
FEATURE

Go round: Teach the circle shape

Early childhood educators often teach geometric shapes as a way of building math concepts. What about teaching one shape at a time—in this case, the circle?

Preschoolers as young as 3 years old already have some familiarity with the circle concept from playing in circle games or gathering for a story at circle time. As teachers, we can reinforce the concept of the circle shape with simple activities.

Talk with co-workers about hosting Circle Day or Circle Week in your program. Inform parents and encourage them to follow up by discussing the circle concept with children at home. You might ask parents to help children dress for the event in circle hats—berets and brimmed hats such as bucket caps and sunhats—or clothing with circle shapes in the fabric, for example.

Background

Through history, many cultures have observed the circular shape of the sun and moon and given the circle mystical meaning. A circle has no beginning or end. It can suggest an infinite universe as well as cyclical events such as the rising and setting of the sun and the changing of the seasons.

In nature, shapes are often jagged and asymmetrical. But circles

do appear if we look closely: nasturtium leaves, the dark center of a sunflower, worm holes, black fungal spots, and circular fruits such as oranges, for example.

In mathematics, a circle is a shape in which all points along the edge, or **circumference**, are equal in distance from the center. The ancient Egyptians and Babylonians knew about this relationship, but it wasn't until 1706 that a self-taught mathematician,

William Jones, came up with the value of the relationship between a circle's circumference and its diameter. Mathematicians represent the ratio as the Greek letter π (pi), approximately 3.14159. Geometry students determine the circumference of a circle with the formula πR^2 .

A circle is a two-dimensional shape with equal height and width. In three dimensions (with depth), it's a wheel. Interestingly enough,



the ancient Mesopotamians came up with the first wheel—the potter’s wheel—around 3500 B.C. No one thought to use wheels for transportation until around 500 B.C. In this context, the circle suggests movement and energy.

Other circular objects with depth are cylinders and spheres (balls). These objects suggest an interior and an exterior, enclosure, and thus safety and community. Whatever the deeper or symbolic meaning, the circle provides a touchstone for further learning.

Learning activities

Incorporate the circle concept in routines and learning centers. It’s important to provide preschoolers with hands-on activities and ask questions to engage them in conversation.

Circle time

As children gather, encourage them to describe the shape they form. It’s **round** and has no corners, for example. Invite a child to stand in the **center** and observe those standing the outer **ring**. Challenge children to identify circular objects in the classroom and place a sticky tab on each, where possible. They might identify a clock, a jar lid, a door knob, and a Hula hoop, for example.

Outdoor play

Point out the circle when you play circle games, such as “Duck, Duck, Goose” and “Doggy, Where’s My Bone?” Talk about the circular shape of wheels on tricycles, wagons, and wheelbarrows.

Teach children how to throw a Frisbee®. Stand sideways with

shoulder pointing in the direction you want the disk to go. Hold it with thumb on top, index finger on the edge, and other fingers underneath. Bend your arm inward and then flick it forward. Invite children to practice by throwing it back and forth with a partner.

Doggy, Where’s My Bone?

Play this game indoors or outdoors. Find an object such as a plastic spoon to represent a doggy bone. Have one child, the doggy, leave the circle and stand behind a tree or chair. A child in the circle hides the bone behind the back. The doggy returns and tries to guess who has the bone. The one with the bone becomes the next doggy.

Blocks

As children play in the block center, encourage them to identify circles among the blocks, such as the cylinders and arches. Challenge children to build circular constructions, such as corrals, and use cylinders and arches in buildings. Ask questions such as: “What can you do with cylinders that you can’t do with rectangles?” Provide vehicle and people figures. “Can you find other circles besides the car wheels?” (headlights, eyes)

Cooking

Have children wash their hands thoroughly. Provide plastic knives and an assortment of vegetables and fruits that can be sliced in circles, such as zucchini, oranges, and bananas. Serve the slices for snack or offer at mealtime. Ask: “What other foods are shaped like circles?” (pancakes, biscuits, cookies,



muffins, cherry pie, and pizza, for example)

Dramatic play

Encourage children to sort items into “circles” and “not circles.” Circular objects include the round plates and pots, stove burners, and round table, for example. Non-circular objects include boxes, telephone, and baby bed.

Math center

Have children pair up and give each a lump of play clay. Invite them to roll it out into a snake about 12 inches long and squeeze the ends together to make a **circle**. Discuss its characteristics. Then invite children to form the circle into a **square**, **rectangle**, and **triangle**. Discuss the characteristics of each.

Invite the children to form the circle again. Demonstrate how pressing together the sides of the circle will form an **oval**. Ask: “What does this shape remind you of?” (egg, football) Compare the oval to the numeral **zero** and the letter **O** in the alphabet. Remember that in some typefaces, such as Helvetica, the **O** is a circle.

Provide paper, pencils, and jar lids and invite children to draw a circle by tracing around the jar lid. Ask: “What if we didn’t have a round object like a jar lid? How could we still draw a circle?” Demonstrate how to draw a circle using a string tied to a pencil. Invite children to use this method to draw circles on construction paper or tissue wrapping paper. Ask: “How can we make larger circles? Smaller circles?” Children may want to cut out the circles, decorate them, or use them in making a collage.

Art center

Provide round paper plates, markers or crayons, and bits of ribbon, yarn, and other findings. Encourage children to make the plate into a daisy for springtime. Cut out the center of the plate and use the outer rim as a frame for a wreath or picture. Show children how to cut the plate into a spiral to make a coiled snake.

Provide large coat buttons and string. Invite children to thread the string through the buttons to make a bracelet or necklace. Children may choose to wear these items during Circle Day or Circle Week.

Sand and water center

Provide round implements such as a strainer and round bowls. Invite children to pat wet sand or mud into flat pancakes or shape it into balls. Some children might

enjoy making a castle by patting sand into bowls and cylinders.

Music center

Invite children to march using only circular rhythm instruments such as tambourines, drums, and bells. Consider making shakers out of juice cans and pebbles and using two metal pot lids as cymbals.

Tissue dance

Give each child a tissue circle (from the math activity above) to place on the head. Play music and encourage children to dance without letting the tissue slip to the floor. This activity helps children learn posture, balance, and mental concentration.

Library center

Provide newspapers, magazines, and junk mail. Invite children to



tear out circle shapes in pictures and the letter O in headlines and text. They can glue the shapes and letters onto construction paper to make a collage.

Provide paper and pencils and invite children to make smiley faces. Have children write their names in large letters on a strip of poster board and glue round buttons along the lines of the letters.

Stock the literacy center with books about circles. Here's a sampling of books you might find in a library or bookstore.

- *Circles* by Jan Kottke. 2000. New York: Welcome Books.
- *Circulos* by Sarah Schuette (in English and Spanish). 2011. Mankato, Minn.: Capstone Press.
- *Circle, Square, Moose* by Kelly Bingham. 2014. New York: Greenwillow Books.
- *Circle Song*, by Diana Engel. 1999. New York: Marshall Cavendish.
- *Pick a Circle, Gather Squares* by Felicia Chernesky. 2013. Chicago: Albert Whitman.

Reference

Gambino, Megan. "A Salute to the Wheel," Smithsonian.com, July 17, 2009. www.smithsonianmag.com/science-nature/a-salute-to-the-wheel-31805121/?no-ist. ■