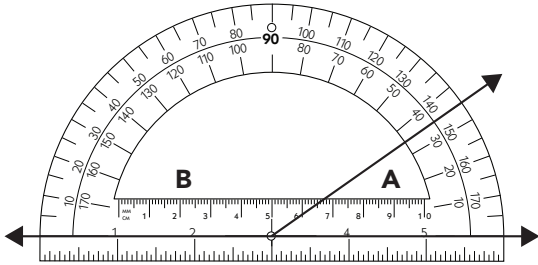## Bridges in Mathematics
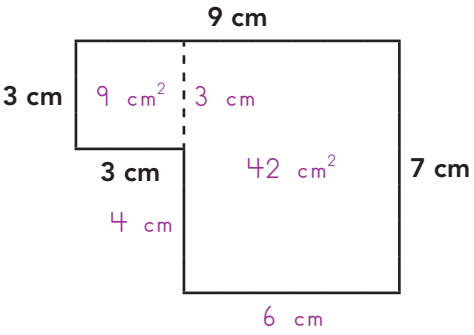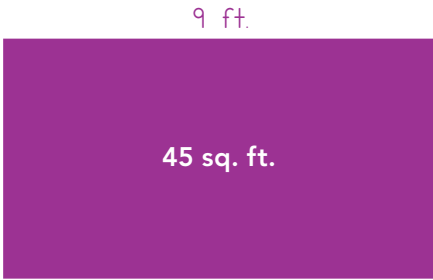## Grade 4 Unit 5

Geometry & Measurement

In this unit your child will:

- Measure angles and determine angle measurements based upon given information

- Sort and classify shapes based upon the number and kinds of sides and angles they have

- Calculate the area and perimeter of rectangles

Your child will learn and practice these skills by solving problems like those shown below. Use the free Math Vocabulary Cards app for additional support: mathlearningcenter.org/apps.

PROBLEM	COMMENTS
Find the area and perimeter of this rectangle. Include the units. 8 cm 6 cm area: __48__ cm^2 perimeter: __28__ cm	In this unit, students practice calculating area and perimeter. What they tend to find challenging is remembering the difference between the two. Area is the total number of square units that can cover a shape, while perimeter is the total number of linear units around the shape. They can calculate the area of a rectangle by multiplying the side lengths. They can calculate the perimeter of a rectangle by adding the side lengths. As you will see, however, students are not always working with simple rectangles. The more complicated shapes they encounter later in the unit will require them to apply their understanding of both area and perimeter in flexible ways.
The measure of angle A is __35__ degrees. The measure of angle B is __145__ degrees. B A	In class, students will use protractors to measure and draw angles. They use key angles, such as straight angles (180 degrees) and right angles (90 degrees) to estimate the size of other angles.

PROBLEM	COMMENTS
9 cm **3 cm** 9 cm² ¦ 3 cm **3 cm** 42 cm² **7 cm** 4 cm 6 cm	Students find the area and perimeter of a variety of rectilinear shapes. A rectilinear shape can be decomposed into rectangles. The student in this example decomposed the shape into a 3-by-3 cm square and a 6-by-7 cm rectangle. Another student might have thought about a 7-by-9 cm rectangle with a 3-by-4 cm rectangle cut out of it. Students use their understanding of and ability to calculate area and perimeter to solve problems like this one. They also use what they understand about rectilinear shapes to determine the missing side lengths: one is 6 cm, because 3 cm + 6 cm = 9 cm, and the other is 4 cm, because 3 cm + 4 cm = 7 cm.
Mr. Flores bought a rug for his classroom. One side is 5 feet long. The total area of the rug is 45 square feet. What is the perimeter of the rug? 9 ft. **5 ft.** 45 sq. ft. 5 × 9 = 45, so the other side must be 9 ft. 9 + 9 + 5 + 5 18 + 10 28 ft. The perimeter is 28 ft.	When solving problems like this one, students use what they know about the relationships among a rectangle's dimensions, area, and perimeter. They also use algebraic thinking skills. For example, they determine they must first find the unknown dimension and then work from there to calculate the perimeter.

FREQUENTLY ASKED QUESTIONS ABOUT UNIT 5

Q: A lot of the problems ask students to draw shapes, but I don't know how. How can I help?

A: There are many ways to respond correctly to these prompts: you can draw quite a few different shapes that fit each description. If you can't remember the vocabulary terms, you can use the Word Resource Cards app (see previous page) to help or consult any number of online math glossaries for kids. Then, have your child start drawing, and encourage them to use to the dots in the drawing area. Have them use a pencil so they can erase as needed. Encourage them to use as much of the drawing space as they can: starting with larger shapes will given them more flexibility if they need to revise their shapes.