Grade 3 Parent Newsletter

Theme 3 Unit 9

Dear Parents,

Your third grader will be using whole number factors within 100 to determine the product. Through investigation and hand on exploring students will begin seeing patterns and making generalizations about multiplication and how it connects to properties of multiplication. In this unit students will be discovering the Commutative Property (4 x 3 = 3 x 4) using tiles (manipulative) in order for them to see that if the array is rearranged, the product remains the same. Students will also explore decomposing a rectangle in order to determine the area of the shape. Through this exploration students begin to understand the Distributive Property of multiplication, and how breaking apart factors make the multiplication problem easier to solve. This discovery builds on students' understanding of area and gives them a strategy for moving past counting individual squares to find the total area. To end the unit, students apply their understanding of finding the area of rectangles and using the distributive property to find the area of rectangles that is rectilinear and begin seeing that area is additive.

Thank you for your continued support,

Your Child's 3rd Grade Teacher

How can you help your child be successful in mathematics?

Children learn math best when they can connect math concepts and procedures to their everyday experience.

- Be positive about math! Let your child know that everyone can learn math.
- Point out how math is used in daily activities.
- Include your child in activities that involve math, such as measuring an area in your house and determining the amount of flooring needed, or measure the shower to determine the amount of tiles needed and then shop of materials.
- Play math-related games with your child.
- Encourage your child to explain his/her thinking when solving problems.
- Make connections between real world situations involving area and multiplication.

When a math moment presents itself, make the most of it!

Vocabulary

Area: the amount of space inside two dimensional figure.

Array: a set of objects arranged in equal rows and equal columns.

Distributive Property: Break apart a factor as a strategy for multiplying.

Commutative Property: Numbers can be multiplied in any order and the product will be the same.

Factor: a number that is multiplied.

Product: the result of multiplication.

To find the area of *any* rectangle, multiply the length times the width (or the width times the length).
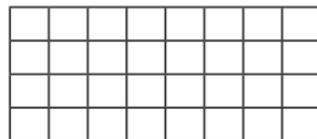
$4 \times 2 = 8$
$2 \times 4 = 8$

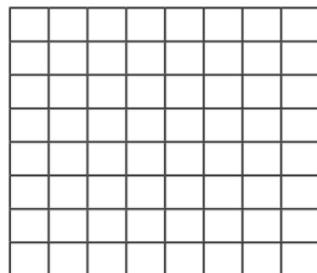The area of this rectangle is 8 square centimeters.

2 centimeters

4 centimeters

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Think about it!

Sara used tiles to find the area of a kitchen floor and a bathroom floor. What equations would be used to find the total area of the space?
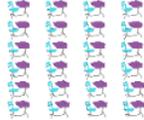
←Bathroom

←Kitchen

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Strategies to Support Student Learning

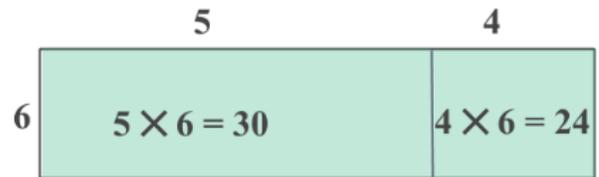Switching the order of the factors to arrive at the same product.

$4 \times 6 = 24$

$6 \times 4 = 24$

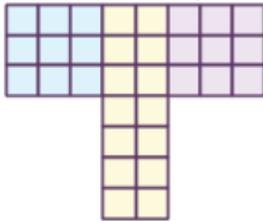Split a rectangle into two smaller rectangles to solve for the area.

	5	4
6	$5 \times 6 = 30$	$4 \times 6 = 24$

$30 + 24 = 24$

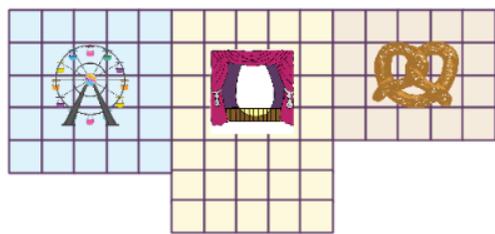
Add the areas of the non-overlapping rectangles to find the total area.
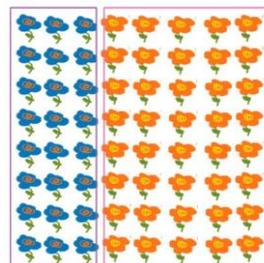
$9 + 14 + 9 = 32$ square units

Use skills of finding areas to solve real-world problems.

Area of an Amusement Park

8 x 8 Flower Garden

4x8=32

5x8=40

$32 + 40 = 72$

Activities to Support Home-to-School Connection

Taken from Ready Common Core ©Curriculum Associates, LLC

Activity to Explore Changing the Order of Factors

Materials: 24 pennies, or other small items

Do this activity with your child to demonstrate why changing the order of the factors in a multiplication fact doesn't change the product.

- Count out 12 pennies. Work together to arrange them in an array with 3 rows of 4 pennies in each row.

$3 \times 4 = 12$

- Then arrange the other 12 pennies in an array with 4 rows of 3 pennies in each row.

$4 \times 3 = 12$

- Try again with 2 rows of 6 and then 6 rows of 2.
- Discuss with your child, with questions such as these:
  - Does changing the order of the factors change the number of pennies?
  - Do you think this will always be true?
  - Does changing the order of the factors make either of the related multiplication facts easier for you?

If I can't remember 3×4 but I know 4×3, then I can remember 3×4!

Multiplying to Find Area Activity

Materials: inch ruler or yardstick, calculator, pencil and paper

Practice using multiplication to find the area of different rectangular surfaces with your child.

Have a five-minute *Area Scavenger Hunt*.

Each player looks around the house for two rectangular objects. The goal is to find one with a "small" area and one with a "large" area.

Determine who found the larger rectangle.

- Measure the length and the width of the two "larger" rectangles.
- Use a calculator to multiply the length and width of each rectangle to calculate the area in square units (square inches, square feet, or square yards).
- Was the result what you expected?

Determine who found the smaller rectangle.

- Measure the length and the width of the two "smaller" rectangles.
- Use a calculator to multiply the length and width of each rectangle to calculate the area in square units (square inches, square feet, or square yards).
- Was the result what you expected?

Discuss with your child whether there could be another rectangle with the same area as yours, but with different length and width. For example, if you know a rectangle has an area of 24 square inches, what could the length and width be?

Real World Connections

How does your garden grow?

Make connections to how to arrange different plants in a garden.

a 4 x 3 garden will look different than a 3 x 4 garden, but the

total number of plants remains the same. Build a garden in your

backyard and discuss different ways to arrange the plants.

Think about other real-world connections:

- Arranging chairs in equal rows (6 rows of 8 chairs = 8 rows of 6 chairs)
- Books on a book shelf (5 shelves of 4 books = 4 shelves of 5 books)
- Swim Team (7 swimmers in 3 rows = 3 swimmers in 7 rows)

Mary is going to plant a garden of blue and orange flowers. She has enough flowers to plant 8 rows of flowers with 8 flowers in each row. She has more blue flowers than orange flowers and wants to make full rows of blue flowers and full rows of orange flowers.

Using arrays, show two ways Mary could divide her garden among the blue and orange flowers. Describe the blue and orange flower sections using a numerical expression.
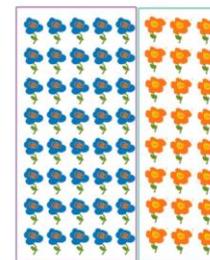
Task Solution

Option One:

Blue Flowers:
8 x 6
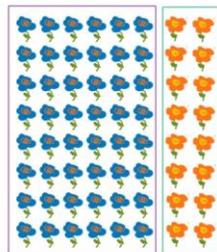
Orange Flowers:
8 x 2

8 x 8 = 8 x 6 + 8 x 2

Task Solution

Option Two:

Blue Flowers:
8 x 5

Orange Flowers:
8 x 3

8 x 8 = (8 x 5) + (8 x 3)