

Unit 7 - Division and Decimals

Overview

In this unit, students continue their study of division, including its relationship to multiplication. First, students work through class activities to find partial quotients as they divide 3 and 4 digit dividends by 2-digit divisors. Next, the focus is on sharing and grouping interpretations of division, providing opportunities to review the skills and concepts associated with dividing unit fractions by whole numbers and vice versa. Students also solve and discuss a wide variety of division story problems, including contexts that require decisions about how to handle remainders. Finally, students review and extend their thinking about the effects of multiplying and dividing powers of ten, as well as multiplying and dividing decimal numbers. There is no PBA for this unit because of time limitations.

21st Century Capacities: Synthesizing

Stage 1 - Desired Results

<p>ESTABLISHED GOALS/ STANDARDS</p> <p>MP 1 Make sense sense of problems and persevere in solving them MP4 Model with Mathematics MP5 Use appropriate tools strategically MP6 Attend to precision</p> <p>Write and interpret numerical expressions. CCSS.MATH.CONTENT.5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.</p> <p>Understand the place value system. CCSS.MATH.CONTENT.5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p>	Transfer:		
	<p><i>Students will be able to independently use their learning in new situations to...</i></p> <ol style="list-style-type: none"> 1. Demonstrate fluency with math facts, computation and concepts. 2. Make sense of a problem, initiate a plan, execute it, and evaluate the reasonableness of the solution. 3. Apply familiar mathematical concepts to a new problem or apply a new concept to rework a familiar problem. (Synthesizing) 		
	Meaning:		
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> <p>UNDERSTANDINGS: <i>Students will understand that:</i></p> <ol style="list-style-type: none"> 1. Mathematicians identify relevant tools, strategies, relationships, and/or information in order to draw conclusions. 2. Mathematicians create or use models to examine, describe, solve and/or make predictions. 3. Mathematicians examine relationships to </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <p>ESSENTIAL QUESTIONS: <i>Students will explore & address these recurring questions:</i></p> <ol style="list-style-type: none"> A. How can I explain this mathematically? B. What is another way that this problem could be solved? C. What math tools/models/strategies can I use to solve the problem? D. Does this solution make sense? E. What does the solution tell me? </td> </tr> </table>	<p>UNDERSTANDINGS: <i>Students will understand that:</i></p> <ol style="list-style-type: none"> 1. Mathematicians identify relevant tools, strategies, relationships, and/or information in order to draw conclusions. 2. Mathematicians create or use models to examine, describe, solve and/or make predictions. 3. Mathematicians examine relationships to 	<p>ESSENTIAL QUESTIONS: <i>Students will explore & address these recurring questions:</i></p> <ol style="list-style-type: none"> A. How can I explain this mathematically? B. What is another way that this problem could be solved? C. What math tools/models/strategies can I use to solve the problem? D. Does this solution make sense? E. What does the solution tell me?
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Grade 5 Math Curriculum

<p>CCSS.MATH.CONTENT.5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p>	<p>discern a pattern, generalizations, or structure.</p> <p>4. Mathematicians can describe patterns, relations, and/or functions to access strategies to solve problems.</p>	
<p>CCSS.MATH.CONTENT.5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p>CCSS.MATH.CONTENT.5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<p style="text-align: center;">Acquisition:</p> <p><i>Students will know...</i></p> <ol style="list-style-type: none"> 1. How to create and solve equations based on division story problems. 2. How to solve problems using partial quotients 3. How to multiply using powers or tens and exponents. 4. How to interpret remainders in division story problems. 5. How to multiply and divide decimals based on place value strategies. 6. Vocabulary: partial quotients, exponents, factors, divisor, dividend, quotient, remainder, tenth, hundredth, ratio table 	<p><i>Students will be skilled at...</i></p> <ol style="list-style-type: none"> 1. Division with fractions 2. Division with whole numbers using partial quotients 3. Multiplying whole numbers and decimals by powers of ten. 4. Interpreting the remainder of a division story problem. 5. Dividing whole numbers and decimals by powers of ten.