

Dear Parents,

We will begin our next unit of study in math soon. The information below will serve as an overview of the unit as you work to support your child at home. If you have any questions, please feel free to contact me. I appreciate your ongoing support. For additional information or electronic access to this letter, please visit www.wcpss.net/mathhelp.

Sincerely,

Your Child's Teacher

Unit Name: Applying the Operations to Area & Perimeter

North Carolina Content State Standards:

NC.3.MD.5 Find the area of a rectangle with whole-number side lengths by tiling without gaps or overlaps and counting unit squares.

NC.3.MD.7 Relate area to the operations of multiplication and addition.

- Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
- Multiply side lengths to find area of rectangles with whole-number side lengths in the context of problem solving, and represent whole-number products as rectangular areas in mathematical reasoning.
- Use tiles and/or arrays to illustrate and explain that the area of a rectangle can be found by partitioning it into two smaller rectangles, and that the area of the larger rectangle is the sum of the two smaller rectangles.

NC.3.MD.8 Solve problems involving perimeters of polygons, including finding the perimeter given the side lengths, and finding an unknown side length.

Math Language:

- | | | | |
|------------------|-------------|-----------|-------------------------|
| ● Measurement | ● Area | ● Side | ● Square Unit |
| ● Multiplication | ● Perimeter | ● Lengths | ● Commutative Property |
| ● Linear Unit | ● Rectangle | ● Square | ● Distributive Property |
| ● Hexagon | ● Polygon | | |

Unit Overview:

This unit will focus on building an understanding of area and perimeter by applying students' understanding of the attributes of rectangles and squares. Students will be learning about the relationship between addition, multiplication, and area. Through hands-on exploration using square tiles, students will learn that area is the amount of space inside a two-dimensional shape, measured in square units. They will use their multiplication strategies of equal groups and arrays (rows and columns) to discover and understand the area of a rectangle can be found by multiplying length times width. However, memorizing the formula for area is NOT the focus of this work. Students will learn that perimeter is the distance around a two-dimensional figure (polygon) measured in linear units. They will find perimeter by adding the side lengths and find the side length of an unknown side. Students will be given experiences to solidify area and perimeter concepts by applying their knowledge to solve real-world story problems and deciding whether or not answers are reasonable.

Skills/Strategies:

- Find the area of a rectangle by tiling without gaps or overlaps
- Multiply side lengths to determine the area of rectangles when problem solving
- Illustrate and explain that the area of a rectangle can be determined by partitioning
- Use the sum of two smaller rectangles to find the area of a larger rectangle
- Find the unknown side lengths given the perimeter of the polygon

Strategies that Students will Learn:

- Using square-inch tiles to find the area and perimeter of a figure
- Tiling
- Grid Paper
- Commutative and Distributive Properties

Students will apply their knowledge from the previous unit on shapes and their attributes to understanding equal rows and columns. For example, if one side of a picture is 8 inches long and the other side is 6 inches long, then area can be determined by adding or multiplying.

This photo needs a frame and glass cover. Use what you know about area and perimeter in order to find the measurements for the frame and glass.



Perimeter: $8+6+8+6 = 28$

Area:

$8+8+8+8+8+8 = 48$

6×8 (6 groups of 8) = 48

$6+6+6+6+6+6+6+6 = 48$

8×6 (8 groups of 6) = 48

Video Support:

Video support can be found on The WCPSS Academics YouTube Channel.

<http://tinyurl.com/WCPSSAcademicsYouTube>

- [ES 3 Math Whole Number Perimeter Drawing](#)
- [ES 3 Math Whole Number Area Model](#)
- ES 3 Math Cover the area of a shape using square units
- ES 3 Math Find the area of a square or rectangle by counting unit squares
- [ES 3 Math Relate area to arrays](#)
- ES 3 Math Find area of a rectangle using arrays
- ES 3 Math Given the area find missing side lengths of a rectangle
- ES 3 Math Find the perimeter of a square or rectangle by adding side lengths
- ES 3 Math Find the perimeter of a polygon with more than four sides
- ES 3 Math Find perimeter with missing side lengths

Additional Resources:

- [NCDPI Additional Resources](#)

Questions to Ask When Helping Your Child with Math Homework

Keep in mind that homework in elementary schools is designed as practice. If your child is having problems, please let the classroom teacher know. When helping your child with his/her math homework, you don't have to know all the answers! Instead, we encourage you to ask probing questions so your child can work through the challenges independently. Some examples may include the following:

- What is the problem you're working on?
- What do the directions say?
- What do you already know that can help you solve the problem?
- What have you done so far and where are you stuck?
- Where can we find help in your notes?
- Are there manipulatives, pictures, or models that would help?
- Can you explain what you did in class today?
- Did your teacher work examples that you could use?
- Can you go onto another problem & come back to this one later?
- Can you mark this problem so you can ask the teacher for an explanation tomorrow?