Bridges in Mathematics Kindergarten Unit 5

Two-Dimensional Geometry

In this unit, your student will:

- Identify, describe, sort, and compare twodimensional shapes based on their attributes
- Draw and construct two-dimensional shapes
- Put smaller shapes together to make pictures, designs, and larger shapes
- Sort objects into groups, count how many are in each group, and put the groups in order from least to most

Your student will practice these skills by solving problems such as these:





PROBLEM	COMMENTS
Spin the spinner. Name the shape you spun. Find and trace the same shape hiding in the picture.	Students play games like Shapes & Spinners to practice identifying and drawing shapes. After all shapes are traced, they count and record how many of each they found.

Frequently Asked Questions About Unit 5

Q: My student doesn't recognize triangles unless they look like the one shown in a preschool classroom with one point on top.

A: Young students often think that a shape is different if it is turned differently. They might refer to a triangle with a vertex pointed downward as an "upside down" triangle. To help them understand that a shape stays the same even when its position changes, show them a familiar object, such as a cup or shoe. Turn it in all directions and ask whether it is still the same object. With experience and time, your student will learn that orientation, color, and size are not defining attributes of shapes.

Q: How can I support my student's learning?

A: Try making the language of geometry part of everyday conversations. Next time you are making toast or sandwiches, for example, consider asking your student whether you should cut the bread in rectangles or triangles. Most children have a preference or enjoy making a choice, and doing so provides an opportunity to use the vocabulary. If your kindergartener has had experiences with tricycles or loves dinosaurs, you can talk about how a tricycle has three wheels, a triceratops has three horns, and a triangle has three sides and three corners. Geometry has a unique vocabulary, and we encourage students to use it. Remember, though, that our main goal is to focus attention on the similarities, differences, parts (the number of sides and vertices/corners), and other attributes that define a shape.

To further support your student in learning mathematics, you can:

- Visit <u>mathathome.mathlearningcenter.org</u> and do some or all of the activities in Kindergarten: Set 5 together. These activities complement the learning taking place in the classroom during Unit 5 and provide fun ways to engage children in mathematical thinking. This set also includes digital versions of games that your student has learned at school, such as Hungry Caterpillars and Circles & Squares Race to 20.
- Visit <u>apps.mathlearningcenter.org</u> and invite your student to explore the Pattern Shapes and Geoboard apps. Using these apps, they can create pictures and larger shapes out of smaller shapes as well as practice identifying and describing shapes.
- Encourage your student to point out shapes they see in the illustrations of books you read together this month. Some books to check out include:
 - » Usha and the Big Digger by Amitha Jagannath Knight, illustrated by Sandhya Prabhat
 - » From My Window by Otávio Júnior, illustrated by Vanina Starkoff
 - » So Many Circles, So Many Squares by Tana Hoban
 - » Shapes, Shapes, Shapes by Tana Hoban
 - » Mouse Shapes by Ellen Stoll Walsh
 - » When a Line Bends... A Shape Begins by Rhonda Gowler Greene, illustrated by James Kaczman
 - » Bear in a Square/Oso en un Cuadrado by Stella Blackstone, illustrated by Debbie Harter
 - » Amy Wu and the Patchwork Dragon by Kat Zhang, illustrated by Charlene Chua

Please see the attached Geometry Vocabulary Terms for additional support.

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Geometry Vocabulary Terms

cone

a three-dimensional (solid) shape with a circular or elliptical base and a curved surface that tapers to the vertex

cube a three-dimensional (solid) shape whose 6 faces are all squares



cylinder

a three-dimensional (solid) shape with 1 curved surface and 2 congruent flat ends that are circular or elliptical

edge

the line segment along which 2 faces of a three-dimensional (solid) shape meet



hexagon

a two-dimensional (flat) shape with 6 sides

pyramid

a three-dimensional (solid) shape that has a polygon for a base; its other faces are triangular and meet at a vertex (called the *apex*)



rectangular prism

a three-dimensional (solid) shape with 2 congruent rectangles for bases; its other faces are parallelograms









rhombus a two-dimensional (flat) shape with 4 congruent sides

square a 4-sided,

and 4 right angles





three-dimensional (3-D) shape

a solid shape with depth, width, and height; a shape that has volume

trapezoid

a 4-sided, two-dimensional (flat) closed shape with exactly 1 pair of parallel sides



triangle a two-dimensional (flat) closed shape with 3 sides

triangular prism

a three-dimensional (solid) shape with 2 congruent triangles for bases; its 3 other faces are parallelograms

two-dimensional (2-D) shape

a flat shape with length and width; a shape that has area but not volume

vertex or corner

the point at which the sides of a two-dimensional (flat) closed shape or the edges of a three-dimensional (solid) shape intersect





