

UNIT OF STUDY #6 Multiplications and Division Problem Solving

Title: Multiplication and Division Problem Solving	Subject/Course: Math	Length: 3 wks
Topic: Multiplication and Division Problem Solving	Grade: 4	Designer: Shaundra Flanery Tammie Nelson Carrie Holt
UNIT GOALS AND EXPECTATIONS		
<p>IMPORTANT CONCEPTS:</p> <ul style="list-style-type: none"> • Division and multiplication are inverse operations. • Clue words in word problems hint whether you should multiply or divide • Different word problem strategies can be used to solve word problems. • Different multiplication and division strategies can be used to solve problems. 	<p>ESSENTIAL QUESTIONS:</p> <ul style="list-style-type: none"> • How can models be used to show multiplication and division? • What questions can be answered by using multiplication and division? • What are efficient methods for finding quotients and products? • How can multiples be used to solve problems? • How does my knowledge about multiplication facts help me to solve problems? • How can multiplication be used to check the answers to division problems? • How can I use what I know about repeated subtraction, equal sharing, and forming equal groups to solve division problems? 	
<p>STUDENT LEARNING EXPECTATIONS:</p> <ul style="list-style-type: none"> • NO.3.4.3a Attain, with and without appropriate technology, computational fluency in two-digit by two-digit multiplication using contextual problems • NO.3.4.3b Attain, with and without appropriate technology, computational fluency in three-digit by two digit division using contextual problems • NO.3.4.3c Attain, with and without appropriate technology, computational fluency in multiplication and division using contextual problems using estimation of products and quotients in appropriate situations. • NO.3.4.3d Attain, with and without appropriate technology, computational fluency in multiplication and division using contextual problems using strategies for multiplication and dividing numbers and performance of operations in more than one way • NO.3.4.3e Attain, with and without appropriate technology, computational fluency in multiplication and division using contextual problems using relationships between operations. 	<ul style="list-style-type: none"> • A.5.4.1 Select and/or write number sentence to find the unknown in problem solving contexts involving two-digit by one digit division using appropriate labels • NO.2.4.4c Represent and explain division as measurement division including equal groups and price • NO.2.4.4d Represent and explain division as partitive division including related rates • NO.2.4.4e Represent and explain division as measurement division including related rates • NO.2.4.4f Represent and explain division as partitive division including multiplicative comparison • NO.2.4.4g Represent and explain division measurement division • NO.2.4.4h Represent and explain division as measurement and partitive division explaining how remainder may impact an answer in real-world situations. • A.7.4.1 Identify, describe and generalize relationship in which quantities change proportionally 	

<p>SPECIFIC DECLARATIVE KNOWLEDGE – What I know</p> <ul style="list-style-type: none"> • Vocabulary Terms: Inverse Operations, Fact family, Quotient, Remainder, Variable, Equation, Dividend, Divisor, Product, Factor, Multiples, Zero Property, Associative Property, Commutative Property, Identity Property • Recognize the relationship between multiplication and division. • Understand different strategies can be used to solve word problems. • Recognize importance of making sure all questions are answered in a word problem. 	<p>SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do</p> <ul style="list-style-type: none"> • Model multiplication word problems using manipulatives and arrays. • Write numbers that follow specific divisibility rules • Students will highlight clue words in word problems. • Students will construct their own word problems. • Students will demonstrate their knowledge of solving their word problem. • Create graphic organizer with properties • Demonstrate fluency of multiplication and division facts. • Select correct number sentences for the given contextual problems • Use numerical patterns to determine how numbers changed proportionally
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UNIT ASSESSMENTS
(Include tasks related to Dimensions 3 and 4 and Bloom’s Taxonomy)

Open Response: Alvin’s Crispios
Open Response: Division
Graphic Organizer of multiplication properties
Student constructed word problem

<p>Traditional Assessments: TLI Quiz, Vocabulary quiz, Homework, Class work</p>	<p>Other Evidence of Learning:</p>
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ACTIVITIES AND LEARNING EXPERIENCES	Resources
<ul style="list-style-type: none"> • Daily prior knowledge will be assessed by using one of the following: KWL charts, brainstorming, anticipation guides, admit slips, think-pair-share and problems of the day. • Vocabulary foldable on multiplication • Teacher demonstration of the multiplication properties. • Small groups: Students will construct a graphic organizer showing the four properties of multiplication. • Small groups: Each group will be given the divisibility rules of a certain number. 	<p>Dinah Zike’s Foldables</p>

<p>Each member has to write down a number that is divisible by the given number. After three minutes they will switch rules.</p> <ul style="list-style-type: none"> • Introduction: United Streaming Math Mansion (Double Digit Dating) • Utilize calculator technology to find incorrect two-digit multiplication problems. We will discuss why they are incorrect and the similarities of the correct problems. • Pairs: Multiplication Tic Tac Toe • Multiplication Riddle • Small groups: Dry erase boards • Describe and Draw vocabulary words for division • Introduce Division: The Math Playground Video How Do You Do Long Division? • The Five Steps (Song) • Division Rx: Have each child solve the problems on grid paper, using a small sticky note to cover all numbers in the dividend except the ones needed for each step. • Small groups: intervention with place value division. • Word problem practice 	<p>United Streaming</p> <p>The Mailbox 2004-2005</p> <p>http://www.mathplayground.com/howto_longdivision.html Van De Walle, John</p> <p>Math Jingles</p> <p>The Mailbox 2004-2005</p> <p>Van De Walle, John</p> <p>http://www.mathplayground.com/mathhoops_Z1.html</p>
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Career Connections

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