

Shirley Elementary School

Essential Standards Unit Pacing Guide

Use this document to backward plan their units of instruction, including specific lessons and assessments.

Grade Level: 4th	Subject Area: Unit 2: Multiplication & Division	Month (Dates): September 2 - October 27
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Critical Question 1: What do we want the students to know and be able to do? Identify the essential standards and the supporting standards for the unit.			
<p>Standard(s):</p> <p>4. OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.</p> <p>4. OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.</p> <p>4. OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. Explain informally why the pattern will continue to develop in this way. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers.</p> <p>4. NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (essential)</p> <p>4. MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</p> <p>4. MD.8 Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non overlapping parts, applying this technique to solve real world problems.</p> <p>4. NBT.6 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. (essential)</p> <p>4. OA.3 Solve multistep 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.</p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;"> <ul style="list-style-type: none"> • Knowledge • Reasoning </td> <td style="width: 50%; border: none; vertical-align: top;"> <ul style="list-style-type: none"> • Performance Skill • Product </td> </tr> </table>	<ul style="list-style-type: none"> • Knowledge • Reasoning 	<ul style="list-style-type: none"> • Performance Skill • Product
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<p>End of Unit Assessment:</p> <p>Unit 2 Assessment</p>	<p>When taught: Sept. 2 - Oct. 27</p> <p>Instructional days needed: 30 days</p>		

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Critical Question 2: How do we know if they have learned it? What evidence will tell us they have met the standards by the end of the unit? Discuss evidence of the end in mind (end-of-unit measure)- How will team members know if students achieve the standard(s)? What type of task could students perform or complete by the end of the unit to show achievement? With what level of proficiency should students perform it? What type of problem or text (stimulus) should students receive?			
Knowledge Targets	Reasoning Targets	Performance Skills Targets	Product Targets
Know multiplication strategies. Describe multiplicative comparison Multiply or divide to solve word problems. Divide whole numbers including division with remainders. Define prime and composite numbers. Know strategies to determine whether a whole number is prime or composite. Identify all factor pairs for any given number 1-100. Determine if a given whole number (1-100) is a multiple of a given one-digit number. Identify a number or shape pattern. Multiply a whole number of up to four digits by a one-digit whole number. Multiply two two-digit	Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations. Determine and use a variety of representations to model a problem involving multiplicative comparison. Determine if a given whole number (1-100) is a multiple of a given one-digit number. Evaluate if a given whole number (1-100) is prime or composite. Analyze a pattern to determine features not apparent in the rule Generate a number or shape pattern that follows a given rule. Use strategies based on place value	Apply knowledge of strategies to word problems.	

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<p>numbers algorithm.</p> <p>Find whole number quotients and remainders with up to four-digit dividends and one-digit divisors.</p>	<p>and the properties of operations to multiply and divide whole numbers.</p>		
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<p>Big Ideas</p> <p>Students will use multiplicative comparison to solve problems.</p> <p>Students will understand how to find factors of a given number and determine if it is prime or composite.</p> <p>Students will use strategies learned to multiply and divide.</p> <p>Students will use all four operations to solve multi-step word problems.</p>	<p>Assessment Items</p> <p>Standards based quizzes Unit Assessment Small group</p>	<p>Academic Language or Vocabulary</p> <p>multiplicative comparison, prime, composite, pattern, factor, product, divisor, dividend, quotient, multi-step</p>
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<p>Student-friendly learning targets:</p> <p>I can use multiplicative comparisons to solve problems.</p> <p>I can find the factors and determine if a number is prime or composite.</p> <p>I can determine the patterns of shapes and numbers using a strategy.</p> <p>I can use a strategy to multiply a whole number up to 4 digits by 1 digit.</p> <p>I can use a strategy to multiply a 2 digit whole number by another 2 digit whole number.</p> <p>I can find whole number quotients and remainders with up to four-digit dividends and one-digit divisors and interpret the remainder.</p> <p>I can use area and perimeter to solve problems.</p>

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Where in the unit does it make sense to see if our students are learning what we are teaching? What evidence will we collect along the way about the smaller pieces of learning (Formative Assessment)

- Identify specific targets the team will commonly assess formatively. Team members should collectively monitor learning targets that are typically challenging for students.
- Identify or develop brief but aligned assessment items that will provide usable evidence to the team about the student's understanding and skill. Team members should discuss the level of proficiency they will expect for the assessment items.

Plan the sequence of instruction and the timing for common formative assessments- As the team designs the unit plan, it should include the quality of instructional practices that support high levels of student learning (What best instructional practices or strategies will be embedded in the unit?)

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Sequential Plan for Providing Unit Instruction and Monitoring Learning Things to consider: Days (Progression) Lessons or Activities (What learning targets will we teach? How will we teach them?) Embedded Assessment Checkpoints (What are formative and summative assessment checkpoints?)					
Week 1 Aug. 28 - Sept. 2				What is multiplication? Student practice: Multiplication Games	Multiplicative Comparisons Student practice: Multiplicative Comparison Word Problems
Week 2 Sept. 5-9	Holiday	Digital Learning Day	Showing multiplicative comparisons with visuals Student Practice: Model multiplicative comparisons	Finding the missing numbers in multiplicative comparisons Student practice: order and compare whole numbers	Review Multiplicative Comparisons & Assess W Unit 2 Multiplicative ...
Week 3 Sept. 12 -16	Learn about finding factor pairs and understanding if a number is prime or composite. Student practice: Finding factor pairs	Review and practice Factor Pairs. Student practice: Finding Factor Pairs	Review: What are patterns? Practice finding patterns in pictures and numbers. Student practice: Finding patterns in pictures and numbers.	Continue to work with patterns. Practice patterns in word problems and charts. Student practice: Finding Patterns	Review patterns and factors & Assess W Unit 2 Factor, Prime, ...
Week 4 Sept. 19-23	Introduce Area Models of multiplication with 2 x one digit divisors Student practice: Area Models	Field Trip	Practice and teach area models of multiplication with one digit divisors Student practice: Area Models	Introduce and teach 2 x 2 area models of multiplication Student practice: Area Models	Continue to practice and teach area models of multiplication with 2 x 2 problems Student practice: Area Models
Week 5 Sept. 26 - 30	Mixed practice with area models of multiplication making sure students understand set up and step to solve	Mixed practice with area models of multiplication focusing on word problems and key terms to review and Assess Multiplication W Unit 2 Multiplication ...	What is division? Student Practice: Model two division problems	Introducing the Big 7 method of long division Student practice: Practice division using provided strategies	Continue to teach into and practice partial quotients/Big 7 method of division Student practice: Practice division

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	Student practice: Area Model	*Essential Standard			
Week 6 Oct. 3-7	Continue to teach into and practice division with partial quotients/ Big 7 Student practice: continue to practice division strategies	Introduce and discuss division word problems, including how to interpret the remainder to answer questions. Student practice: interpreting remainders	Continue to practice interpreting remainders in word problems. Student practice: Interpreting Remainders	Review and assess division strategies and interpreting remainders w Unit 2 Division Quiz... *Essential Standard	Student Holiday Conference Day
Oct. 10 - 14	Fall Break				
Week 7 Oct. 17 - 21	Combine all 4 operations to introduce multi-step word problems Student practice: Multi-step word problems	Use key terms and strategies to practice solving multi-step word problems Student practice: multi-step word problems	Continue to practice multi-step word problems using strategies and terms Student practice: multi-step word problems	Review and practice multi-step word problems & Assess w Unit 2 Multistep Qui...	Introduce/Review area and perimeter Student Practice: practice area and perimeter
Week 8 Oct. 24 - 28	Continue to review Area & Perimeter	Unit Review	Unit Assessment (major)	Partner Escape Room (minor for completion)	