

# Zoetrope

## The Assignment: Make an animation for a zoetrope

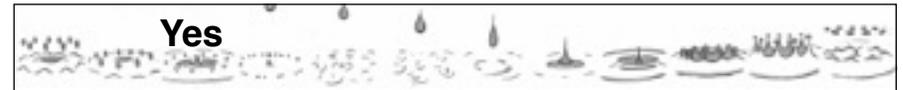
Step 1- Read the rubrics so you know how to get the A! Create a *minimum* of 2 story boards using the attached forms. You have 2 choices to make. The first is do you want to make a 12 or 15 frame animation? Second you have your choice of Pose to Pose or Straight Ahead story boards for developing your idea. Make detailed notes to help you think through the animation and as reference when you start step 2. present your ideas in class to your group. Grade your effort using Rubric 1: Initial Project / Storyboard.

Step 2- After presenting your ideas to the class, choose one to animate full size. Do a rough draft that you can put in the Zoetrope to try it out. You will most likely need to make pacing and other changes to make it work. Don't be surprised if you need to make a couple of drafts to master it. Once you have refined your idea make a final copy to show the class. If there is time start another one! Don't forget to put your name on the back. Grade your final efforts using Rubric 2: Execution.

**\*Important:** We are animating for a *counter clockwise spin*. You will animate your action left to right just like you read. In a counter clockwise zoetrope spin, if you have more objects than frames the objects travel left (same direction as the spin), fewer objects than frames will travel right (opposite the direction of the spin). ***The last frame of the animation should be the next transition to the first frame to complete the loop!***



In the above example the water drop is animated left to right. This is the standard for clockwise rotation with zoetrope animations. As you can imagine, animating backwards adds an additional level of complication. By student request we will **not** be using this method. (original drawing by Ruth Hayes)



In the above example the water drop is animated left to right. This is how we will be animating our zoetrope strips. Although it goes against the traditional design of the zoetrope, it is much easier to plan your animation when using a counter clockwise spin.

**History:** The zoetrope was invented in 1834 by William Horner, who originally called it a Daedalum ("wheel of the Devil"). It was based on Plateau's phenakistoscope, but was more convenient since it did not require a viewing mirror and allowed more than one person to use it at the same time. Horner's invention strangely became forgotten for nearly thirty years until 1867, when it became patented in England by M. Bradley, and in America by William F. Lincoln. Lincoln renamed the Daedalum, giving it the name of "zoetrope," or "wheel of life."

**How it works:** The zoetrope is the third major optical toy, after the thaumatrope and phenakistoscope, that uses the persistence of motion principle to create an illusion of motion. It consists of a simple drum with an open top, supported on a central axis. A sequence of hand-drawn pictures on strips of paper are placed around the inner bottom of the drum. Slots are cut at equal distances around the outer surface of the drum, just above where the picture strips were to be positioned.

To create an illusion of motion, the drum is spun; the faster the rate of spin, the smoother the progression of images. A viewer can look through the wall of the zoetrope from any point around it, and see a rapid progression of images. Because of its design, more than one person could use the zoetrope at the same time.

-source-<http://courses.ncssm.edu/gallery/collections/toys/html/exhibit10.htm>

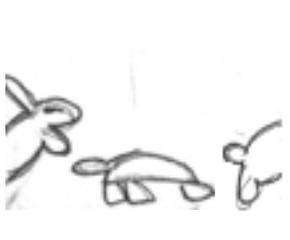
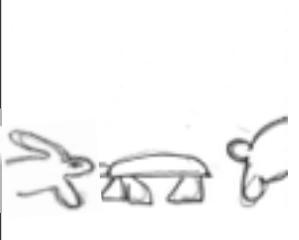
**Resources:** <http://www.stephenherbert.co.uk/wheelZOETROPEpart1.htm>, [https://youtu.be/5\\_8fX-N3Ji4](https://youtu.be/5_8fX-N3Ji4), <https://youtu.be/eXgPPAhMuG8>

# Zoetrope Pose to Pose Storyboard:

Name \_\_\_\_\_

Block \_\_\_\_\_

Date \_\_\_\_\_

<p>concept title: Tortoise and the Hare</p> <p>total frames: 15</p> <p>notes: 15 tortoises, 14 hares. This will cause the hare to move right across the frame. Tortoise always walks center frame. Alt idea- have 16 tortoise so it walks to the left.</p>					
<p>concept title:</p> <p>total frames:</p> <p>notes:</p>					

Frame 1. Tortoise walks in center frame. Hare begins its jump- butt of hare is in frame 15.

Frame 3. Tortoise walks. Hare fully launches itself.

Frame 6. Tortoise walks. Hare's jump peaks. Front feet touch down by frame 10 or 11.

Frames 12-14. Tortoise walks. Hare finishes landing and sets up for next jump (anticipation).

Frame 15. Tortoise walks in center frame. Hare begins its jump- front of hare is in frame 1.

**Zoetrope Pose to Pose Storyboard:**    **Name** \_\_\_\_\_ **Block** \_\_\_\_\_ **Date** \_\_\_\_\_

concept title:  total frames: notes:					
concept title:  total frames: notes:					
concept title:  total frames: notes:					



**15 Frame Zoetrope Straight Ahead Storyboard:** Name \_\_\_\_\_ Block \_\_\_\_\_ Date \_\_\_\_\_



Notes: Detailed notes should go here. These should include any details that cannot be rendered in the thumbnail size story board, any alternative plans, and any complications you think you may need to focus on. For example the above: **Details-** Turtles head should turn to follow the rabbit as it leap over. The rabbits rendered in the later frames are too big. Keep them a consistent size and make sure there is room for the rabbit and turtle to be on the ground at the same time. **Alternatives-** have turtles feet walk too. Perhaps have a tuft of grass move across the turtles ground to help it look like he is walking. **Complications-** the only time there will be one rabbit in the frame is when it is in the air. When it is on the ground it will be split between frames.

Notes:

Notes:

## Rubric 1: Planning / Story Board

Category	4	3	2	1
<b>Illustrations</b>	Storyboards have clear, detailed illustrations. More works than required.	Storyboards have clear illustrations.	Storyboards illustrations are lacking detail or are sloppily rendered.	Storyboard's illustrations are lacking crucial details or are difficult to understand.
<b>Notations</b>	Storyboards have clear, thorough, useful explanatory notes.	Storyboards have clear explanatory notes.	Storyboards have few or incomplete explanatory notes.	Storyboards have difficult to follow or no explanatory notes.
<b>Feasibility</b>	Storyboard's concepts and plan work well within the limitations of the Zoetrope.	Storyboard's concepts and plan work within the limitations of the Zoetrope with limited modifications.	Planned design will require significant modification to work within the limitations of the Zoetrope.	Planned designs are unworkable within the limitations of the Zoetrope.
<b>Concept</b>	Planned work's are original, novel, and have a unique approach.	Planned works are somewhat novel or unexpected.	Planned works are somewhat obvious or expected.	Planned works are obvious, derivative, or expected.

## Rubric 2: Execution

Category	4	3	2	1
<b>Complexity</b>	Animation effectively uses more or less objects than openings to create cross frame movement and effectively uses canvas. Animations play with depth and or multiple moving objects	Animation effectively uses the canvas. Animations play with depth and or multiple moving objects.	Animation deals with one object that makes limited use of the canvas	Animations are static and make limited use of the canvas. Lacking depth. Deals with one object.
<b>Animation</b>	Animation flows smoothly. Transitions are seamless. Illustrations are well executed and refined.	Animation flows relatively smoothly. Transitions may be noticeable. Illustrations are clear and consistent.	Animation somewhat choppy Transitions noticeable. Illustrations are not well drawn or executed.	Animation choppy and difficult to follow. Transitions noticeable. Illustrations are not poorly drawn or executed.
<b>Entertainment Value</b>	Animation provides original and unique idea. Uses humor or novelty to hold viewer's attention.	Animation provides unexpected idea. Uses humor or novelty to hold viewer's attention.	Animation provides somewhat predictable results. Limited novelty or humor.	Animation is predictable. Lacks novelty or humor.
<b>Materials (not always used)</b>	Novel, original, and unexpected use of required materials	Effective use of required materials.	Animation uses required materials.	Limited use of required materials.

**\*2 bonus points for political or social message (Don't get so focused on the bonus that you loose other points! It has to animate well!)\***