Unit 1: Introducing Arrays

Content Area: **Mathematics**
Course(s): **Mathematics 4**
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Enduring Understandings

Proficiency with basic facts aids estimation and computation.

Numbers can represent quantity, position, location and relationships.

Multiplication and division are closely related.

Decomposing and recomposing groups can facilitate multiplication.

Essential Questions

How is math relevant to me?

What computation tools are best suited to which circumstances?

Content

Vocabulary

Addend

Column

Diagonal

Fact families

Inverse operations

Lower

Product

Power

Row

Sum

Skills

Connect multiplications and division.

Interpret a multiplication equation as a comparison.

Represent verbal statements of multiplicative comparisons as multiplicative equations.

Divide to solve word problems involving multiplicative comparisons.

Separate arrays.

Work with remainders.

Problem solve using the strategy solve a simpler problem.

Practice skip-counting and multiplication facts.

Connect a rectangular array to multiplication sentences.

Separate arrays to create simpler problems.

Recognize patterns in multiplication and extend those patterns.

Compare multiplication and division operations using fact families.

Make arrangements for division with remainders.

Multiply a whole number of three digits by a one-digit whole number.

Multiply a whole number of four digits by a one-digit whole number.

Use strategies based on place value.

Use strategies based on properties of operation.

Illustrate and explain calculations.

Find all factor pairs for a whole number in the range 1–100.

Recognize that a digit on one place represents ten times what it represents in the place to its right.

Standards

CCSS.Math.Content.4.OA.A.1	Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
CCSS.Math.Content.4.OA.A.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.
CCSS.Math.Content.4.OA.A.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.
CCSS.Math.Content.4.OA.B.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.
CCSS.Math.Content.4.OA.C.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.
CCSS.Math.Content.4.NBT.A.1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
CCSS.Math.Content.4.NBT.B.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.