Before This Module

Grade 1 Module 6 Part 1

Students describe and name two-dimensional shapes by their defining attributes: number of sides, side lengths, square corners, and parallel sides. They also describe and name various three-dimensional solids, including cubes, cones, cylinders, rectangular prisms, triangular prisms, and pyramids.

Students compose and decompose flat and solid composite shapes in increasingly complex ways. They identify smaller shapes within a composite shape, name composite shapes by using defining attributes, and combine shapes to create composite shapes.

As students partition shapes, they determine whether the parts are equal shares of the whole. Students partition circles and rectangles into 2 and 4 equal parts and name the shares as halves, fourths, and quarters. Students connect their understanding of 1 half to telling time. They reason about the phrase *half past*, relating it to a half-circle and the idea that the minute hand has gone halfway around the clock.

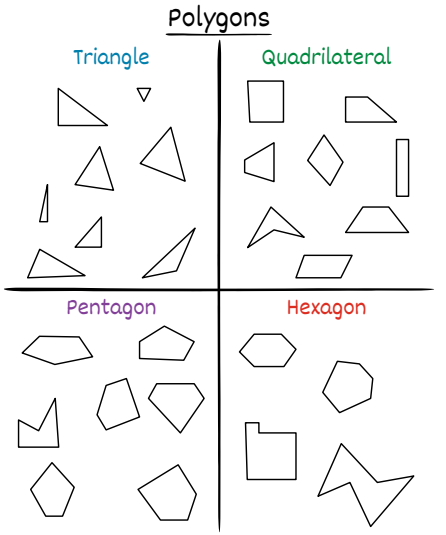
Overview

Shapes and Time with Fraction Concepts

Topic A

Attributes of Geometric Shapes

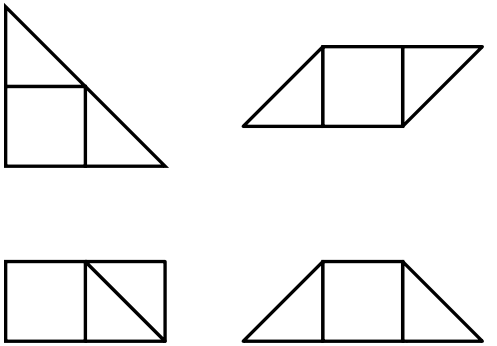
Students recognize and characterize two-dimensional shapes by their defining attributes, such as the number of sides or angles. By using these attributes, students identify, build, and describe polygons, including triangles, quadrilaterals, pentagons, and hexagons. Grade 2 students apply their understanding of right angles, parallel sides, and side lengths to distinguish between different quadrilaterals, noting their similarities and differences. For example, a square is a rhombus with 4 right angles. Finally, students relate the square to its three-dimensional counterpart, the cube, and describe it by the number of edges, faces, and vertices.



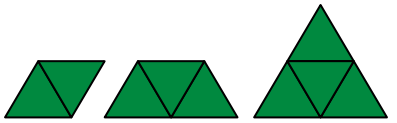
Topic B

Composite Shapes and Fraction Concepts

Students use their part–whole understanding to compose and decompose composite shapes. As they work with tangram puzzles, students come to see that a whole shape can be decomposed into smaller shapes and then recomposed to create a new composite shape. For example, 2 triangles and 1 square can be positioned in different ways to compose different polygons.



Students interpret equal shares within composite shapes by using pattern blocks to show halves, thirds, and fourths. When decomposing a whole into equal parts, students describe the whole as 2 halves, 3 thirds, or 4 fourths.



Topic C

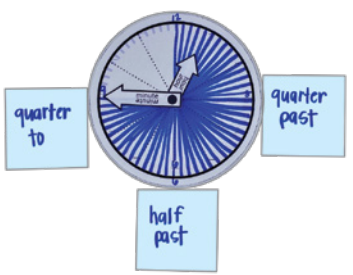
Halves, Thirds, and Fourths of Circles and Rectangles

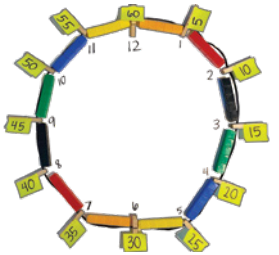
Students partition same-size circles and rectangles into fractional parts and describe them as halves (a half of), thirds (a third of), and fourths (a fourth of) or quarters. Grade 2 students experience an essential understanding of fractions—that larger units have fewer equal parts and smaller units have more equal parts. Students compose a whole out of fractional parts and recognize, for example, that a whole rectangle partitioned into fourths is made of 4 fourths. As students partition circles and rectangles into equal parts, they realize that equal shares of the same whole can have different shapes but cover the same area.

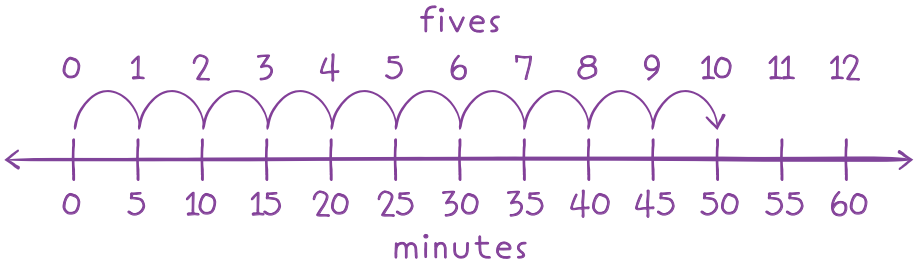
Topic D

Application of Fractions to Tell Time

Students apply their understanding of halves and fourths to concepts about time. After students construct a clock by folding a circle into halves and fourths, they relate these fractional units to benchmark times on the clock, telling the fraction of the hour that has passed. They formalize the meaning of *half past* and learn the meaning of *quarter to* and *quarter past*. Then students build a clock with yarn and unravel it to reveal how a clock is related to a number line. Students read and show times on an analog clock to the nearest 5 minutes and write the time.







After This Module

Grade 3 Module 5

Students transition to understanding fractions as numbers. Students build fractions from unit fractions, representing them concretely, pictorially, and numerically. Students compare fractions with like and unlike units by using a number line. After partitioning number lines, students label equivalent fractions that are less than, and then greater than, 1. Students express whole numbers as fractions with a denominator of 1. Finally, students apply fraction concepts to create a ruler.

Grade 3 Module 6

Students solve elapsed time word problems in minutes, including representing the problem on a number line.

Students describe, define, and sort quadrilaterals by using attributes such as pairs of parallel sides, sides that have the same length, and right angles, and determine attributes that are important to defining a shape. Students see that polygons with the same name, for example, quadrilaterals, can look different and belong to different categories. They use that understanding to draw polygons to match a list of attributes. Students compose polygons to make other polygons and relate the attributes of the individual polygons to the composed polygon.

Students define perimeter, and they find unknown side lengths and perimeters of polygons. They reason about the relationship between area and perimeter and solve multi-step word problems.