create interesting visual statements?
- What worked and didn't work, and why?

Option: Try one on your own.

Keep it simple!

For projects like this, the finished art is made up of several elements:

1. how clear each individual image is,
2. the meaning that the combination of the two images creates,
3. the vehicle of the circle itself and how well it operates, which is determined by how well it was constructed.

Reflection: Animation is an art form that is created by the relationship of images. Just like in the thaumatrope activity, the more care and attention you put into creating your animation, the more successful it will be.

Extended Learning: In **filmmaking**, which encompasses animation and video, and all moving image media that you see when you watch TV, movies in theaters or at home, streaming movies and tv shows, etc; you are seeing 24 individual images, or frames, per second (In some cases 29 frames per second will be used.) When you pause a video, that is one frame. Play it again for a few seconds and hit pause again. That is another frame. Notice how the position of the elements in the frame have changed. When we create animation we are able to repeat frames. For this class we are going to use the frame rate of 8 frames per second, which holds each image for 3 frames. Many professional stop motion studios shoot at 12 frames per second, which holds each image for 2 frames, and some shoot at 24 frames per second, which holds each image for one frame. In the software we are using you can change the frame rate in the settings menu, and then you will be able to see how this affects your movement.

Prepare: Between now and next class, spend some time analyzing some animation that you enjoy. Watch for **juxtaposition** of images (placement of images side by side,) as well as **shots** (a sequence of uninterrupted frames that runs for a period of time.)

Notice how the placement and order of these can change or enhance the meaning of the overall content. This helps us to understand editing, as well as animation. Be sure and write down your observations. Use your phone or a kitchen timer and find out: How long until the shot changes and we see a new angle or image? How long does an animated character go without: moving his hand, blinking, turning his head? How long does it take a character to perform any of these actions? What seems to be the average shot length in this show? Being able to observe and analyze is a key component of being a good filmmaker, as well as a good animator.