

2D 3D What Do You See?

Geometry Lesson for Kindergartners

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UTAH CORE STANDARDS

KINDERGARTEN Strand: GEOMETRY (K.G): Identify and describe shapes, including [squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres](#) (Standards K.G.1–3). Analyze, compare, create, and [compose shapes](#) (Standards K.G.4–6). **Standard K.G.1:** Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. **Standard K.G.2:** Correctly name shapes regardless of their orientations or overall sizes. **Standard K.G.3:** Identify shapes as two-dimensional ("flat") or three-dimensional ("solid"). **Standard K.G.4:** Analyze, compare, and sort two- and three-dimensional shapes and objects, in different sizes and orientations, using informal language to describe their similarities, differences, and other attributes (for example, color, size, shape, number of sides). **Standard K.G.6:** [Compose simple shapes to form larger shapes.](#)
DANCE Strand: CREATE (K.D.CR.) Standard K.D.CR.4: Respond to suggestions and change movement through guided improvisational experiences.

LENGTH OF LESSON 60 minutes (two 30 minute sessions or break it down to several 10 minute lessons)

MUSIC AND MATERIALS

Music: "Pahrump" by Cusco for the SHAPE DANCE

"Hawaiian Roller Coaster Ride" by Mark Keali'i Ho'omalulu for the free dance during the 2D and 3D exploration.

Visuals: Pictures of each geometric shape: squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres. Make some small, some medium and some large. You can use these to create composite pictures at the end of the lesson.

Drum

INTRODUCE THE NINE GEOMETRIC SHAPES BY DANCING THE FOLLOWING

Going to a gym would help with the following SHAPE DANCE so you can use the painted lines on the floor. However, if done in a classroom just do the best you can to create the floor pathways for 2 parts of the dance.

Play the song "Pahrump" by Cusco for the SHAPE DANCE.

First have the children slide on all the **CIRCLES** in the gym (or just slide in circle floor patterns in a classroom).

Second have them skip on the **RECTANGLE** lines in the gym (or skip in rectangle floor patterns in a classroom).

Third have them skip to a partner, sit down and make two **SQUARE** shapes with both of their legs and arms.

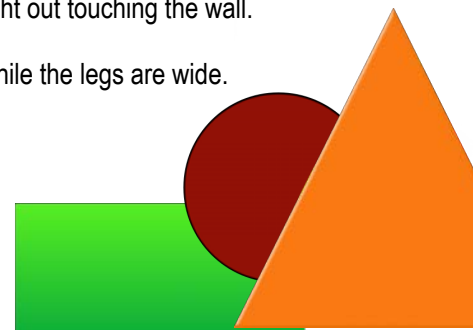
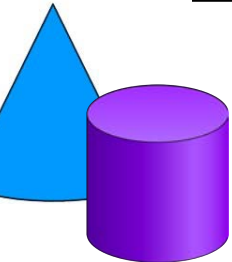
Forth have them roll in a big **SPHERICAL** shape. Have them create a big circle shape with their body and try to roll while maintaining that shape.

Fifth make individual shapes with lots of hidden **TRIANGLES**. Make triangle shapes in their legs, fingers, arms, neck-head-arm, foot-leg-hand, back-arm-arm, etc).

Sixth run quickly to a wall and create a **CUBE** shape. (Sit down with legs and arms straight out touching the wall. Keep the back tall and straight).

Seventh slide to a partner and put all four hands up high in the center touching fingertips while the legs are wide.

Slide around in circles with that partner to create a **CONE** shape.



Eighth sit down with that same partner and create a **HEXAGON** shape. Face each other with legs in a straddle and arms extended parallel to legs. The six lines are: arm/leg, body, arm/leg, arm/leg, body, arm/leg.

Ninth with that same partner create a **CYLINDER** shape. One partner can make a circle shape with their arms down low and their partner can make a circle shape above the arms of their partner or they can create their own cylinder shape.

Practice the SHAPE DANCE one or two more times.

CREATE: QUICKLY RESPOND WITH INDIVIDUAL SHAPES

Now have individuals create the shapes alone and fast.

Say "triangle" and the children quickly make a triangle shape.

Say "cone" and they quickly make a cone shape, etc.

Go through all nine shapes and mix up the order and repeat as desired.

CREATE: ADD VARIATIONS TO THE SIZES

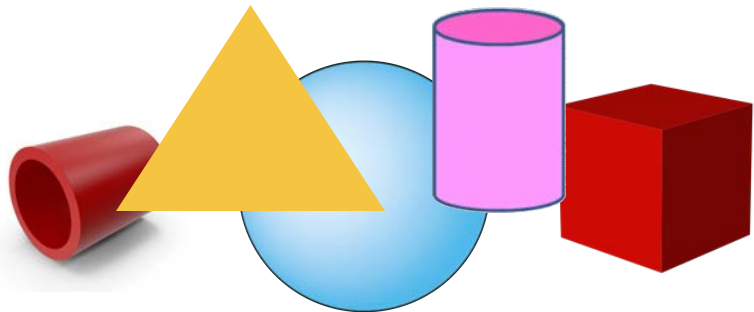
Keep doing the previous activity but vary the sizes.

Make a tiny cone shape. Make a medium sized rectangle. Make a really big circle shape, etc.

2D / 3D

Explain what 2D and 3D shapes are. 2D shapes are "flat" and 3D shapes are "fat". Look at the visuals of the geometric shapes on the wall and ask "is this circle 2D flat or 3D fat? Yes it is 2D. Put the circle under the "2D" column. Is this sphere 2D flat, or 3D fat? Yes! It is 3D. Put the sphere under the 3D column. Put all the shapes in the correct column.

2D	3D
Circle	Sphere
Square	Cube
Rectangle	Cylinder
Hexagon	Cone
Triangle	



RESPOND: APPLY

Now have the children free dance to any music of your choice. A recommendation is

"Hawaiian Roller Coaster Ride" by Mark Keali'i Ho'omalulu.

When the music stops say either "2D" or "3D" and the kids have to quickly choose a shape and create it with their bodies. For example: children free dance; stop the music and say 2D shape!; the kids can choose to make a circle, square, rectangle, hexagon or triangle shape. Wander around the room and point out the 2D shapes. Then play the music again and free dance; stop the music and say either "2D" or "3D". Continue this activity to try many different 2D and 3D shapes.

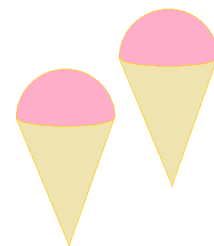
ABOVE / BELOW / BESIDE / IN FRONT OF / BEHIND

Now work with prepositions and the geometric shapes. Have the girls make a shape that you call out, like "hexagon". Then have the boys skip around and until you say, "freeze in a circle shape BESIDES a hexagon shape." Now have the girls skip around until you say "freeze in a triangle shape IN FRONT OF a circle shape." Then have the boys skip around until you say "freeze in a cube shape ABOVE a triangle shape. Then the girls skip around until you say "freeze in a cylinder shape BEHIND a cube shape." Continue this pattern for a while.

PRODUCE: COMPOSITE SHAPES

Now have the children get with a partner to make the following composite shapes:

With the visuals of the basic geometric shapes, put them together to create the following shapes on the wall while the children make the same shapes with their bodies.



- 1 triangle and 1 or 2 circles = single scoop (or double scoop) ice cream cone
 - 1 rectangle and 1 circle = tree or a sucker
 - 1 circle and 2 triangles = animal face with ears - (cat? dog? mouse?)
 - 1 rectangle and 1 skinny rectangle = road sign
 - 1 hexagon and 1 skinny rectangle = stop sign
 - 2 triangles = rectangle or square
 - 3 triangles = Christmas tree
 - 3 circles = snowman
 - 5 triangles and 1 pentagon = star
 - 1 triangle and 1 square = house
- Have the kids make more shapes with the basic shapes.

RESPOND: RESPOND TO THE ENVIRONMENT

Together go on a hunt around the room. Stop when you see one of the 9 geometric shapes and create the same shape with your body. For example tip toe around and stop when you see a clock and quickly make the shape of a circle. Then skip around until you come to a window and stop and make the shape of a rectangle. After you've done about four examples as a class, have the kids go on a hunt by themselves. Watch and evaluate their shapes. Are they making the correct shape that matches the object they found? Ask them what shape they are making and what shape they're matching it to.

