

Module 7 Grade 3

In this unit your student will focus on:

- ✓ Practice with word problems, as well as hands-on investigation experiences with geometry and perimeter.
- ✓ Students work on problem solving opportunities for to independently make sense of problems and persevere in solving them, and time for students to share solutions and strategies.

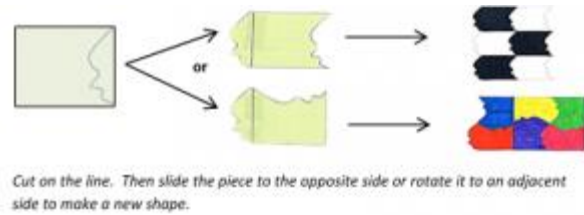


- ✓ They explore the attributes of quadrilaterals and classify examples into various categories, including recognizing the characteristics of polygons
- ✓ Students draw polygons based on their attributes, producing sketches from descriptions like, “This shape has two long sides that are parallel, two short sides, and no right angles.”



- ✓ Students next use tangrams and tetrominoes (see examples above) to compose and decompose shapes. They reason about the relationships between shapes and between attributes.
- ✓ Students tessellate to bridge geometry experience with the study of perimeter. They first decompose a quadrilateral and then rearrange the parts. They use the new shape to tile. Students then define perimeter in

two distinct ways: (1) as the boundary of a planar region and (2) as the length of the boundary curve. Students see varied examples from the tiles used to tessellate.



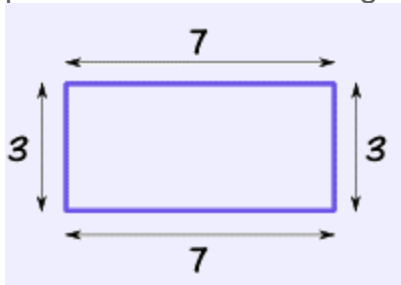
- ✓ They measure side lengths of shapes in whole number units to determine perimeter and solve problems where side lengths are given.
- ✓ Students determine the following:
 - Different perimeters of rectangles
 - Different areas of rectangles comprised of unit squares with a given perimeter.
- ✓ Students use line plots to help them reason and draw conclusions about their data.
- ✓ Students notice and compare differences in the strategies for finding area when given a perimeter and for finding perimeter given an area. By the end of the topic they are able to conclude that there is no direct relationship between area and perimeter, meaning that if an area is given there is no way of knowing a shape's corresponding perimeter.



- ✓ Students review the fundamental Grade 3 concepts of fractions, multiplication, and division.
- ✓ Students analyze and create unusual representations of one-half such as those shown to the right. Students analyze and discuss these representations, using their knowledge of fractions.

Terminology:

- ✓ Attributes – the properties of an object, such as their size or shape
- ✓ Perimeter – the distance around a two dimensional shape. Example the perimeter of this rectangles in $3+7+3+7 = 20$ (www.mathsisfun.com)



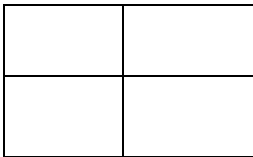
- ✓ Area – the size of a surface. In grade 3, we divide shapes into units or squares of the same size to determine their area. Ex the below figure has an area of 20 units.



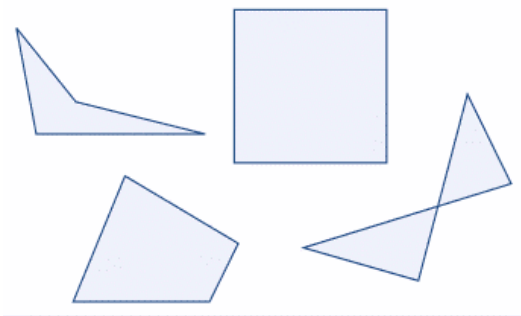
- ✓ Tangrams – A traditional Chinese puzzle that can be divided into seven parts (one parallelogram, one square and five triangles).
(www.mathsisfun.com) Tangrams are used as puzzles that students solve or design.



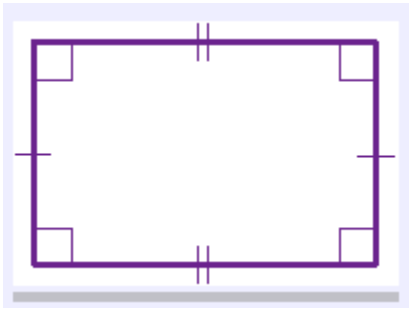
- ✓ Tetronimoes – a geometric shapes made up of four connected squares that are also used to puzzle solve or create designs. These have been made popular by the game Tetris.



- ✓ Quadrilaterals – a flat shape with four straight sides (www.mathsisfun.com)



- ✓ Rectangles – a 4-sided flat shape with straight sides where all interior angles are right angles (90 degrees). Opposite sides are of equal length and parallel.



(www.mathsisfun.com)

- ✓ Tessellations – a pattern made up of repeating shapes that interlock and do not overlap.

Activities you can do at Home:

- ✓ Have students create with origami
- ✓ Play games that involve tessellation
- ✓ Have students solve tangram puzzles
- ✓ Continue to practice multiplication and division through games and song.
- ✓ Have students find the perimeter and area of objects around the house.
- ✓ Consider reading *Grandfather Tang's Story*