



LESSON 20 LEVEL C THINGS THAT GO

OLD-FASHIONED ANIMATION

WHAT YOU WILL LEARN:

making sequential drawings to suggest motion

WHAT YOU WILL NEED: small unlined note pad of about 30 pages; soft lead pencil or black fine-line pen; strip of white paper about 7.5 cm (2 1/2 inches) by 1.5 m (3 feet); a clean, empty, large round carton, 30 cm (1 foot) in diameter such as an empty ice cream container, found at an ice cream store; x-acto or mat knife; turntable (for example, a lazy Susan); masking tape

TIPS: To divide the round carton into 16 parts, mark points opposite each other. Put a mark halfway between those points. Now you have fourths. Put a mark halfway between each of those 4 points and you have 8. Mark between the 8; you have 16 parts!

WORD TO LEARN:

Zoetrope: zo' eh trop a 19th century device for animating pictures.

person providing some entertainment for your friends and family in a time long before the technology of today.

A. To make a Flip Book:

1. Draw a simple shape on the *last* page of a small notepad. It could be a star that will get larger and more solid; a ball that will bounce; an eye that will wink; or some other object that can change in some way.



Animation by Mitchell Rose

GETTING STARTED: You will explore two early kinds of moving pictures that people enjoyed more than one hundred years ago, before color movies, TV, or DVD were even dreamed of. One is the Flip Book; the other is the Zoetrope. Both involve changing a series of images slightly in order to create a sequence that will give the illusion of movement. You can imagine yourself as a young



2. On each preceding page, trace the shape with a small but important change to show action. Draw more than 20 pages. Change the part that moves a little more on each page.

3. Flip the pages between your thumb and pointer finger. The object will seem to move. The faster the pages flip, the faster the shape will move. The more drawings; the smoother the action will be.



Teacher Demonstration

B. To make a Zoetrope:

1. Turn the round carton upside down. About half way between the bottom and top of the carton, mark off the circumference (the distance around the middle) into about 16 equal parts. (see Tips)

2. Ask for permission to do this step by yourself. Cut a vertical slot 5cm. x 5 mm. (2" x 1/4") at each mark. Be careful with the knife. . .fingers are more easily cut than cardboard!

3. Fasten the carton to the turntable with masking tape. Be sure it is centered so it turns smoothly.

4. Check to see that your paper strip is long enough to to curve around the inside of the carton. The ends should just meet, but not overlap.

5. Put the strip inside the carton and make a light mark beneath each slot. This will help you make your drawings with the correct spacing between them.

6. Decide on the action . .a frog jumping, a mouth laughing, a plane or train approaching, or another simple movement.

7. Draw each unit between the marks you made on the strip. Show a slightly changed view in each space until the whole sequence completes the action.



Zoetrope Student Demonstration

8. Put the strip inside the zoetrope carton around the bottom. Spin the turntable as you peek through the slots. You should see your pictures moving.

CLEAN UP: Throw away the cardboard scraps. Tidy up your work area. That's easy, isn't it?

TALK ABOUT IT: Look for smoothness of action. Should there have been more or less change between your pictures?

MORE IDEAS: Make another flip book or zoetrope strip, this time in color.

CONNECTIONS: The zoetrope was invented in 1834, but not manufactured until 1867. It was introduced as a collar box, containing 10 men's shirt collars and 3 sets of pictures for the zoetrope. (Collars weren't sewn on a shirt as they are today) When the collars were removed from the box, the box became a zoetrope. The whole package - box, collars and pictures - cost twenty cents!

1. Learn more about the Zoetrope. Find out about other light-and-motion machines that came before the motion picture camera: the thaumatrope; phenakistiscope, kaleidoscope and the magic lantern, for a start . Ask a grown-up to say these words!

2. Learn about Walt Disney and Mickey Mouse and the early Looney Tunes animated cartoons . Then compare them with today's TV cartoons and the more recent digitized animated films.

3. Read about Edward Muybridge and the sequences of photographs he took to learn about the gait of horses.

