



Second Nine Weeks – Topics and Concepts to be covered during the second quarter of the year

Tennessee Standards	Learning Outcomes	Content
Weeks 1-2: Multiplication Properties and Patterns		
<p>3.OA.B.5 Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.) <i>Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.)</i> <i>$3 \times 5 \times 2$ can be solved by $(3 \times 5) \times 2$ or $3 \times (5 \times 2)$ (Associative property of multiplication.)</i> <i>One way to find 8×7 is by using $8 \times (5 + 2) = (8 \times 5) + (8 \times 2)$. By knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, then $8 \times 7 = 40 + 16 = 56$. (Distributive property of multiplication over addition.)</i> *These properties should be taught thoroughly through the Concrete-Pictorial-Abstract approach to ensure depth of understanding. You may wish to break up the three properties more throughout the year and focus on just commutative and associative now and save distributive property for when you teach the area standards.</p> <p>3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>For example, analyze patterns in the multiplication table and observe that 4 times a number is always even (because $4 \times 6 = (2 \times 2) \times 6 = 2 \times (2 \times 6)$), which uses the associative property of multiplication</i></p> <p>3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.</p>	<p>Learning Targets</p> <p>I can explain how the products are found using these strategies.</p> <p>I understand that the order of the factors doesn't matter.</p> <p>I understand that when I have more than two factors, I can rearrange them to make an easier problem.</p> <p>I can decompose a factor into two parts and multiply by the other factor and find the sum of those parts to find the product.</p> <p>I can explain arithmetic patterns using properties of operations.</p> <p>I can multiply one digit whole numbers by multiples of 10.</p> <p>Enduring Understandings For a given set of numbers, there are</p>	<p>GO! Math</p> <p>3.6 Commutative Property of Multiplication 4.4 Distributive Property 4.6. Associative Property of Multiplication</p> <p>4.7 Patterns on the Multiplication Table</p> <p>5.4 Multiplication Strategies with Multiples of 10 5.5 Multiply 1-Digit Numbers by Multiples of 10</p> <p>NYEngage Module 3, Lesson 17 has a lesson specifically about patterns in a multiplication chart.</p> <p>Vocabulary: properties, Commutative Property, Identity Property, Zero Property, Associative Property, Distributive Property, multiples</p> <p>Mathematical Practices Focus</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 7. Look for and make use of structure. <p>Math Task Suggestions: Instructional and Assessment Tasks: http://www.edutoolbox.org/tntools</p> <p>Accountable Talk Stems:</p> <ul style="list-style-type: none"> ▫ Did everyone hear that? ▫ Can someone repeat what was just said?



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	<p>relationships that are always true called properties, and these are the rules that support arithmetic with fluency. Students do not need to use the formal terms for these properties, but all of these applications should be explored concretely through models then related to the equation/expression.</p> <p>Essential Questions How can you use the Commutative Property of Multiplication to find products? When might you need to multiply three numbers? When would it be helpful to decompose a factor when multiplying? How can you use the properties to explain patterns on the multiplication table?</p>	<ul style="list-style-type: none"> ▯ Can someone add on to what was said? ▯ Does someone have a similar idea? ▯ Do you agree or disagree? <p>Additional Resources: See Properties of Operations Table on page 34 for the multiplication properties BrainpopJr: Multiplying by 0 or 1 Brainpop: Commutative Property, Associative Property</p> <p>Math Instructional Focus Document https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_3_Mathematics.pdf Ensure that instruction meets the rigor called for by the standard. To help with this, use the Instructional Focus Documents (Use the dropdown to choose what grade-level) and the Go Math Guidance Documents</p>
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Week 3: Division Strategies and Word Problems		
<p>3.OA.A.2 Interpret the dividend, divisor, and quotient in whole number division equations (e.g., $28 \div 7$ can be interpreted as 28 objects divided into 7 equal groups with 4 objects in each group or 28 objects divided so there are 7 objects in each of the 4 equal groups.)</p> <p>3.OA.B.6 Understand division as an unknown-factor problem. <i>For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.</i></p> <p>3.OA.A.3 Divide within 100 to solve contextual problems, with unknowns in all positions, in situations involving equal groups, arrays, and measurement quantities using strategies based on place value, the properties of operations, and the relationship between multiplication and division (e.g., contexts including computations such as $3 \times ? = 24$, $6 \times 16 = ?$, $? \div 8 = 3$, or $96 \div 6 = ?$)</p>	<p>Learning Targets I can model concretely various division situations by making equal groups or finding the number of objects in each group. I understand that division is finding the number of equal groups or the number of objects in each group.</p> <p>I understand that division is finding unknown factors.</p> <p>I can determine when to divide in word problems requiring me to find equal groups and arrays/area with group size unknown and number of groups unknown. I can describe the context for a division situation.</p> <p>Enduring Understandings 1. Students will understand that some real-world problems involving joining or separating equal groups can be solved using division. 2. Partitive division, also called sharing, involves separating equal shares to determine “how many groups.” 3. Quotative division, also called repeated subtraction, involves separating equal groups to determine “how many in each group.” 4. Some problems can be solved by using objects to act out the problem or by drawing a picture to show the actions in the problem.</p> <p>Essential Questions 1. How can you think of division as sharing?</p>	<p>GO! Math 6.2 Size of Equal Groups 6.3 Number of Equal Groups 6.4 Model with Bar Models 7-4A Choose an Appropriate Equation (Transition lesson)</p> <p>Vocabulary: Divide, division, divisor, dividend, quotient, partitioned equally, group size</p> <p>Mathematical Practices Focus 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively.</p> <p>Math Task Suggestions: Instructional and Assessment Tasks: http://www.edutoolbox.org/tntools</p> <p>Accountable Talk Stems: <ul style="list-style-type: none"> □ Did everyone hear that? □ Can someone repeat what was just said? □ Can someone add on to what was said? □ Does someone have a similar idea? □ Do you agree or disagree? </p> <p>Additional Resources: <u>The Doorbell Rang</u> by Pat Hutchins <u>Divide and Ride</u> by Stuart Murphy BrainpopJr: Making Equal Groups, Repeated Subtraction</p>

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2. How can you think of division as repeated subtraction?
3. What kinds of stories involve division situations?
4. How can you use bar models to solve division problems?
5. How can you model a division problem to find how many in each group?
6. How can you model a division problem to find how many equal groups?

Math Instructional Focus Document
https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_3_Mathematics.pdf

Teacher Created Formative Assessment



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Week 4: Connecting Multiplication and Division		
<p>3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers within 100. <i>For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = ? \div 3$, $6 \times 6 = ?$</i></p> <p>3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of 3rd grade, know from memory all products of two one-digit numbers and related division facts.</p> <p><small>*Strategies for fluency should be explicitly taught. e.g., doubles, ten facts, square numbers, decomposing unknown facts to known facts, skip counting, 5 facts (half of ten), nines (one group less than 10 facts).</small></p> <p>3.OA.A.3 Multiply and divide within 100 to solve contextual problems, with unknowns in all positions, in situations involving equal groups, arrays, and measurement quantities using strategies based on place value, the properties of operations, and the relationship between multiplication and division (e.g., contexts including computations such as $3 \times ? = 24$, $6 \times 16 = ?$, $? \div 8 = 3$, or $96 \div 6 = ?$)</p>	<p>Learning Targets I can determine the unknown number in multiplication and division problems.</p> <p>I can multiply and divide any two numbers within 100 with ease by picking and using strategies that will get to the answers fairly quickly.</p> <p>I can determine when to multiply or divide using all six multiplication and division situation types: equal groups, unknown product, group size unknown, number of groups unknown and arrays/area: unknown product, group size unknown, number of groups unknown</p> <p>Enduring Understandings</p> <ol style="list-style-type: none"> Multiplication and division have inverse relationships. The inverse relationship between multiplication and division can be used to find division facts; every division fact has a related multiplication fact. <p>Essential Questions</p> <ol style="list-style-type: none"> How are multiplication and division facts related? How can you use multiplication to help you divide? 	<p>GO! Math 5.2 Find Unknown Numbers 6.8 Write Related Facts</p> <p>Fact Fluency Practice: 3.7 Multiplying by 0 and 1 4.1 - 4.3 Multiplying by 2, 3, 4, 5, 6, 10, 4.5 Multiplying by 7 4.8 Multiplying by 8 4.9 Multiplying by 9</p> <p>6.9 Dividing by 0 and 1 7.1 – 7.9 Dividing by 2, 3, 4, 5, 6, 7, 8, 9, 10</p> <p>Vocabulary: multiply, divide, equations, unknown, multiples, factor, product, quotient, strategies, properties, operation</p> <p>Mathematical Practices Focus</p> <ol style="list-style-type: none"> Make sense of problems and persevere in solving them. Reason abstractly and quantitatively. Look for and make use of structure. <p>Math Task Suggestions: Instructional and Assessment Tasks: http://www.edutoolbox.org/tntools</p> <p>Additional Resources: Multiplication Rhymes PDF Multiplication Rhymes Song **Daily Math Fact Practice should be incorporated from now until end of the school year**</p>
Teacher Created Formative Assessment		



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Weeks 5-6: 2-Step Word Problems		
<p>3.OA.D.8 Solve two-step contextual problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>	<p>Learning Targets I can solve two-step word problems using addition, subtraction, multiplication, and division. I can represent these problems using an equation and a letter for the unknown part. I can check and explain the reasonableness of my answer using mental computation and estimation.</p> <p>Enduring Understandings 1. Sometimes the answer to one problem/question is needed to find the answer to another problem/question. 2. Answers to problems should always be checked for reasonableness, and this can be done in different ways. 3. The letter that represents an unknown</p>	<p>GO! Math 1-12 Model Addition and Subtraction 3-4 Model Multiplication 4-10 Problem Solving – Multiplication 7-10 Two-Step Problems</p> <p>EngageNY Module 3, Lesson 18 and Module 7, Topic A have additional lessons on one-and two-step word problems</p> <p>Vocabulary: multiply, divide, factor, product, quotient, unknown, reasonableness, mental computation</p> <p>Mathematical Practices Focus 7. Look for and make use of structure. 6. Attend to precision</p> <p>Accountable Talk Stems:</p> <ul style="list-style-type: none"> □ Did everyone hear that? □ Can someone repeat what was just said? □ Can someone add on to what was said? □ Does someone have a similar idea? □ Do you agree or disagree? <p>Additional Resources: See Addition and Subtraction Situations Table and Multiplication and Division Situations Table (scroll to the bottom)</p> <p>Math Instructional Focus Document https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_3_Mathematics.pdf</p>

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quantity is the unknown in the part-whole relationship.

Essential Questions

How can I use the four operations to solve two-step word problems?
How can you use the strategy draw a diagram to solve one- and two-step addition and subtraction problems?

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<p align="center">Tennessee Standards The Major Work of the Grade are bolded.</p>	<p align="center">Learning Outcomes The Major Work of the Grade are bolded.</p>	<p align="center">Content EngageNY contains additional lessons</p>
<p>Weeks 7-8: Time Unit</p>		
<p>3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve contextual problems involving addition and subtraction of time intervals in minutes. <i>For example, students may use a number line to determine the difference between the start time and the end time of lunch.</i></p>	<p>Learning Targets I can read and write time to the nearest minute. I can add and subtract time using clock models and number line models. I can solve word problems related to time and represent elapsed time on a number line. I can determine the start time when given the elapsed time and the end time.</p> <p>Essential Understandings: 1. There are different units for measuring time. Many clock times can be expressed in more than one way. 2. The end time for an event can be known if one knows the start time and the duration of the event. 3. The start time for an event can be known if one knows the end time and the duration of the event and then working backwards.</p> <p>Essential Questions: 1. How can you tell time to the nearest minute? 2. How can you measure elapsed time in minutes? 3. How can you find a starting time or an ending time when you know the elapsed time?</p>	<p>GO! Math 10.1 Time to the Minute 10.2 A.M and P.M. 10.3 Measure Time Intervals 10.4 Use Time Intervals 10.5 Time Intervals</p> <p>EngageNY Module 2, Topic A has lessons for adding and subtracting time</p> <p>Vocabulary: time, time intervals, minute, hour, elapsed time, A.M., P.M.</p> <p>Mathematical Practices Focus 6. Attend to precision.</p> <p>Accountable Talk Stems:</p> <ul style="list-style-type: none"> □ Did everyone hear that? □ Can someone repeat what was just said? □ Can someone add on to what was said? □ Does someone have a similar idea? □ Do you agree or disagree? <p>Additional Resources: Pigs on a Blanket: Fun with Math and Time by Amy Axelrod BrainpopJr: Parts of a Clock, Time to the Hour, Time to the Quarter and Half Hour, Time to the Minute</p> <p>Math Instructional Focus Document https://www.tn.gov/content/dam/tn/education/standards/math/Standards_Support_grade_3_Mathematics.pdf</p>
<p>Teacher Created Formative Assessment</p>		

