

## Grade 4

<b>Unit</b>  <b>2.2</b>	<b>Unit Title</b>  <b>Division with Remainders</b>	<b>Lesson</b>  <b>1 of 3</b>	<b>Day</b>  <b>1 and 2</b>
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### Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<b>4. OA.3</b> Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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.	<ul style="list-style-type: none"> <li>• Solve multi-step word problems with whole numbers using the four operations.</li> <li>• Illustrate and explain the calculations by using equations, rectangular arrays, and/or area models.</li> </ul>	<b>SMP1</b> Make sense of problems and persevere in solving them.  <b>SMP2</b> Reason Abstractly and quantitatively.	<ul style="list-style-type: none"> <li>•How can you tell if your answer to this multi-step word problem is reasonable?</li> <li>•How can you use remainders in division problems?</li> <li>•What does the remainder in a quotient mean?</li> <li>•How can you use the strategy draw a diagram to solve multi-step problems?</li> </ul>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> <li>•Identify divisor, dividend, quotient, and remainder.</li> <li>•Understand fractions as part of a whole or part of a set.</li> <li>•Divide multi-digit numbers by 1-digit numbers.</li> </ul>	Remainder Divisor Dividend Quotient	Students may misinterpret the meaning of the remainders.	<b>OnCore</b> Lessons 6 and 7 Student pp. 11-14

### Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide children to interpret remainders to solve division problems and solve problems by using the strategy <i>draw a diagram</i> following the lesson guidelines in OnCore lessons 6 and 7 (TM pp. 7 and 8), teachers will: <ul style="list-style-type: none"> <li>•Tell students when they solve a word problem or a real life problem, they need to interpret the remainder before they can give an appropriate answer.</li> <li>•Guide students to the four different ways to interpret remainders.</li> <li>•Ask students to explain how they'll interpret the remainder before completing the problems.</li> <li>•Remind students of the types of bar diagrams they have used to visualize problems.</li> <li>•Discuss the information in the problem and why two steps are needed.</li> <li>•Extend the activity by reviewing how to use a bar diagram to solve multiplication and division problems.</li> </ul>	In Lessons 6 and 7 students will: <ul style="list-style-type: none"> <li>• Interpret remainders to solve division problems giving appropriate answers.</li> <li>•Use the strategy <i>draw a diagram</i> and use bar models to solve multistep division problems.</li> <li>•Complete student pp. 11-14.</li> </ul>

## Grade 4

<b>Unit</b>  <b>2.2</b>	<b>Unit Title</b>  <b>Division with Remainders</b>	<b>Lesson</b>  <b>2 of 3</b>	<b>Day</b>  <b>3 - 5</b>
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### Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<b>4. NBT.6</b> Find whole-number quotients and remainders with up to four-digit dividends and one-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.	<ul style="list-style-type: none"> <li>•Find whole number quotients and remainders with up to four-digit dividends and one-digit dividers.</li> <li>•Use properties based on place value, properties of operations, and the relationship between multiplication and division.</li> </ul>	<b>SMP2</b> Reason Abstractly and quantitatively  <b>SMP5</b> Use appropriate tools strategically.  <b>SMP7</b> Look for and make use of structure.	<ul style="list-style-type: none"> <li>•What strategies can be used to find whole number quotients and remainders with up to four-digit dividends and one-digit divisors?</li> <li>•How can you use multiples to estimate quotients?</li> <li>•How can you use models to divide whole numbers that do not divide evenly?</li> <li>•How can you use repeated subtraction and multiples to find quotients?</li> </ul>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
Skip count by 2s, 5s, and 10s. Multiply by 1-digit numbers by multiples of 10. Identify divisor, dividend, and quotient. Use multiples.	Multiple Counting number Remainder Divisor, Dividend, Quotient		<b>OnCore</b> Lessons 37-38 and 42 Student pp. 73-76 and 83-84

### Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide children to use remainders to solve division problems and solve problems by using the strategy <i>draw a diagram</i> following the lesson guidelines in OnCore lessons 6 and 7 (TM pp. 7 and 8), teachers will: <ul style="list-style-type: none"> <li>•Have students skip count and to use the multiples to estimate quotients.</li> <li>•Explain to students that the counting numbers in the table are multiples of 10 and ask students to explain how they find the two numbers the quotient is between.</li> <li>•Have students identify the divisor, dividend, and quotient in a problem and have them use counters to divide 26 into equal groups of 9 to find the quotient and remainder.</li> <li>•Remind students to use lowercase r to write the remainder.</li> </ul> NOTE: Some students may draw groups of the divisor (i.e. groups of 7) and their quotient will be the number of groups, but the quotient and remainder will be the same as it would if they draw the number of groups as the divisor (i.e. 7 groups). Ask students how they think division and subtraction are related.	In Lessons 37-38 and 42 students will: <ul style="list-style-type: none"> <li>• Identify two multiples the quotient lies between.</li> <li>• Estimate quotients using multiples.</li> <li>• Use counters to explore multiples and divide into equal groups.</li> <li>• Identify the divisor, dividend, and quotient and remainder in a problem.</li> <li>• Divide using repeated subtraction.</li> <li>• Draw a number line to divide (repeated subtraction).</li> <li>• Solve real-world division problems.</li> <li>•Complete student pp. 73-76 and 83-84.</li> </ul>

## Grade

<b>Unit</b> <b>2.2</b>	<b>Unit Title</b> <b>Division with Remainders</b>	<b>Lesson</b> <b>3 of 3</b>	<b>Day</b> <b>6-10</b>
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### Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><b>4. NBT.6</b> Find whole-number quotients <del>and remainders</del> with up to four-digit dividends and one-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>	<ul style="list-style-type: none"> <li>•Find whole number quotients and remainders with up to four-digit dividends and one-digit divisors.</li> <li>•Use properties based on place value, properties of operations, and the relationship between multiplication and division.</li> </ul>	<p><b>SMP1</b> Make sense of problems and persevere in solving them.</p> <p><b>SMP2</b> Reason Abstractly and quantitatively</p>	<ul style="list-style-type: none"> <li>•Using equations, rectangular arrays, and/or area models how can you explain division problems?</li> <li>•How can you use base-ten blocks to model division with regrouping?</li> <li>•How can you use place value to know where to place the first digit in the quotient?</li> <li>•How can you divide multi-digit numbers and check your answers?</li> </ul>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> <li>•Understand and use place value.</li> <li>•Understand the inverse relationship between multiplication and division.</li> </ul>			<p><b>OnCore</b> Lessons 44-46 Student pp. 87-92 Base-ten blocks <b>Investigations</b> Unit 8 Snap-in 3.5A SAB pp.C61-C63</p>

### Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
<p>Teachers will guide children to model division with regrouping, use place value and estimation to figure where to place the first digit and what the digit should be, and divide by 1-digit numbers, following the lesson guidelines in OnCore lessons 44-46 (TM pp. 46-), teachers will:</p> <ul style="list-style-type: none"> <li>•Have students use base-ten blocks to experience the regrouping process and think about the steps they use when they model regrouping. Encourage students to use quick pictures when necessary.</li> <li>•Guide students to estimate.</li> <li>•Have students look over division examples with a 3-digit dividend. Review the inverse relationship between multiplication and division and remind students to check division by multiplying the divisor by the quotient and then adding the remainder, if any.</li> </ul> <p>Teachers will be following lesson activities from Investigations Unit 8 session 3.5A Snap-In materials. (TM CC90-94) In the activities teachers will:</p> <ul style="list-style-type: none"> <li>•Encourage students to use a story context to help them keep track of the problem and later ask students to relate each number in the problem and the answer to the story. Ask good questions to get at understanding. Discuss students' strategies.</li> </ul>	<p>In Lessons 44-46 students will:</p> <ul style="list-style-type: none"> <li>•Use base-ten blocks to model division with regrouping.</li> <li>•Use place value and estimation to figure out where to place the first digit and what the digit should be.</li> <li>•Check for reasonableness of their answers.</li> <li>•Use the standard algorithm to divide 3- and 4-digit dividends by 1-digit numbers.</li> <li>•Complete student pp. 87-92.</li> </ul> <p>In Investigations Unit 8 Snap-In 3.5A students will:</p> <ul style="list-style-type: none"> <li>• Use division strategies to divide 4-digit numbers by 1-digit numbers..</li> </ul>