Art Masterpiece: “Relativity” by M.C. Escher

Keywords: One-Point Perspective, Vanishing Point, 3-dimensional, Points of View and Horizon Line

Grade: 6th

Activity: Creating a 3-Dimensional Drawing of Cubes

Meet the Artist:

Maurits Cornelis Escher was born in Netherlands in 1898. He was a sickly child and placed in a special school at the age of 7. He failed the second grade, but was very creative and loved finding shapes in clouds; he excelled at drawing. He never graduated from high school.

He tried to enroll in the School of Architecture and Decorative Arts in Haarlem. He showed his sketchbook to the graphic arts teacher who convinced him to join the graphic arts program.

He soon found that he loved working from his imagination, although his art was always reality based and never became abstract. At 9 he made a trip to Spain and saw the Alhambra Palace in Grenada. The 14th century Moorish palace, almost entirely decorated with beautiful tiles in complex patterns, fascinated Escher and he began to incorporate some of these repetitive elements into his own work. His early tessellations date from this period. A tessellation is created when a shape is repeated over and over again, covering a plane without any gaps or overlap, literally a paving of tiles. A checkerboard is an example of a simple tessellation.

Escher began to experiment with all the possible combinations of shape, color and symmetry. For someone who was not good at math he became remarkable skilled at working out complex formulas in his artwork and was often invited to lecture at scientific gatherings. He used unusual perspectives, such as the bird’s eye view seen in “The Tower of Babel”.

Escher explored the relationships between two dimensions and three dimensions. In these prints, reptiles come to life to step out of the page, hands drew themselves and staircases led the viewer into impossible dimensions. His drawings took a long time to complete and he was frustrated by what he thought was his lack of a natural drawing ability. Yet he was extremely successful and had commissions from all over the world.
Meet the Art:

This is one of Escher's most popular works and has been used in a variety of ways, as it can be appreciated both artistically and scientifically. There are many elements and principles of design in this artwork. One element used in this artwork is value, this is shown in different shades, creating depth and interest, but median value is the majority of this artwork. Another element is shape. Escher uses many geometric shapes and very few organic ones. Notice the intentional triangle shape created by the staircases causing the viewer’s eye to focus into the center of the picture, even though there isn’t a lot of detail going on. There are many conflicting points of view and depicts a world in which the normal laws of gravity do not apply.

The architectural structure seems to be the centre of an idyllic community, with most of its inhabitants casually going about their ordinary business. There are windows and doorways leading to park-like outdoor settings. All of the figures are dressed in identical attire and have featureless bulb-shaped heads.

Several dialogs about perspective and the representation of three-dimensional images in a two-dimensional picture are at the core of Escher’s work, and Relativity represents one of his greatest achievements in this domain.

Activity: Creating a 3-Dimensional Drawing of Cubes

Materials:

- 12” X 18” white construction paper
- 4x4” Square Stencils
- Ruler
- Pencils
- Markers and/or Colored Pencils
- Block Letter sheet(1 per table, for reference)

Project and Project Definitions:

Definition:

- Perspective (showing the distance in a picture)
- Horizon Line (Line formed where earth and sky meet)
- Vanishing Point (the point where things disappear)

Begin by explaining the difference between two dimensional and three dimensions. Hold up a piece of paper as an example of flat, two dimensional object (width + length), then show the students a box (or cube) as an example of three dimensional object that also has depth. Artist during the Renaissance period came up with a technique - almost a trick to help them paint realistic three dimensional objects on a flat surface. It is a way of fooling the eye into thinking that the painting has depth.

- On the board, draw a large rectangle, then a horizon line and vanishing point inside of it. Explain how the horizon line corresponds to where the sky meets the ground as you look
out into the horizon. The dot in the center is the vanishing point, which is always somewhere along the horizon line.

- Next, instruct the students to follow your lead and draw a Horizon Line through the middle of their paper (6 inches from the top of the paper).
- Then have them place a dot that represents the Vanishing Point on the middle of the horizon line (9 inches from the paper's edge).
- Pass out the 4x4" shaped stencils for students to trace on the bottom half of their paper. Instruct them to space the shapes apart, along the length of their paper.
- Draw lines from the top two corners of each shape to the vanishing point using a ruler (model this on the board as well). Tell students to be as accurate as they can, and to use a pencil first.
- Draw lines from one bottom corner of each shape to the vanishing point. Do not draw any lines through another line (their 3-D shapes).
- Ask students to choose a word with four letters in it. You can help them by writing some of these on the board (Cool, cold, warm, sand, play, swim, boom, best, byte, dude, fate, fish, goal, howl, hook, soft, team, etc). Tell them to chose a word that they will use to draw a scene/background in the picture. Draw each letter large enough to fill the inside of each square. You may want to make copies of the Block Letters sheet and place on each table. Tell them to make the letters fat and then decorate them with markers. When finished, they can decorate their entire paper, using their imagination.

* If available, give students a pre-copied paper with the shapes already drawn out. This will help the students who are having trouble keeping the shapes the same distance apart from each other (many kids have trouble with this step and it will eliminate any problems). You may find this master in the art filing cabinet.
Block Letters

A B C D E F G H I J
K L M N O P Q R
S T U V W X Y Z