Geometry

Students in third grade describe, analyze, and compare properties of two-dimensional shapes. They compare and classify shapes by their sides and angles, and they use these classifications to define shapes. Students also relate their fraction work to geometry by expressing the area of part of a shape as a unit fraction of the whole.

More specifically, students understand that shapes in different categories may share attributes. They explore properties of shapes to understand that shared attributes can define a larger category. For example, students realize that rhombuses, squares, and rectangles have four sides and that they are all quadrilaterals, and students can identify other examples of quadrilaterals that do not belong to this category. They conceptualize that a quadrilateral must be a closed figure with four straight sides and begin to notice characteristics of angles and relationships between opposite sides.

Students also partition shapes into parts with equal areas. They express the area of the whole. This builds on students' work with fractions and area. Students are responsible for partitioning shapes into halves, thirds, fourths, sixths, and eighths. For example, given a shape, students partition it into equal parts and recognize that the parts all have the same area. They identify the fraction name of each part and are able to partition a shape into parts with equal areas in several different ways.

The Grade 3 Common Core State Standards for Geometry specify that students should–

- Reason with shapes and their attributes.

The following hands-on activities will help students understand the attributes of shapes. The activities will equip students with the experiences necessary to identify squares, rectangles, and rhombuses as quadrilaterals. They should be encouraged to provide details when describing the properties of quadrilaterals. Mathematically proficient third graders use clear and precise language in their discussions with others and in their own reasoning.