Dear Parents,

Your 3rd grader will be diving into developing conceptual understanding of area in this unit. They will learn that area of a plane figure can be measured by determining how many square units it takes to cover the figure with no gaps or overlaps. Students will connect their work with arrays and repeated addition (learned in Grade 2) to understand why multiplication of side lengths can be used to find the area of a rectangle. Without being told the formula to find area, students will explore the concept of area using concrete objects in order to discover the rule for finding the area of a rectangle.

Thank you for your support,

Your Child’s 3rd Grade Teacher

Vocabulary

Previously, your child learned that **area** is the number of square units that cover a shape, and then just counted the squares to find the area. When the shape is a rectangle, you can use multiplication to find the number of square units that cover the shape.

In this rectangle, there are 5 rows each with 3 square units.

\[ 3 \times 5 = 15 \text{ tells how many square units in all.} \]

There are 3 columns, each with 5 square units.

\[ 3 \times 5 = 15 \text{ tells how many square units in all.} \]

The area of this rectangle is 15 square units.

To find the area of any rectangle, multiply the length times the width (or the width times the length).

\[ 4 \times 2 = 8 \]
\[ 2 \times 4 = 8 \]

The area of this rectangle is 8 square centimeters.

**Area**: the amount of space inside a closed two-dimensional figure.

**Square Unit**: a square with side lengths of 1 unit that is used to measure the area of a figure.

Think about it!

**Rectangular Snack Trays**

At the community center Max meets an artist who weaves trays. Max asks the artist to make two snack trays for him. Max’s ideas are shown below.

**My Ideas**
- Each tray is shaped like a rectangle.
- Both trays have the same area.
- The perimeter of each tray is different.
- The area of each tray is less than 100 square inches.

What size trays can Max ask the artist to make?
Strategies to Support Student Learning

Use *square units* to cover a plane figure with no gaps or overlaps to determine the *area* of the figure.

When we tile a rectangle with square units we can use *multiplication* to find the area because the square units form an *array*.

\[
2 \times 6 = 12 \text{ square units}
\]

Use *multiplication* to determine the area and solve real-life problems.

Gwen grows vegetables in her garden.

She planted 3 rows of cabbages with 5 cabbages in each row.

Each cabbage needs a 1 foot by 1 foot unit square of soil to have enough space to grow.

How big is the area planted with cabbages?
Your parents have decided to paint your bedroom. They have asked you to research how much it will cost to paint two coats of paint on your bedroom walls and ceiling.

- Visit your hardware store online, or in your local community, and select the color(s) that you would like to paint your bedroom walls and ceiling.
- Measure and calculate the area of each wall in your bedroom. Remember you are not painting doors or windows.
- Calculate the number of cans of paint you will need to purchase, the cost of the paint, and the cost of any other supplies you think you may need (example, paint brushes, tape), and the total cost to paint the ceiling and walls of your bedroom with two coats of paint.

Be sure to show all calculations and explain the steps you took to complete this project.

Real World Task

Discuss with students how the unit of measurement is important in finding area. Square inches and centimeters should not be used to measure larger areas because they would need to use too many. Square meters and feet cannot be used to measure areas that are smaller than one square unit.

Which square unit would you use to make the following area measurements? Write each one in the best column, then write about how you made your choices.