Art ToGo

The Cleveland Museum of Art

Oodles and Oodles of Lines and Shapes

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Contents

www.clevelandart.org

We invite teachers and students alike to visit the Cleveland Museum of Art in person. We also encourage teachers and students to visit the museum's Website for information about the museum's permanent collection and educational programs.

Cover: R. B. Kitaj (American, b. 1932). *The Garden,* 1981. Oil on canvas; 121.9 x 121.9 cm. Gift of The Eppler Family Foundation, an Anonymous Donor, The Kangesser Foundation, Mr. and Mrs. Frank H. Porter, in memory of William M. Milliken, The Thomas and Mildred Dougherty Foundation, and Wishing Well Fund 1981.50

This Art to Go suitcase has been carefully designed to introduce young students to three basic, fundamentally important elements of visual art: *line, shape,* and *form.* All students, especially the youngest learners, need a concrete understanding of these elements in order to confidently interpret the visual world around them. Understanding these fundamental elements of visual literacy also enables children to create more advanced works of art as they attempt to interpret new knowledge in every facet of their lives. Line, shape, and form are the building blocks in a child's formative visual vocabulary.

Throughout time, artists around the world have made functional objects as well as art objects that rely heavily on the visual elements of line, shape, and form. Here are a few examples:

Decoration in the earliest form of Greek vase painting (the Geometric Period) consists of elegantly arranged lines, triangles, and circles in what may be depictions of mythological places and events.

Workshop of Athens 894 (Greek, 800–700 BC). *Dipylon Amphora,* 8th century BC. Painted terracotta; h. 60 cm. Purchase from the J. H. Wade Fund 1927.6

The French Post-Impressionist painter Paul Cézanne reduced objects in his landscape paintings to amorphic or organic shapes (nonspecific shapes found in nature) depicting forms in space.

The modern sculptor Constantin Brancusi did the same thing in three dimensions with his sculptures of the human form.

In search of a universal and timeless art form, Charmion von Wiegand, much like Piet Mondrian, turned to squares and rectangles in his familiar paintings to symbolize themes important to him.

Examine any drawing you've seen, no matter how detailed or realistic, and notice that the likeness was achieved by a pleasing, skillful combination or arrangement of lines and shapes.

We know that a toddler's first marks are expressive and excitedly "scribbled" lines. What we must remember is that a child grows and learns to control that mark-making ability fairly quickly. Likewise, children learn the vocabulary of line and shape very early in their development. As these skills improve, confidence grows to a point where visualizing thoughts and ideas through nonverbal expression becomes comfortable, achievable, enjoyable, and more commonplace. Lines become shapes, and shapes become symbols representing objects and personalities in a child's world where telling stories, conveying ideas, and creating memories through a universal visual language are important.
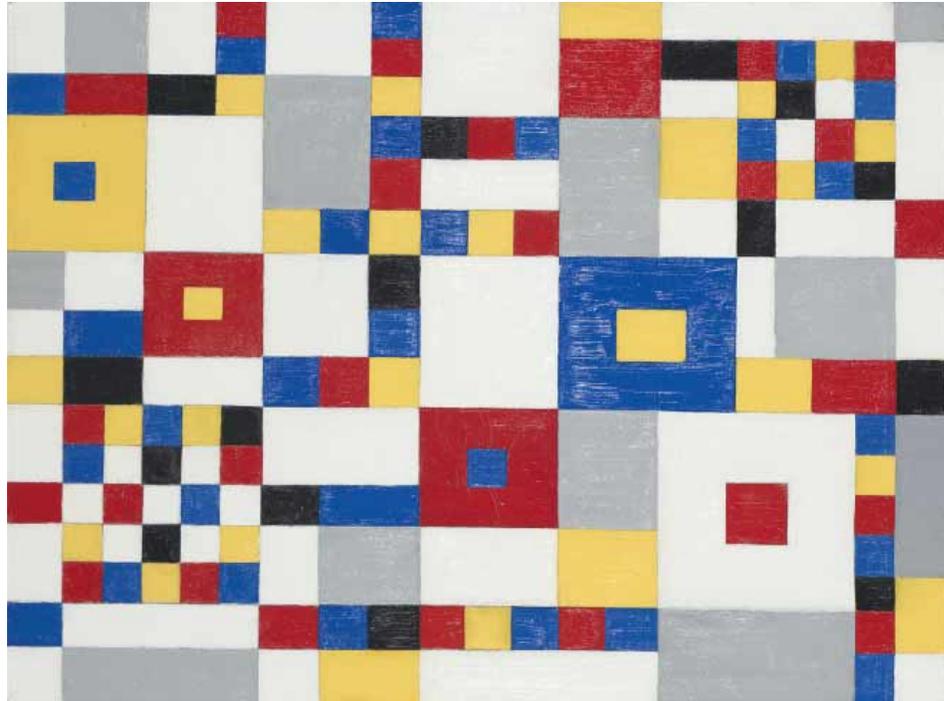
Specifically, geometric shapes and forms are important aids to pre-K and elementary-level students' knowledge of formative mathematics. Spatial awareness and knowledge of pattern are critical to the development of early math skills concerned with recognizing, identifying, describing, and creating shapes and forms. These skills are central to the Ohio State Standards, as is the student's ability to make comparisons between shapes (2D) and solid objects (3D). Happily, shapes and forms surround us everywhere, making the world our classroom. Children can learn the defining qualities of shapes and forms by identifying them in and around their environment.

The objects in this Art to Go presentation have been chosen for their strong use of line and shape, and they work well to solidify young learners' definitions of their specific types. Once the definitions are established, the presentation will expand a student's understanding of these important elements. As students are able to visually identify and name these elements, newfound vocabulary can serve as a handy springboard to incorporate the use of new terms; for example, a "ball" becomes a "circle" (2D) and a "sphere" (3D). A student's ability to make comparisons between two-dimensional shapes and three-dimensional forms is critical to the young learner's understanding of the world. During the

Art to Go presentation discussion, students will be asked to compare shapes—for instance, how a square and a rectangle are different or similar. They will be asked to make comparisons between shapes and forms, identifying 2D and 3D counterparts—square and cube, circle and sphere—to better understand the correct definitions.

Visual literacy aside, the objects presented in this suitcase also have been selected for their variety of materials and cultural character. Each tells a fascinating story about the people who created it. Some items are purely art objects and some are functional objects that served specific uses within the community. Often, the shape or form of a functional work of art is related to its use. Understanding the link between form and function is another important way to understand the nature of a particular object. The conical candle snuffer illustrates this point.

Overall, the objects in this suitcase are intended to serve as memorable examples of line, shape, and form for young learners, teaching students about an object's specific use and about the artisan who created it. Discussions with groups of students will undoubtedly go in many different directions, depending on the students' prior knowledge and understanding. The end result is always a firmer understanding of the importance of the elements of visual literacy, and an appreciation of the world around us through the objects that artists create.

*Candle Snuffer,* early 20th century. America. Brass. 1961.424
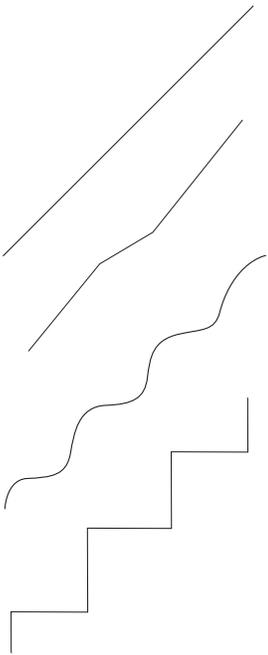
Line

Line is the first of the art elements. It is essential to creating a work of art and is the starting point for this lesson. Line is a manmade invention. Looking up the word "line" in the dictionary yields numerous definitions. Simply put, a line is a continuous mark made on a surface by a moving point. While there are thick and thin lines, a line is measured primarily by its length. Different types include straight, bent, curving, and zigzag, to name a few based on appearance; based on function, there is the clothesline, the telephone line, and the fishing line. One must have line to create a shape. Besides outlining an object, line can be used to imply texture and volume. Line can be used to describe something one sees. Lines or abstract marks can be imbued with meaning, as in the case of writing or mathematics. Lines can also be used to express emotion. This lesson is concerned with the ability of line to be descriptive, and with its use in defining shapes. The easiest way to learn about line is to make one: use a pencil, marker, or chalk, run your finger through some sand, stretch a piece of yarn or a shoelace. Bend a line around to meet itself and you've just made a circle. Now you're making shapes.
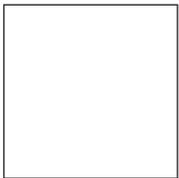
Shape

A shape is space that is enclosed—oftentimes by a line on a piece of paper. It is two-dimensional, measured in two directions: width and length. Shapes can be geometric, created according to identifiable rules and with known names and defined edges. Other shapes are called amorphic. They are organic in appearance, marked by natural or unpredictable edges, like the shape of a cloud or puddle.
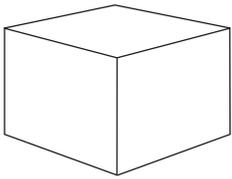
Form

Forms have volume. The major difference between shapes and forms is that shapes are flat or two-dimensional and forms are three-dimensional. Forms are measured by their length, width, and breadth. An easy way to describe form is to say that one is able to view forms from different sides (you can walk around them), and they generally stand upright on their own.
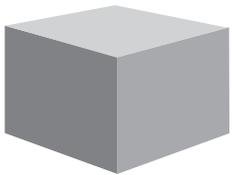
Vocabulary

The following definitions may be of general use to teachers in their understanding of shapes and forms. These terms are not age-appropriate for elementary students.

polygon
A shape with three or more sides made of straight lines; a shape with lots of sides. Examples: triangle, square, rectangle, hexagon. *A shape has to have at least three sides just to be a shape, but there is no limit on how many sides a shape can have. Look at this square; does it have three or more sides? Yes, so it's a polygon. How many sides does the square have? If a shape has one hundred sides, is it a polygon? Yes!*

polyhedron
A form (three-dimensional figure) made of polygons; each side is called a face. Examples: pyramid, cube, hexahedron. *If you take some polygons and put them together to make something three-dimensional, then what you've made is called a polyhedron. Let's look at the sides or faces of my suitcase: what shape are they? Do they have three or more sides? If each face of my suitcase is a polygon, then the suitcase itself is a polyhedron.*

equilateral
Describes a polygon in which every side is the same length.

parallel
Describes two or more straight lines that are on the same plane; they do not intersect. *Parallel lines always run next to each other, but they never touch. The two sides of a straight road are parallel.*

perimeter
The outside edges of a closed shape (two-dimensional) or the total length of those edges. *The perimeter of a circle is its circumference. If you measure all the outside lines of a shape, you have calculated its perimeter.*

circumference
The length of the line that forms the outside edge of a circle.

Additional vocabulary terms follow some of the object narratives in the "Presentation" section. These terms should be administered age-appropriately.

One of the wonderful things about students in the pre- and elementary-level grades is that they typically need no prompting to begin talking about what they see. As their teacher, you need only to instill in them a sense of wonder and curiosity about the subject and then guide them in the right direction. While you may want to pick a few points that you definitely want to cover, the students' interests can determine the direction of this Art to Go lesson.

As an introduction, we suggest you ask the students to be on the lookout for lines and shapes. Begin by identifying some simple shapes that are present in the classroom—for example, the chalkboard is a rectangle. Discussion of each object may begin open-endedly through questions: "What do you see? Tell me about this object. Do you see any lines? Any shapes?" The youngest students should be expected to identify shapes and forms; older students should be able to describe them. For instance, a preschooler says, "I see a square," and you answer by describing the qualities that make it a square. A second-grader should be able to tell you how he knows it is a square.

The objects can be presented in a progressive sequence that begins with those that emphasize line (for example, *"Turtles" Mola* and *Multiple Sculpture*), then moves to shape (*Structure Changeante* and *Pottery Horse*), and finally form (*Wooden Fish* and *Candle Snuffer*). Of course, there is a great deal of overlap among the three categories. With that said, presenters may choose to rearrange the order of presentation. We have attempted to supply enough information in this document for a variety of discussion directions.

"Turtles" Mola, early 20th century. Kuna Indians, San Blas Archipelago. Cotton. 1971.1011

Molas are appliqué textiles made by the Kuna people, who live in a region along the Caribbean coast of Panama, in nearby San Blas islands, and a strip of coastal land. They also live in Colón and Panama City. Kuna Yala ("Kuna Land") is a semi-autonomous territory within Panama. Kuna women create molas to wear as decorations for their blouses.

Favorite mola motifs include geometric designs, imagery drawn from nature (animals, landscape features), and imagery from the human sphere (politics, popular culture, and myth). This mola features two turtles. This piece was chosen because of its wonderful use of line. The shape of the two turtles is created by a line—in fact, multiple outlines. Lines are also used as decorative elements throughout the mola, resulting in a very engaging work. Presenters may use the mola simply to allow students to name the animals they see and to demonstrate the idea of an outline. Let students point out the color of thread that forms the outline of the turtles.

Molas are made by a reverse appliqué process that can involve from two to seven layers of fabric. To make a mola, rectangular pieces of differently colored fabric are basted together and a design is drawn on top. Parts of all but the bottom layer are then cut away to form a multi-colored design. The exposed edges of the cut design are then notched, turned under, and stitched. Typically, cotton fabric is used; favorite colors include red, black, and orange.

Multiple Sculpture,
1970. Canada; artist
unknown, signed "Q."
on side. Bronze, limited
edition 43/100.
1984.1036.a–b

Multiple Sculpture is a small bronze work that was made by a Canadian artist in 1970. Although we do not know the artist's name, he or she marked the initial *Q* on one of the sculpture's sides, along with the date and the notation that it is number 43 of an edition of 100. The sculpture is in two separate parts that fit together perfectly along a zigzagging line that bisects it horizontally. The sculpture can be displayed with the pieces joined together or separated slightly or completely by moving the top section either forward or back.

This piece was selected for its powerful use of line. Students can trace the line in the air with their fingers. They can imitate how the line moves with their bodies or they can talk about how they *would* move if they moved like the line. Many children will say they would jump up and down. One might say something like: "Isn't that wonderful, an artist can draw a picture of you jumping up and down or he can simply draw a line like the one before us—both ways work." Try asking the students what type of line they would use to show sadness or another emotion or what type of movement they would choose to show the same emotion. Students can discuss what the line reminds them of. Perhaps their answers will change when they see the pieces separated and the various ways it can be displayed.

Each face of this sculpture is a rectangle. Its three-dimensional form is called a hexahedron, or more simply a slab. It is heavy for its small size. *Multiple Sculpture* is made of bronze. Bronze is an alloy mixture of copper and tin. Artisans have been making objects of bronze since ancient times; the practice was well established throughout Asia and Europe by 1500 BC. In this instance, the artist

Multiple Sculpture, shown with the two parts separated and standing on end

poured molten bronze into a mold to create the sculpture. Using a soft material (wax, lead, wood), the artist first makes a model of what he wants his finished piece to look like. Then a softened material (clay, sand, rubber) is placed all around the model, so it closely adheres to its form. This will become the mold. The model is removed—sometimes by heat, as in the case of wax, or by cutting the mold in pieces. What is left is a mold with an empty space where the model had been.

Metal (in this case, bronze) is melted to about 2,000 degrees Fahrenheit and poured into the empty mold. As the metal cools, it hardens; when this happens, the sculpture can be removed from the mold. Molds can sometimes be reused; this sculpture is one of 100 just like it. When describing molds, it is helpful to use the analogy of water in an ice cube tray. The artist then files, sands, and polishes the artwork. *Multiple Sculpture* is a very highly polished piece. A great amount of technical skill was required to create separate pieces that fit together so precisely.

Helpful terms and their definitions connected to *Multiple Sculpture*

rectangle
A shape enclosed by four lines and having four right angles. The lines opposite each other are of the same length, but adjacent lines are not necessarily of the same length (nonequilateral). *While technically a square is a rectangle, let's focus on the idea that rectangles are shapes with four sides, two that are long and two that are short. The angles, or corners, of a rectangle are shaped like the letter L. Have everyone make an L with their fingers; that's a right angle.*

quadrilateral
A polygon with four lines; a shape with four sides, each of which can be of any length. The sum of its four angles is 360 degrees. Note: A rectangle, parallelogram, rhombus, trapezium, and trapezoid are all quadrilaterals. *This is for a group that has mastered squares and rectangles.*

bronze
An alloy of copper and tin.

alloy
A type of metal made by mixing two or more different metals together. *The idea is to make a new metal that has the best parts of each of the original metals. For instance, copper is really soft and easy to work with, but sometimes it's too soft. So if you mix it with a harder metal like tin, you get a metal that's still easy to work with but a lot harder and stronger.*

Structure Changeante is a relief sculpture made of two square pieces of Plexiglas held upright and parallel to each other by a small stand. The first piece of Plexiglas is covered with black vertical lines. The second piece features concentric squares, placed at an angle to the sheet. The squares are created by vertical lines; smaller squares stand out against larger squares by virtue of the artist alternating the placement of lines and spaces. When the viewer looks through the printed sheets of Plexiglas, the lines seem to be vibrating or moving as the viewer moves his head. Even slight shifts or movements on the part of the viewer result in the illusion that the vertical lines are moving and that the squares are moving toward and away from the viewer. The artist Yvaral was part of the Op Art movement of the 1960s and '70s, which focused on the visual effects of geometric shapes.

This object was chosen because it serves as a good introduction to shape: lines are used to create the shape of a square. The title of this artwork can be translated as "continuously changing." *Presenters may ask the students if this is a good title. Can they suggest other titles? This allows them to verbalize their impressions of the work's optical illusion.* When the viewer moves his head or changes his point of view, the amount of space visible between the vertical lines

on each of the Plexiglas sheets changes and gives the illusion that the image is not only moving, but moving faster than the viewer. By alternating the density of lines in the concentric squares, Yvaral creates the illusion that the shapes are advancing and receding. He creates the illusion of depth and movement in this work.

Other things presenters may talk about while the piece is being passed around

Yvaral (born Jean-Pierre Vasarely) was a painter and maker of optical or kinetic reliefs. He was the son of Victor Vasarely (1906–1977), the leader of the Op Art movement. In the 1960s, Yvaral experimented with the optical effects caused by the changing position of the viewer, or "optical acceleration." While many artists created optical illusions on a flat canvas, eventually shallow reliefs, such as *Structure Changeante,* became a new way to enhance the illusion of movement.

Helpful terms and their definitions connected to *Structure Changeante*

square
A polygon bounded by four straight line segments of equal length and at 90 degrees, or right angles, to each other; a shape with four sides that are all the same length. Note: While it may be common for us to designate a square that is placed at a right angle on the page as a diamond, a diamond itself does not have right angles. Its actual definition is that of a rhombus with two inner obtuse and two inner acute angles (see *Model for "Salt Lick"* on page 24).

illusion
Visual perception of a real object in such a way as to misinterpret its actual nature. For example, the vertical lines in *Structure Changeante* cause an *optical illusion.*

Op Art
"Optical Art is a mathematically-themed form of Abstract art, which uses repetition of simple forms and colors to create vibrating effects, moiré patterns, foreground-background confusion, an exaggerated sense of depth, and other visual effects. . . . With Optical Art, the rules that the viewer's eye uses to try to make sense of a visual image are themselves the 'subject' of the artwork." Source: www.artcyclopedia.com.

This whimsical horse was designed by one of Sweden's most important postwar designers, Stig Lindberg. Its wonderfully rounded belly fits nicely in one's cupped hands. The ceramic piece is mold-made and decorated with geometric shapes.

Pottery Horse was chosen because it is covered with circles and the mane is made of triangles. Simple lines are used to designate the tail and reins. It also introduces the oval and the ovoid (an oval made three-dimensional). Children should be able to easily identify the shapes of the painted decoration. To talk about ovals, one might ask students what shape they would use if they were to draw the horse's body (without worrying about the neck and head) on a sheet of paper. Maybe they will already understand the word oval, or they will learn it by actually drawing one themselves (perhaps one student can draw on the chalkboard). Depending how one views an ovoid, it can look like an oval or a circle.

Stig Lindberg was the top designer at the prestigious Gustavsberg studio in Sweden, where he created tableware and playful ceramic art sculptures. His fine art ceramics, such as this horse, were mass produced. The popularity of his designs is widespread; most Swedes remember growing up with at least one of his creations in their home.

The horse was made from clay and created by using a mold, allowing multiple sculptures to be made. This method is less time consuming than making each horse by hand and ensures that all the horses are exactly the same size and shape. The hole in the bottom of the horse is to let air escape and thus prevent the piece from exploding in the kiln during the firing process. After firing, the clay cools and becomes ceramic.

Helpful terms and their definitions connected to *Pottery Horse*

triangle
A polygon bounded by three straight lines; a shape with three sides.

circle
A round shape in which every point on the outside is the same distance from the center, and each segment of the circle's edge has the same curve. *One can make a circle by curving a line around to meet itself. Draw a circle by using a compass or by taking a string and attaching one end to a point on a piece of paper and the other end to a pencil. Pull the pencil so that the string is taut and draw the pencil around the point. Imagine putting your finger right in the middle of a circle; every part of the outside of the circle is the same distance from the center or middle—that's what makes a circle round and not oval. By the way, the outside line of the circle is called the circumference.*

radius
A straight line from the center of a circle to a point on its edge or circumference or from the center of a sphere to a point on its surface; the distance from the middle of a circle to the outside.

oval
An egg-like shape that looks like a circle that has been stretched to make it longer. The two ends of an oval may or may not be the same size and shape. *If one were to take a circle and stretch it, you would have an oval. Find an example of an oval in your classroom. If you put your finger in the middle of an oval, the distance to some parts of the outside is longer than the distance to other parts.*

ovoid
The three-dimensional form of an oval. Depending on one's point of view, it can look oval or circular. *If I draw a picture of an egg on a piece of paper, I might draw an oval. The paper is flat and so is the shape I would draw. An egg or a balloon looks like an oval, but these aren't flat. So if the object looks like an oval when you draw it, but isn't flat in real life, then it is an ovoid.*

This sculpture is made of two highly polished pieces of wood that together represent a fish. The body of the fish is spherical, and the separately attached tail is a crescent shape. The only detail is small incised lines to indicate the mouth and eyes. It is a great example of Danish modernism, in that an actual animal is depicted by simple abstract means and the material's sensual qualities are accentuated.

This object was chosen for its form. It is a wonderful example of a sphere—and has the added benefit of having a crescent-shaped tail. When the students are asked to identify the form of the fish, perhaps they will say that it is a circle. It is true that when viewed, the outside edge forms a circle. Or if we were to draw the fish, we would use a circle. However, a circle is flat and the wooden fish definitely is not. The three-dimensional form of a circle is a sphere. In the same way that every part of the edge of a circle is the same distance from the middle, every part of the outside of a sphere is the same distance from the middle. *Presenters may ask the students to identify other examples of spheres with which they are familiar. The fish is not a perfect sphere or ball—why not? There is a flat spot on the bottom. Why would the artist do that? It allows the fish to stand, and I think he did a pretty good job of hiding that flat spot so the fish looks as round as possible.*

One might also ask the students how they know this object is a fish. Here the idea of a fish is communicated by the simplest of means. This paring of detail allows the viewer to more deeply appreciate the artwork's form, texture, and material. The fish is made of heavily grained wood. Students can guess the material and explain how they came to their conclusion. *Presenters may ask the students whether they enjoy looking at "Multiple Sculpture" or this fish more. Which one do they enjoy holding more?* This artwork is intended to be more than visually satisfying; it is meant to appeal to the mind and to all the senses.

Other things presenters may talk about while the piece is being passed around

This fish is a wonderful example of the modernist Danish aesthetic. The unique characteristics of Danish design became known around the world in the 1940s, '50s, and '60s. This was due to technological advances and the greater economic opportunities following World War II, combined with a series of brilliant craftsmen, architects, and artists. A common theme of the work in these various fields was organic simplification. Forms became more organic; notice that this is the only object in the lesson that does not include a straight line. The means used to achieve maximum elegance and function are reduced to their lowest common denominator.

Helpful terms and their definitions connected to *Wooden Fish*

sphere
A form that is circular from all possible points of view; a sphere is shaped like a ball. Spheres are the 3D counterpart to the circle. All of the points on its surface are the same distance from the center.

crescent
A shape with concave and convex edges terminating in points. *This shape looks as if you took your scissors and cut off part of a circle. One side of the crescent bends out, like the outside of a circle, and the other side bends in. When we can't see the entire moon, it is a crescent shape.*

organic
Of, pertaining to, or derived from living organisms; also, simple, basic, and close to nature.

This brass object was created to extinguish a candle flame. It is simple in design, a cone with a short cylinder attached for the user's finger. The only decoration is a crest or shield, which probably identified the owner, stamped onto the cone's surface.

This piece was chosen as an example of a cone—and because it demonstrates the principle of form following function. Ask the students if they know this object's use and how they would hold it. Specifically, it is a finger snuffer for putting out a candle: one puts one's finger through the circle to hold it. Candles were the earliest form of lighting in Colonial America. The shape of a cone is ideal for the purpose of putting out a flame. The wide opening at the base covers the top of the candle, while the narrow closed top robs the flame of oxygen so that it cannot continue to burn. The circular holder is the perfect shape to accommodate one's finger.

An ice cream cone is another example of form following function. What's the function of a cone for ice cream? To hold the ice cream. What is the form of a scoop of ice cream? A sphere. A sphere fits perfectly in the cone's large circular opening. Now why is the bottom tapered? To catch the drips! So the form of the cone is just right for the function of holding a scoop of ice cream.

Other things presenters may talk about while the piece is being passed around

Of course, we now use electricity as the primary means of lighting our homes, but throughout the 19th and into the 20th century candles were very important. In some areas of the rural South, Americans continued to burn candles and

kerosene lamps into the 1930s. When do we usually use candles today? Candles on birthday cakes are certainly intended to be blown out; however, using a candle snuffer is a safer and neater way to extinguish other types of candle flames. The snuffer keeps the wax from spraying and keeps the wick centered. (Note: There is a technical difference between "snuffers," instruments designed to cut and remove burnt wick, and "conical extinguishers" or "dousing cones." Since modern candles do not need to have their wicks trimmed as they burn, either name is sufficient for our purposes.)

Brass is an alloy made of copper and zinc. Zinc is added to make the brass harder than copper. Brass, as we know it today, came into use around the 16th century. Like other metals, it can be worked by melting and also by external pressure applied to its solid form—such as hammering the brass into thin sheets. The candle snuffer was made by heating brass until it was malleable and then hammering (annealing) it into the conical form. Brass is recyclable. Old, broken, or scrap pieces can be melted down to create new objects. A person who works with brass or bronze to make functional objects is called a founder. Brass is used today to make decorative and functional items like door knockers, letter boxes, and candlesticks.

A helpful term and its definition connected to *Candle Snuffer*

cone
A three-dimensional shape having a surface formed by a straight line (the side length, or generatrix) passing through a fixed point and moving along a circular curve (the directrix). As with cylinders, we usually use the term to refer to a right cone, in which the side length remains the same. *Another way of putting it: This is a form whose base is a circle and whose sides taper (become smaller) to a point. Examples include a teepee or a party hat.*

This simple-looking piece is a dipper or ladle made from a section of a bamboo plant's stem. A *hishaku* is a utensil used in the Japanese tea ceremony. The tea master uses the dipper to ladle hot water from the kettle or cold water from the water jar when he is preparing a cup of tea.

The hishaku is an example of a cylinder. It is also a functional work of art; ask the students how they would use it. Most ladles are shaped like half of a sphere or ball. Why was this one made in the form of a cylinder? In this case, the nature of the materials used dictates the form of the ladle. Bamboo is one of the world's largest grasses. Bamboo has hollow, hard-walled stems with ringed joints. The dipper was made by cutting a cross-section of the stem; the resulting form is a cylinder.

Other things presenters may talk about while the piece is being passed around

The tea ceremony was brought to Japan from China by Eisai, the founder of the Rinzai school of Zen, in the beginning of the 13th century. The tea ceremony is more than a way to prepare and serve tea. Its purpose is that of Zen Buddhism: to focus one's senses and awareness of the moment. The utensils used in the tea ceremony are made of natural materials such as iron, clay, and bamboo. They may seem simple or rough in appearance, but in fact they are skillfully made. Dippers are usually made of wood, metal, or bamboo.

Helpful terms and their definitions connected to *Hishaku*

cylinder

A three-dimensional shape generated by a straight line (the generatrix) intersecting and moving along a circle (the directrix) while remaining parallel to a fixed straight line that is not on or parallel to the plane of the directrix. Cylinders are easiest to understand by looking at one or calling to mind familiar objects such as cans, drums, and rolling pins. Have the students identify the two circles on the cylinder's top and bottom. The circles are the directrices. When we talk about cylinders, we are referring to a right cylinder. The directrices are parallel to one another and at 90 degrees to the generatrix. The generatrix is a straight line that generates a surface by moving in a specified fashion. In this case, the generatrix moves around the edge of the circles. *A cylinder is three-dimensional. Cylinders have circles at both ends with straight lines that connect them to each other. Examples of cylinders are paper towel rolls, tin cans, rolling pins, and unsharpened pencils.*

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Model of a Pueblo Dwelling, 1928. Southwest American Indian, Zia Pueblo, New Mexico. Pottery. 1928.331

This object is a ceramic model of a type of house seen in southwestern pueblo architecture. It is small in scale and was probably created as a souvenir for tourists visiting the Zia Pueblo in New Mexico. Pueblo means "village" in Spanish. The term is used to describe Native American villages that share a similar architecture—defined by multi-family, multi-story adobe structures organized around plazas (public areas) with kivas (underground religious structures). Adobe is a building material that uses bricks made of earth, clay, and straw; these brick structures are plastered over to create the final smooth, organic-looking surface that is characteristic of such architecture.

Pueblo dwellings like the one represented here were multi-storied; the lower floors were often used for storage, with sleeping and dining areas in the upper levels. Tradition-ally, these buildings were accessed through the roof by means of a ladder, which could be pulled up in times of trouble for greater security. This detail is lacking in this modern version, which features a front door like most Western-style buildings!

This pueblo model was chosen for the variety of squares and rectangles that make up the details of the building (doors, windows, etc.) as well as the faces of the three-dimensional form. Looking at this object is a good way to demonstrate how flat squares or rectangles can be put together to create forms. If the second story of the building

could be removed, it would be a cube. The stepped side of the building (perhaps a reference to a ladder) is a good example of right angles. The model is also a good piece for talking about symmetry: the squares and rectangles are symmetrical, while the model itself is not.

Other things presenters may talk about while the piece is being passed around

Traditionally, pottery was made by the women of the pueblo. They used simple hand-building techniques, such as coiling, to shape the clay. The Zia Pueblo model was probably built by joining together square-shaped slabs of clay.

The sun symbol of a circle with four rays that is on New Mexico's state flag was inspired by a similar design on a clay pot found at the Zia Pueblo. Four is a sacred number to the Keres nation, as well as other Native American groups. Presenters may ask the students if they can think of things that come in fours: the four directions, the four seasons, the four stages of life. Ask if they can think of shapes that involve fours.

Six main nations are considered to be Pueblo Indians: Hopi, Zuni, Tiwa, Tewa, Towa, and Keres. Members of the Keres nation built and have lived at the Zia Pueblo since about 1250 AD. Comprising about 190 square acres, the land is approximately 35 miles from Albuquerque. At one time the pueblo had 6,000 inhabitants; now only about 650 people live there.

Helpful terms and their definitions connected to *Model of a Pueblo Dwelling*

cube
A polyhedron with six square faces. It is also one type of hexahedron. *If you took squares and put them together to make a box, you would have a cube. Each face is the same size as all the other faces, just the way each side of a square is the same size as all the other sides. There are four sides on a square. How many squares are there in a cube? Six.*

plaza
A public square or similar open area in a town or city.

Frederick L. Hollendonner (American, Cleveland, 1928–1990). *Model for "Salt Lick,"* 1967. Painted wood. 1968.16

This object, a model for a sculpture in the Cleveland Museum of Art's permanent collection, comprises four white, equal-size parallelepipeds arranged in a staggered pattern. Each form is offset from the others—placed behind, higher, and to the side of the one before it. Like the final work of art, the model sculpture is painted wood. Frederick Hollendonner was a Cleveland painter and sculptor who graduated from the Cleveland Institute of Art in 1953. He participated in many of the museum's annual May Shows, winning first prize in painting in 1956 and 1958. Hollendonner was also a valued museum employee for more than 36 years, becoming chief conservator.

Salt Lick was chosen as a pure example of how beautiful a shape or repeated shapes can be. It also clearly shows parallelograms in their three-dimensional form: the parallelepiped. *As a side note: Most people can barely pronounce parallelepiped, and besides that, it may not be the most useful term that the students will learn during their lesson. It is best here for students to know about parallelograms, how they are different from rectangles, that they are flat shapes and have been put together to make a three-dimensional sculpture.* This is a good piece to use to talk about congruency, or shapes and objects that are similar.

Salt Lick belongs to the minimalist school of art. Minimalism originated in New York City in the 1960s. Like Pop Art, it was a reaction against the subjectivity and gestural artwork of Abstract Expressionism. Minimal art describes painting or sculpture that is made with a minimum of means. Everything is reduced to the essentials of geometric abstraction; nothing is extraneous. The viewer relates to the work by how he perceives it: what you see is what you get. The abstractions are not meant to be symbols of something outside the work of art. They are meant to be exactly what they are: geometric shapes and forms, usually precise and hard-edged.

The artist may or may not use color. He may choose to use only one color, or commercially mixed colors. For example, the minimalist artist Sol Le Witt frequently paints his sculptures white, because he believes white is the color with the least emotional connotations. The surfaces of minimal art tend to be smooth; the hand of the artist is not visible. Minimalist artists often use repetition of shapes or forms to emphasize the geometry of the figure and the subtle relationships between the figures themselves and their environment. In *Salt Lick,* the staggering of the four parallelograms serves to accentuate the essence of the geometric form, to highlight the "parallelogramness" of the parallelogram.

Helpful terms and their definitions connected to *Salt Lick*

parallelogram
A four-sided polygon, all opposite sides being parallel to each other. *This is a shape with four sides, and the sides across or opposite each other are parallel. Notice the word "parallel" in its name. Squares and rectangles are parallelograms with right angles.*

parallelepiped
A polyhedron with six faces, each a parallelogram, and each parallel to its opposite face. Note: A regular hexahedron is also a parallelepiped.

rhombus
An equilateral parallelogram. *A parallelogram with sides that are all the same length is a rhombus.* Notice that there is no right angle requirement.

rhombohedron
A polyhedron with six faces, each of which is a rhombus.

Tile from the Alhambra,
13th century?. Spain,
Islamic. Ceramic,
carved into part of a
star design. 1923.853

This ceramic tile features one-quarter of a star pattern. Islamic art is filled with geometric shapes and patterns. The star is an auspicious symbol in Islamic iconography. The points of the star radiate from one central point equally in all directions. The one point represents one God and Mecca, the center of Islam. One-quarter of a star is visible in the top right and bottom left corners of the tile.

This tile is believed to come from the Alhambra, a walled city and fortress in Granada, Spain. The Alhambra was built during the last Islamic sultanate in Spain, the Nasrid dynasty (1238–1492). It was conceived as paradise on earth, and had many gardens and impressive halls. The palace, still preserved today, is lavishly decorated with stone and wood carvings, and mosaic tiles cover most of the walls, floors, and ceilings.

The tile is an interesting object with which to end the lesson. The white lines, raised in relief above the colors of blue, green, and brown, bring students back to the first point in this lesson: line. This is also a good time to discuss intersecting lines. Students have spent the lesson reviewing and learning names of geometric shapes and forms and the rules that define them. All the colored shapes that are created by the white lines are polygons, but the definitions end there. It's possible to make lots of shapes that don't have a name at all. Students can make up their own rules.

We began the lesson identifying lines, later we understood how lines are used to create shapes, and finally how shapes are used to create forms. This object brings us back to the beginning and also allows the students to visualize how shapes can be put together to make other shapes. It is important for younger children to take a square and cut it diagonally from corner to corner, discovering that they have created two triangles. Older children should be able to look at the square and visualize how it can be made into two triangles. They are learning to anticipate the outcome.

Other things presenters may talk about while the piece is being passed around

The name Alhambra means "the red one" and refers to the color of the mountain, the Sierra Nevada, on which it is built. It is the most important and the best conserved Arabian palace of its time. Spain was conquered by Muslim armies in 714 AD and remained under Islamic control for the next 800 years. During that time, Muslims greatly influenced the culture of Spain and made it an intellectual center.

The tile in this lesson is one part of a star pattern. Islamic religious art traditionally does not use representations of living beings; as a result their art contains some of the most beautiful uses of patterning and calligraphic design. Complex geometric designs with their impression of unending repetition are symbols of infinity and the unending nature of God. M. C. Escher, an artist well known for his unending patterns, was fascinated by the intricate designs that he found at the Alhambra.

List of Objects

- *"Turtles" Mola,* early 20th century. Kuna Indians, San Blas Archipelago. Cotton. 1971.1011

- *Multiple Sculpture,* 1970. Canada; artist unknown, signed "Q." on side. Bronze, limited edition 43/100. 1984.1036.a–b

- Yvaral (French, 1934–2002). *Structure Changeante,* 1970. Two screenprints on transparent Plexiglas with white Plexiglas stand. 1973.1159

- Stig Lindberg (Italian, born Sweden, 1916–1982). *Pottery Horse,* 1965. Ceramic pottery. 1965.109

- Ernst Henriksen (Danish). *Wooden Fish,* 20th century. Wood. 1957.509

- *Candle Snuffer,* early 20th century. America. Brass. 1961.424

- *Hishaku (Dipper for Tea Ceremony),* late 20th century. Japan. Bamboo. 1985.1068

- *Model of a Zia Pueblo,* 1928. Southwest American Indian, Zia Pueblo, New Mexico. Pottery. 1928.331

- Frederick L. Hollendonner (American, Cleveland, 1928–1990). *Model for "Salt Lick,"* 1967. Painted wood. 1968.16

- *Tile from the Alhambra,* 13th century?. Spain, Islamic. Ceramic, carved into part of a star design. 1923.853

Lesson Plan

Pre- and post-discussions by the classroom teacher further motivate and solidify student comprehension of concepts during the Art to Go presentation.

● **Focus**

Students will be introduced to the art elements of line, shape, and form through a hands-on session with genuine art objects from a variety of world cultures. The lesson is best presented to grades K–3, but works well for students up to grade 6.

● **Purpose**

To allow students the opportunity to handle genuine art objects that highlight concepts in art appreciation and production, and that also make solid formative math connections.

● **Motivation**

Students will be both intrinsically and extrinsically motivated to participate in discovery-based discussion while handling objects.

● **Objectives**

Students will learn and appreciate the importance of the visual art concepts of line, shape, and form as they pertain to objects they observe and handle and to the world around them.

Students will comprehend connections between visual arts and formative math concepts, including two-dimensionality, three-dimensionality, and illusion.

Students will become familiar with and will use in discussion vocabulary words such as circle, square, triangle, sphere, cube, cylinder, and others, and will be able to identify them when viewed in their surroundings.

Students will be introduced to general art-making production techniques.

● **Participation**

Discussion will be encouraged through inductive reasoning techniques during the presentation. Questions both simple and complex will be posed. Identification of new and review terms will be woven into the discussion.

● **Comprehension Check**

Throughout the Art to Go presentation the CMA instructor will consistently weave new terms and concepts into the discussion as a means of reviewing and reaffirming knowledge.

● **Continued Exploration**

Teachers and students will continue to expand their visual arts vocabulary by identifying new terms and knowledge as they study other subjects and the environment in which they live. This process will reinforce all learned knowledge.

Cleveland Museum of Art, clipping file: Frederick L. Hollendonner.

Delay, Nelly. *The Art and Culture of Japan.* New York: Harry N. Abrams, 1999.

Feldman, Edmund Burke. *Thinking About Art.* Englewood Cliffs, N.J.: Prentice-Hall, 1985.

Stokstad, Marilyn. *Art History.* New York: Harry N. Abrams, 1995.

Websites

http://www.artlex.com [Art dictionary]

http://www.tomthomson.org/education/shape.pdf [Art exhibition based on shape]

http://www.dartmouth.edu/~matc/math5.pattern/lesson5A&M.connection.html

http://www.nmai.si.edu/exhibitions/the_art_of_being_kuna

http://encarta.msn.com [Metalworking and alloys]

http://www.tate.org.uk/servlet/ArtistWorks?cgroupid=999999961&artistid=2182&page=1&sole=y&collab=y&attr=y&sort=default&tabview=bio [Yvaral]

http://www.nordicmuseum.com/lindberg.htm

http://danishdesign.denmark.dk

http://web-japan.org/factsheet/tea/tea_c.html

http://www.ipl.org/div/pottery/index.html [Pueblo pottery]

http://www.indianpueblo.org/index.cfm?module=ipcc&pn=15

http://www.rain.org/eagle/pueblo1.htm

http://www.indianpueblo.org

http://netra.glendale.cc.ca.us/ceramics/alhambratile.html

http://weasel.cnrs.humboldt.edu/~spain/alh [The Alhambra]

http://www.tuspain.com/alhambra.htm

http://www.metmuseum.org/toah/hd/orna/hd_orna.htm [Islamic art]

http://www.askasia.org/frclasrm/lessplan/l000030.htm [Islamic art]

Further Reading

Bial, Raymond. *Lifeways: The Pueblo.* New York: Benchmark Books, 2000. [Contains photos of pueblos.]

Cobb, Vicki. *Imagine Living Here: This Place Is Crowded—Japan.* New York: Walker Publishing, 1992. [Illustration of tea ceremony, including a hishaku.]

Ehlert, Lois. *Color Zoo.* New York: Harper Collins, 1989.

———. *Color Farm.* New York: Harper Collins, 1990. [Great, simple graphics. Shapes are combined to create various animals.]

Florian, Douglas. *A Potter.* New York: Greenwillow Books, 1991. [Simple text and beautiful illustrations show a potter at work.]

Gilbreath, Alice. *Slab, Coil and Pinch: A Beginner's Pottery Book.* New York: William Morrow, 1977.

Good, Keith. *Shape It! Magnificent Projects for Molding Materials.* Minneapolis: Lerner Publications, 1999. [How molds work.]

Greenberg, Jan, and Sandra Jordan. *The Sculptor's Eye: Looking at Contemporary American Art.* New York: Delacorte Press, 1993.

Hoben, Tana. *Shapes, Shapes, Shapes.* New York: Greenwillow Books, 1983.

———. *Round & Round & Round.* New York: Greenwillow Books, 1986.

———. *So Many Circles, So Many Squares.* New York: Greenwillow Books, 1998.

———. *Cubes, Cones, Cylinders and Spheres.* New York: Greenwillow Books, 2000. [All the Tana Hoben books feature photographs demonstrating that shapes are everywhere around us. They are wonderful!]

Knapp, Brian, and Colin Bass. *Math Matters! Shapes.* Danbury, Conn.: Grolier, 1998. [Explains how shapes apply to math lessons for primary school students.]

Metropolitan Museum of Art. *Eye Magic: Visual Trickery in Art.* Hauppauge, N.Y.: Barrons Educational Series, 2005. [Includes examples of Op Art.]

———. *Museum Shapes.* New York: Little, Brown, 2005.

Micklethwait, Lucy. *I Spy Shapes in Art.* New York: Greenwillow Books, 2004.

Yenawine, Philip. *Shapes.* New York: Museum of Modern Art/Delacorte Press, 1991. [Examples of how artists use line and shape to communicate ideas through art.]

Multi-disciplinary Connections

Visual Arts
Make drawings of 2D and 3D counterparts. Use pastel chalks of similar color (such as yellow, orange, and red) to shade the sides of a drawn cube, creating an illusionistic rendering. Create a simple flip-book using Post-It pads illustrating a bouncing ball.

Physical Science
Observe architectural examples that can easily be broken down into geometric forms: cubes, parallelograms, pyramids. Use stacking blocks to explore the structural possibilities when creating buildings or even bridges. Create a classroom city where each student designs their own building.

Social Studies
Cultures have long used flags to identify themselves to others. Observe international and historical flags that highlight simple shape compositions. Have students create flags for their own imaginary country using geometric and/or organic shapes.

Mathematics
Using the correct shapes create paper templates or have students create paper templates that when cut out form counterparts. For example, six squares sharing the correct edges, cut out, folded, and taped together become a cube.

Language Arts
Read Hispanic children's stories and illustrate your own mola. Write a creative story that tells the tale of how a square became a cube, how a line became a circle, how the square and the triangle got together to make the pyramid.

Art to Go Suitcase Presentations

Oodles and Oodles of Lines and Shapes

Repeat, Repeat, Pattern, Pattern

Museum Zoo: Animals in Art

Masks: Let's Face It

Let's Discover Egypt

Cool Knights: Armor from the European Middle Ages and Renaissance

Native American Art

Early America: Artistry of a Young Nation

Problem Solving: What in the World?

Classical Art: Ancient Greece and Rome

China: Art and Technology

Ancient Americas: Art from Mesoamerica

Natives and Settlers: Early Artifacts from the Ohio Region

Journey to Asia

Journey to Japan

Journey to Africa: Art from Central and West Africa

The Art of Writing: The Origin of the Alphabet

Diego Rivera: A Mexican Hero and His Culture

Materials and Techniques of the Artist

Artists of Our Region

Oodles and Oodles of Lines and Shapes

Art ToGo