

Geometry

In Kindergarten, children continue building their understanding of shapes. They move from using informal (e.g., shaped like a soccer goal) to more formal (e.g., a cone) language to describe and name shapes. They begin to focus on geometric attributes to identify, name, and describe basic two-dimensional shapes presented in a variety of ways (e.g., with different sizes and orientation), as well as three-dimensional shapes, such as cubes, cones, cylinders, and spheres.

Focusing on attributes enables children to move beyond their own notions of what certain shapes should look like to more mathematically refined definitions. For instance, children move from thinking that all triangles have equal-size sides and angles to understand that triangles may have varying appearances due to differences in side length, angle measures, and orientation.

Children use basic shapes and spatial reasoning to model objects in their environment and construct more complex shapes. They analyze and compare two- and three-dimensional shapes having different sizes, orientation, and attributes. They also compose simple shapes to form larger shapes. This concept develops as children manipulate shapes by moving, rotating, flipping, and arranging shapes and other objects, such as puzzles, blocks, and cut-outs, in their classroom and daily living.

The Kindergarten Common Core State Standards for Geometry specify that children should—

- Identify and describe shapes.
- Analyze, compare, create, and compose shapes.

The following hands-on activities enable children to explore shapes and begin to understand that certain attributes define what a shape is while others do not. Mathematically proficient Kindergarteners begin to clearly express, explain, organize, and consolidate their math thinking both verbally and through writing and drawing. Through opportunities that encourage exploration, discovery, and discussion, children in Kindergarten begin to learn how to express opinions, describe their reasoning, and respond to others' thinking and reasoning.