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.

Sincerely,
Your Child's Teacher

Unit Name: Explore Multiplicative Comparison, Area and Perimeter, Factors, and Multiples

North Carolina Content State Standards:

NC.4.OA.1
Interpret a multiplication equation as a comparison. Multiply or divide to solve word problems involving multiplicative comparisons using models and equations with a symbol for the unknown number. Distinguish multiplicative comparison from additive comparison.

NC.4.OA.3
Solve two-step word problems involving the four operations with whole numbers.
- Use estimation strategies to assess reasonableness of answers.
- ~~Interpret remainders in word problems.~~
- Represent problems using equations with a letter standing for unknown quantity.

NC.4.OA.4
Find all factor pairs for whole numbers up to and including 50 to:
- Recognize that a whole number is a multiple of each of its factors.
- Determine whether a given whole number is a multiple of a given one-digit number.
- Determine if the number is prime or composite.

NC.4.MD.3
Solve problems with area and perimeter.
- Find areas of rectilinear figures with known side lengths.
- Solve problems involving a fixed area and varying perimeters, and with a fixed perimeter and varying areas.
- ~~Apply the area and perimeter formulas for rectangles in real world and mathematical problems.~~

Math Language:

• Area	• Square Unit	• Array	• Equation
• Unknown	• Factor	• Multiple	• Dimensions
• Orientation	• Product	• Prime	• Composite
• Multiplicative Comparisons	• Additive Comparisons	• Perimeter	•

Unit Overview:

In this unit, students will expand their understanding of multiplication to include multiplicative comparisons, including solving problems with these contexts. Students will continue to develop the concept of area based on the array model, using that model to explore factors, multiples, and prime and composite numbers. This leads into an exploration of both area and perimeter, including fixed areas and fixed perimeters, and formulate conclusions about the relationship between area and perimeter.

Over the course of this school year, students will be asked to use multiplication in many ways. The fourth grade standards call for students to compare two amounts using multiplication, find

area by multiplying, determine factors and multiples, develop strategies for multiplying and dividing larger numbers, and solve word problems involving multiplication and division. All of these concepts are made easier when students are able to quickly and accurately recall their multiplication facts.

Skills/Strategies:

Students will be able to:

- Find all factor pairs for whole numbers up to and including 50
- Determine whether a given whole number is a multiple of a one-digit number
- Determine if a number is prime or composite
- Multiply to solve word problems involving multiplicative comparisons
- Solve problems involving area and perimeter, including problems involving a fixed area and varying perimeters, and a fixed perimeter and varying areas
- Solve two-step word problems involving the four operations with whole numbers

Video Support:

Video support can be found on LearnZillion.

- http://learnzillion.com

Find all the factor pairs of a number using area models

- https://learnzillion.com/lessons/780-find-all-the-factor-pairs-of-a-number-using-area-models

Determine multiples of a number using area models

- https://learnzillion.com/lessons/781-determine-multiples-of-a-number-using-area-models

Determine if a number is prime or composite using area models

- https://learnzillion.com/lessons/786-determine-if-a-number-is-prime-or-composite-using-area-models

Comparing numbers using bar models

- https://learnzillion.com/lessons/2569-comparing-numbers-using-bar-models

See multiplication as a comparison using number sentences

- https://learnzillion.com/lessons/2543-see-multiplication-as-a-comparison-using-number-sentences

Compare numbers using additive and multiplicative comparisons

- https://learnzillion.com/lessons/2891-compare-numbers-using-additive-and-multiplicative-comparisons

Represent unknown numbers using symbols or letters

- https://learnzillion.com/lessons/2744-represent-unknown-numbers-using-symbols-or-letters

Solve multiplicative comparison word problems by using bar models

- https://learnzillion.com/lessons/2745-solve-multiplicative-comparison-word-problems-by-using-bar-models

Solve multiplicative comparison word problems by using bar models to represent division

- https://learnzillion.com/lessons/2851-solve-multiplicative-comparison-word-problems-by-using-bar-models-to-represent-division

Solve multiplicative comparison word problems using multiplication or division

- https://learnzillion.com/lessons/3017-solve-multiplicative-comparison-word-problems-using-multiplication-or-division

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?