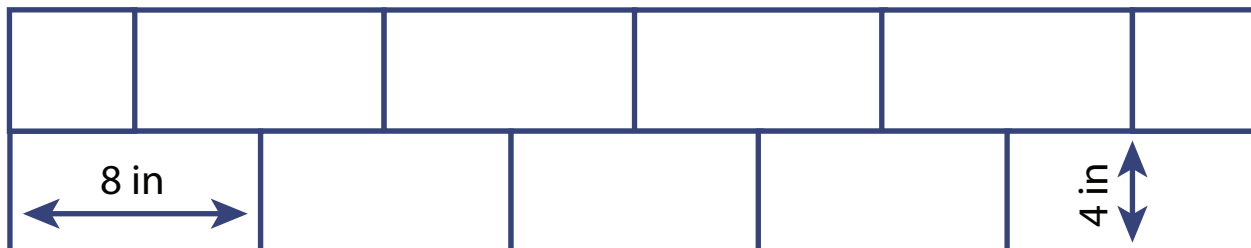


MEASURING TESSELLATIONS

An architectural designer was commissioned to build an art gallery. She wanted to display the art on a unique background and decided to use exposed brick walls inside the gallery.

The architect recognized the brick wall can be modeled as a tessellation of rectangles.



The architect used the tessellation to perform several calculations.

1. What are the dimensions (length x height) of a single tile in the tessellation?

A brick represents each tile in the tessellation. Therefore, the dimensions are 8 inches x 4 inches.

2. What is the area of a single tile in the tessellation?

Each brick is 8 inches x 4 inches. Therefore, the area is:

$$A = (8)(4) = 32 \text{ inches}^2$$

3. The wall for modern art is 8 feet long. How many bricks are needed to span the length of the wall?

First convert feet to inches.

$$(8 \text{ ft}) \left(\frac{12 \text{ inches}}{1 \text{ ft}} \right) = 96 \text{ inches}$$

Each brick is 8 inches long. Therefore, divide to determine the number of bricks needed.

$$\text{Number of bricks} = \frac{96 \text{ inches}}{8 \text{ inches}} = 12 \text{ bricks}$$

MEASURING TESSELLATIONS

4. The wall for modern art is 12 feet tall. How many bricks are needed to span the height of the wall?

First convert feet to inches.

$$(12 \text{ ft}) \left(\frac{12 \text{ inches}}{1 \text{ ft}} \right) = 144 \text{ inches}$$

Each brick is 4 inches tall. Therefore, divide to determine the number of bricks needed.

$$\text{Number of bricks} = \frac{144 \text{ inches}}{4 \text{ inches}} = 36 \text{ bricks}$$

5. How many bricks are needed to cover the modern art wall?

$$\text{Total number of bricks} = (36)(12) = 432$$