

MTB4's Focus on Critical Areas in Grade 3

In Grade 3, students focus on the following areas as designated by the Common Core State Standards. Concepts and procedures are regularly revisited throughout the year as students' understanding builds and deepens.

- **Developing understanding of multiplication and division and strategies for multiplication and division within 100.**

In Units 3–13, students systematically review and are assessed on small groups of multiplication and the related division facts that can be solved using similar strategies to maintain and increase proficiency. This practice can be found regularly in the Daily Practice and Problems and Home Practice.

Unit	Multiplication Facts Group	Focus
3	5s and 10s	Development of mental strategies and number sense
4	2s and 3s	
5	Square Numbers	
6	9s	
7	Last Six Facts	
8	5s and 10s	Use strategies fluently
9	2s and 3s	
10	Square Numbers	
11	9s	
12	Last Six Facts	
13	Last Six Facts	

In Unit 3, students build on what they know about addition and subtraction to solve and represent multiplication and division stories. Students develop mental strategies for solving multiplication situations. They use drawings and number sentences to represent solution strategies and reasoning.

In Unit 4, students revisit composing, decomposing, and partitioning numbers with variety of place value representations to develop models for multiplying, dividing, and comparing larger numbers.

In Unit 8, students focus on identifying patterns and developing generalized strategies for solving the multiplication facts and the related division facts. Students revisit and extend strategies such as repeated addition and skip counting. The rectangular array model is introduced to support students' reasoning from known facts to find a product (break-apart products). This model is used to explore the relationship between multiplication and division and turn-around facts. Students learn how to identify and use the multiplication properties of zero and one.

Unit 10 continues the study of multiplication and division. Students encounter many types of problems and learn to use a graph and a data table as models to solve

problems and reason quantitatively. These concepts serve as a foundation for development of whole number computation with multiplication and division as well as fractions, and proportional reasoning.

In Unit 12, students expand their experiences with multiplication and division by representing the relationship between quantitative variables as a best-fit line on a point graph and in a data table. Students first review the use of the coordinate plane to locate points on a map and look for linear patterns.

In Unit 13, students solve problems involving multiplication of two-digit by one-digit numbers and division problems that cannot be solved just by using fact families. They solve multiplication problems by breaking products into the sums of simpler products and write stories that represent their arithmetical processes in a meaningful way. This work leads to the conceptual development of a paper-and-pencil algorithm for multiplication of two-digit by one-digit numbers. Students solve division problems that deal with remainders in various ways and multistep problems that involve both multiplication and division. Students then apply and extend their knowledge of operations using volume as a context.

- **Developing understanding of fractions, especially unit fractions (fractions with numerator 1).**

In Unit 9, students use multiple representations and real-world contexts to support their development of fraction concepts and the ability to visualize fractional parts. Students then make connections and translate between representations to compare, order, and find equivalent fractions.

In Unit 10, students use models to solve problems and reason quantitatively. These concepts serve as a foundation for development of whole number computation with fractions, proportional reasoning, multiplication, and division.

- **Developing understanding of the structure of rectangular arrays and of area.**

In Unit 5, students find the area of shapes with straight and curvy sides by putting pieces of units together as well as counting whole units. Students then apply this measurement skill as they analyze and create different shapes with the same area.

In Unit 8 the rectangular array model is introduced to support students' reasoning from known facts to find a product. This model is used to explore the relationship between multiplication and division and turn-around facts.

- **Describing and analyzing two-dimensional shapes.**

In Unit 5, students find the area of shapes with straight and curvy sides by putting pieces of units together as well as counting whole units. Students then apply this measurement skill as they analyze and create different shapes with the same area.

Unit 11 focuses on analyzing two-dimensional and three-dimensional shapes. In the first part of the unit, students explore the properties of the tangram pieces by composing and decomposing shapes with the pieces. Students also measure and analyze the area and perimeter of shapes made with the tans. During the second part of the unit, students describe, construct, and classify three-dimensional shapes using their properties: edges, vertices, faces.