Grade: 4 Subject: Mathematics	Unit 1: Multiplication and Division Word Problems
Big Idea/Rationale:	• In their own lives, students encounter mathematical situations that require them to understand the relationships between known and unknown quantities. This unit encourages students to analyze the structure and language of different types of word problems and to discuss different models that can be used to solve word problems.
Enduring Understanding (Mastery Objective):	Students will understand that: • One representation may be more helpful than another; and used together, multiple representations give a fuller understanding. • Computational fluency includes understanding not only the meaning, but also the appropriate use of numerical operations. • In many cases, there are multiple algorithms for finding a mathematical solution. • For a given set of numbers, there are relationships that are always true called properties, and these are the rules that govern arithmetic and algebra. • Breaking apart calculations into simpler ones is the idea used in all algorithms for rational numbers. This directly correlates with the Associative Property, which states that the way in which factors are grouped does not affect the product. • Answers to problems should always be checked for reasonableness and this can be done through estimation.
Essential Questions (Instructional Objective):	• How can we compare and contrast numbers? • What makes a computational strategy both effective and efficient? • How can numbers be used to describe a particular situation? • How can we use arrays to understand multiplication? • What happens when you multiply two numbers and switch the order of the factors? • How can the Distributive Property and knowledge of basic facts be used to find other products and facts? • How do you know the answer is reasonable?
Content (Subject Matter & Learning Objectives):	• Take a checkup on 6s, 7s, 8s multiplications and divisions. • Create tables and interpret data displayed in tables. • Make tables of data use the entries to the entries to determine the total number of combinations. • Use tables and other methods to solve problems involving combinations. • Write a situation equation to represent a problem. • Write and solve a solution equation. • Write multiplication and division equations for comparison problems. • Solve multiplication and division comparison word problems. • Answer and write comparisons questions about a pictograph and a bar

	graph.
	• Understand horizontal and vertical bar graphs.
	• Use a table to create horizontal and vertical bar graphs.
	• Use addition, subtraction, multiplication, and division to solve problems that involve more than one step.
	• Find factors pairs for given numbers and use them to determine whether a number is prime or composite.
	• Write numbers as products of prime factors and use prime factorizations to solve division problems.
	• Solve a variety of problems, using mathematical processes and skills.
	• Use the mathematical process of problem solving, connections, and reasoning and proof, communication and representation.
	• Solve a variety of problems using mathematical concepts and skills.
Standards	• **4. OA.A.1**: Interpret a multiplication equation as a comparison.
	• **4. OA.A.2:** Multiply or divide to solve word problems involving multiplication comparison.
	• **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.
	• **4.OA.A.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.
	• **4.OA.A.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.
	• **Mathematical Practices**
Materials and Resources	• Math Expressions, Student Journals, Manipulatives, Math themed literature, BrainPop, IXL Mathematics