

Art 2 Infinity (art + science; art + math)

Reflection occurs when light bounces off an object. The qualities of light and reflection are at the crossroads where art and science meet ... and go forward together to infinity.

Mirrors have played an important role in art and architecture for centuries. They have been used as tools, subject matter and incorporated in the art itself.

Renaissance architect Filippo Brunelleschi is credited with discovering linear perspective with the aid of two mirrors. Reflective surfaces have assisted great artists in history — such as DaVinci and Rembrandt — and contemporary artists in defining and altering perspective, distorting reality, creating symmetry, and “bending” the visual world surrounding us.

Examples of reflective surfaces used as art would be Andy Warhol’s “Silver Clouds” and Anish Kapoor’s “Cloud Gate” and “Sky Window” sculptures,

This lesson plan is actually two ideas for controlling reflection and light to make artwork that fuels the imagination. It incorporates metallic Dura-Lar®, a synthetic film that is highly reflective — and much safer and more economical than mirrors. When two Dura-Lar surfaces are placed together, the image between them reflects over and over again. The angles at which it reflects can be repositioned so that perception changes and distortion occurs.

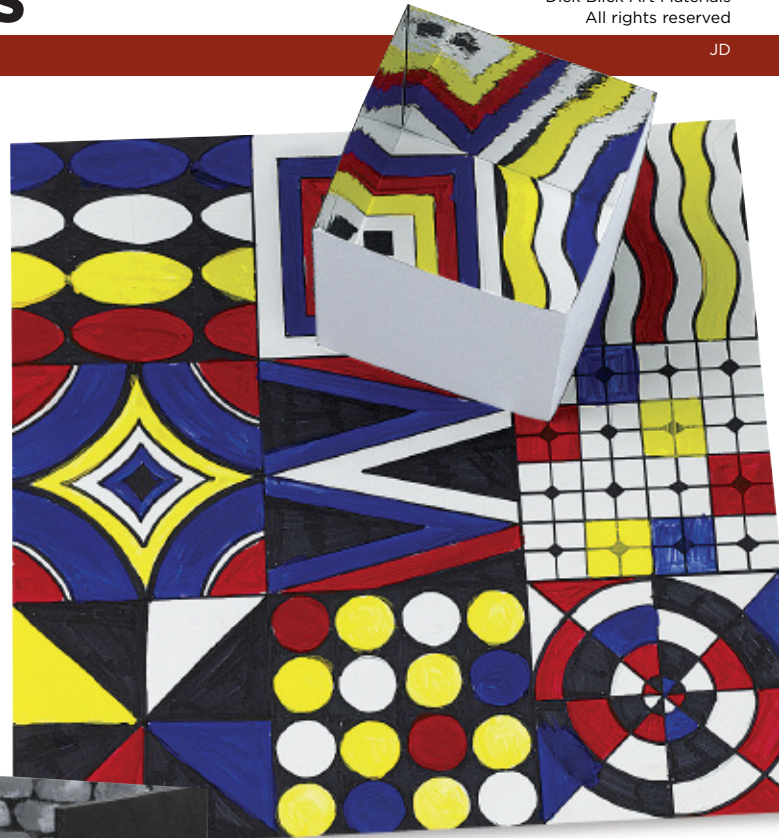
Grade Levels K-12

Note: instructions and materials are based on a class of 25 students. Adjust as needed.

Project 1 — “Kaleidoscope Paintings”

Students make a mirrored “viewer” that distorts and “bends” their paintings, similar to the way a kaleidoscope functions.

1. Cut Mirror Board in half to 4-1/4" x 11" pieces.
2. Measure 5-1/2" to the center and fold both halves of the Mirror Board, reflective side in. Tape on the side to form a box. This will be the Kaleidoscope Viewer.



Project 1 –
“Kaleidoscope Paintings”



Project 2 –
“Infinity Box”

Materials

Project 1 – “Kaleidoscope Paintings”

Mirror Board, Silver,
8-1/2" x 11" (12486-9331);
need one board per student

Blick® Aluminum Ruler, 12"
(55430-1012); one per
student

Blick® Fine Permanent
Marker, Black (22164-2020);
one per student

Blick® Premium-Grade
Tempera, assorted colors
(00011-); share three pints
across class

Project 2 – “Infinity Box”

materials list on following page

Project 1, continued

- Using a marker and ruler, divide a 12" x 12" piece of tagboard into nine sections, each 4" x 4". Fill each section with a geometric pattern outlined in black marker — lines, circles, etc. Leave it black-and-white, or add color with tempera paint or markers.
- Position the viewer and rotate it on the board to see how the reflection bends and distorts to make new patterns and shapes like a kaleidoscope. Have students look at each other's patterns with their viewers.

Project 2 — "Infinity Box"

Students position Mirror Board at 90° angles on either side of a tempera painting. The reflection created in each mirror-like surface gives the illusion that the painting continues on infinitely beyond its borders.

- Students either select a pre-constructed box or make one of their own using matboard or foamboard and strong-bonding glue. Measure and cut two pieces of Mirror Board for the sides.
- Select an image from nature or architecture with a repetitive pattern, such as the archway shown in the example. Create preliminary drawings, using the Mirror Board panels to test the qualities of the reflection — symmetry, perspective, value, etc. Next, paint the image on illustration board. Cut and paint what will become the background of the Infinity Box and what will become the floor and ceiling.
- Assemble the box. If using a pre-constructed box, glue the painted boards in place, then the reflective panels on the side. If creating your own box, use a strong glue to attach individual sections perpendicular to one another. Hold them in place until the glue begins to bond, then place books or other heavy objects on them until glue dries.

Materials

Project 2 — "Infinity Box"

Mirror Board, Silver, 8-1/2" x 11" (12486-9331); need one board per student

Blick® Student Illustration Board, 20" x 30" 14-ply (13414-1003); share one among approximately six students

Blick® Premium Grade Tempera, assorted colors (00011-); share four pints across class

Weldbond® Universal Adhesive, 8-oz bottles (23819-1105); share three across class

Blick® Foamboard, 20" x 30" x 3/16" (13209-1023); share one among approximately six students

National Standards

Content Standard #1 Understanding and applying media, techniques, and processes

K-4 Students describe how different materials, techniques, and processes cause different responses.

5-8 Students intentionally take advantage of the qualities and characteristics of art media, techniques, and processes to enhance communication of their experiences and ideas.

9-12 Students apply media, techniques, and processes with sufficient skill, confidence, and sensitivity that their intentions are carried out in their artworks.

Content Standard #2 Using knowledge of structures and functions

K-4 Students describe how different expressive features and organizational principles cause different responses.

5-8 Students employ organizational structures and analyze

what makes them effective or not effective in the communication of ideas.

9-12 Students create artworks that use organizational principles and functions to solve specific visual arts problems.

Content Standard #6 Making connections between visual arts and other disciplines

K-4 Students identify connections between the visual arts and other disciplines in the curriculum.

5-8 Students describe ways in which the principles and subject matter of other disciplines taught in the school are interrelated with the visual arts.

9-12 Students compare characteristics of visual arts within a particular historical period or style with ideas, issues, or themes in the humanities or sciences.