BE A MATH NINJA

ACTIVITY INSTRUCTIONS

Lesson: Shape Up!

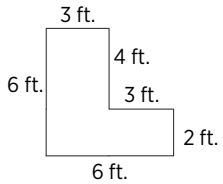
Tiered For: Grade 3 (or additional challenge/review for other grades)

Objective: Students will be able to determine the area of a rectilinear figure by dividing it into two or more rectangles.

Materials: Student Worksheet on next page

1. Review methods for calculating the area of a rectangle. Draw a 6 x 8 rectangle on the board. Demonstrate that area can be determined by drawing a grid of six rows of eight squares, one unit square each inside the rectangle. Also demonstrate the length-times-width formula.

2. Copy the following drawing onto the board:



3. Ask the class how to determine the area of this figure. Point out that the figure can be divided into two rectangles. Draw a vertical line straight down as a continuation of the 4 m segment. This divides the figure into a 3 m x 6 m rectangle (area = 18 square meters) and a 3 m x 2 m rectangle (area = 6 square meters). 18 square meters plus 6 square meters equals 24 square meters.

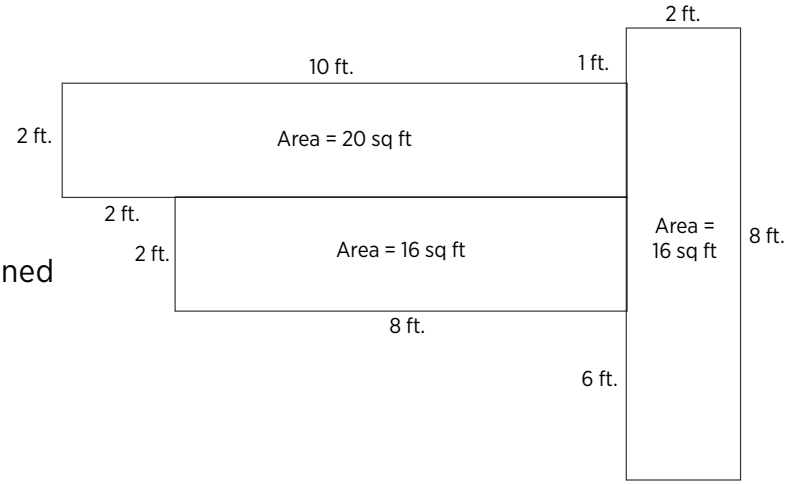
4. Also show that the same result could be obtained by drawing a horizontal line across as a continuation of the lower 3 m segment. This divides the figure into a 6 m x 2 m rectangle (area = 12 square meters) and a 3 m x 4 m rectangle (area = 12 square meters). 12 square meters plus 12 square meters equals 24 square meters.

5. Distribute Student Worksheet. The worksheet can be completed individually, in pairs, or as a class.

6. Review answers as a class.

Answer Key:

1) Total area equals 52 sq ft. The figure can be divided into smaller rectangles and the areas of the smaller rectangles can be determined and added together. One solution is:

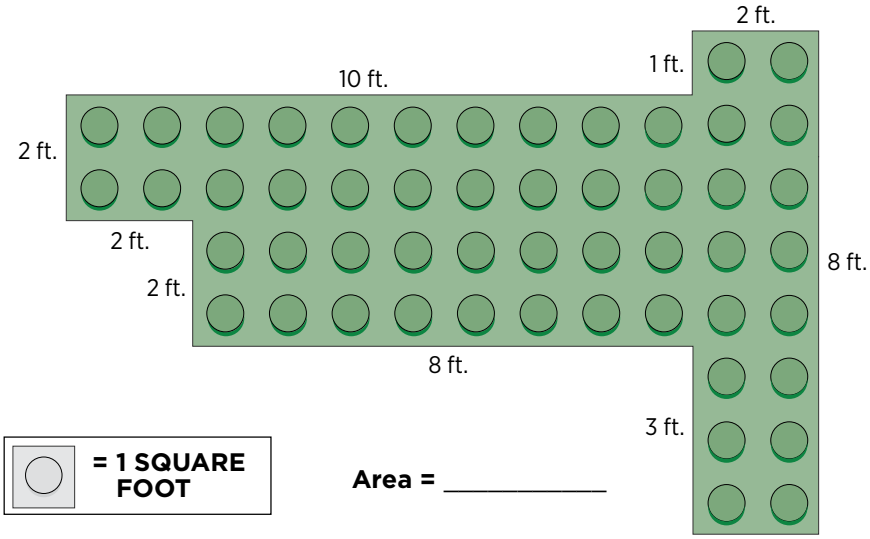


2) The areas of the smaller rectangles are 4 sq ft, 6 sq ft, 8 sq ft, and 8 sq ft. Added together, the area is 26 sq ft.

Shape Up!

Nya is on a mission to retrieve powerful magic objects from a cave when she is caught in Garmadon's trap! Her escape is blocked by two enchanted locks. To free herself, she must discover the key code that will open the mystical locks.

1 To discover the key code for the first lock, find the area of this devilishly unusual shape!



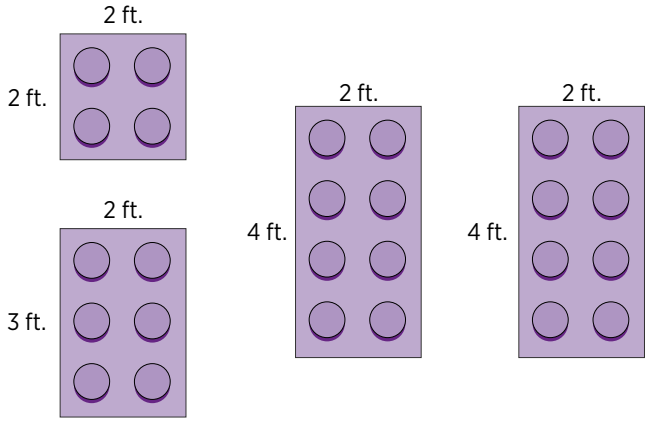
= 1 SQUARE FOOT

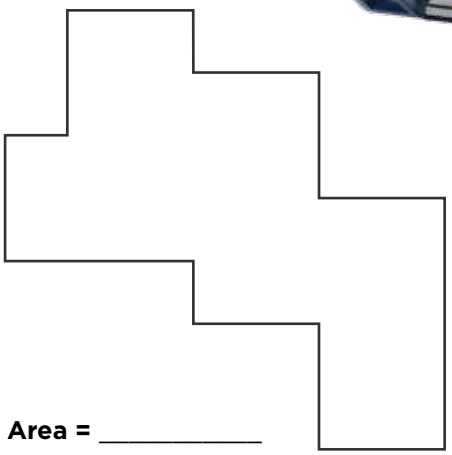
Area = _____

Nya's Knowledge

Break down the unusual shape into separate rectangles. Figure out those rectangles' areas and add them together for the total area.

2 To find the key code to the second lock, cut out the shapes on the left and completely cover the shape on the right. Then, find the area of the shape on the right.





Area = _____