Grade 4 Unit 6 Family Resource
Unit Name:Problem Solving with Measurement

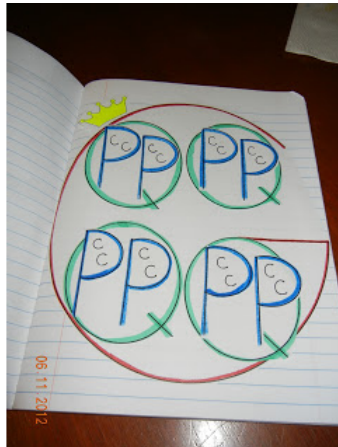| What's my child learning in Unit 6?	What does this mean? What does it look like?	How can I help my child at home?
● Students will understand relative sizes of units within the customary system (in, ft, yds, mi.; oz, lb; c, pt, qt., gal.; sec., min., hr.) by developing benchmarks through hands on experiences and visual representations.	**Measuring Length:** 1 inch — length of a small paper clip 1 foot — distance from shoulder to elbow 1 yard — width of a door 1 mile combined length of 15 football fields **Measuring Weight:** 1 ounce — slice of bread 1 pound — soccer ball 1 ton — walrus **Measuring Liquid Capacity:** You can use the benchmarks shown to estimate capacity. MILK 1 Quart MILK 1 Gallon MILK 1 Pint MILK 1 Cup 1 fluid ounce	Pictorial representation to help remember how many cups, pints, quarts are in a gallon

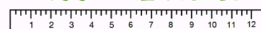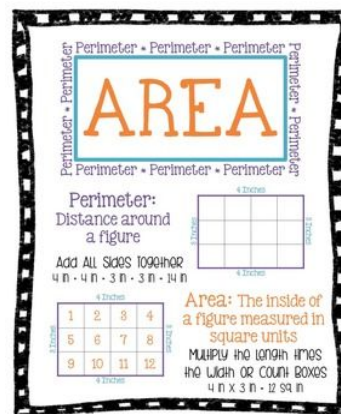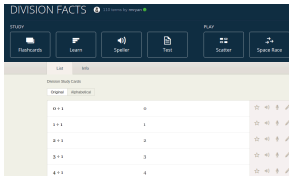|		
● Students will record measurement equivalents using a two column table (conversion table) to use as a tool for problem solving.	They make statements such as, if one foot is 12 inches, then 3 feet has to be 36 inches because there are 3 groups of 12. Example: | Yards	Feet
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1	3
2	6
3	9
n	*n x 3*		LearnZillion Video - Compare and convert customary units of weight
● Students will solve multi-step problems involving measurement and conversion of measurements from a larger unit to a smaller unit using (in, ft, yds, mi.; oz, lb; c, pt, qt., gal.; sec., min., hr.)	Customary Distance Conversions 1 foot = 12 inches 1 yard = 3 feet 1 mile = 1,760 yards or 5,280 feet	LearnZillion Video - Video showing how to solve real life, distance problems by converting measurements
● Students will apply the area and perimeter formulas for rectangles in real world and mathematical problems.	Perimeter • Perimeter • Perimeter AREA Perimeter • Perimeter • Perimeter Perimeter: Distance around a figure Add All Sides Together 4 in · 4 in · 3 in · 3 in · 14 in Area: The inside of a figure measured in square units Multiply the length times the width or count boxes 4 in x 3 in · 12 sq in	A Party is Being Planned and You're the Top Designer! Design a Party - Interactive website involving applying area and perimeter
● Students will multiply two 2-digit whole numbers using area models, partial products,	**Example Strategies for 324 x 6 = ?**	Multiplying Two 2 digit Numbers - This TenMarks video helps explain the area model we use to teach students multi-digit multiplication.

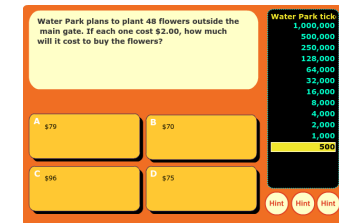|			
and place value understanding.	Partial Products: 324 × 6; 24 (6 x 4), 120 (6 x 20), 1,800 (6 x 300), 1,944; 300 + 20 + 4. Area Model: x 300 20 4; 6	1,800	120	24; 1,800 + 120+ 24 = 1,944	
• Students will use multiplication or division to solve word problems involving measurement with multiplicative comparisons.	A multiplicative comparison is a situation in which one quantity is multiplied by a specified number to get another quantity (e.g., "30 is 5 times as much as 6"). Students should be able to identify and verbalize which number is being multiplied and which number tells how many times. Examples: Sally is five years old. Her mom is eight times older. How old is Sally's Mom? 5 x 8 = 40. Sally has five times as many pencils as Mary. If Sally has 5 pencils, how many does Mary have? 5 x 5 = 25	<u>Multiplicative Comparison</u> - This TenMarks video explains multiplicative comparisons.
• Students will divide a whole number of up to 4 digits by a one digit whole number and interpret remainders.	Example: 1917 ÷ 9 9; 1800; 90; 27. A student's description of his or her thinking may be: I need to find out how many 9s are in 1917. I know that 200 x 9 is 1800. So if I use 1800 of the 1917, I have 117 left. I know that 9 x 10 is 90. So if I have 10 more 9s, I will have 27 left. I can make 3 more 9s. I have 200 nines, 10 nines and 3 nines. So I made 213 nines. 1917 ÷ 9 = 213. Example: A 4th grade teacher bought 4 new pencil boxes. She has 260 pencils. She wants to put the pencils in the boxes so that each box has the same number of pencils. How many pencils will there be in each box?	<u>Quizlet</u> - Division Facts

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Using Base 10 Blocks:
- Students build 260 with base 10 blocks and distribute them into 4 equal groups. Some students may need to trade the 2 hundreds for tens but others may easily recognize that 200 divided by 4 is 50.
- Using Place Value: 260 ÷ 4 = (200 ÷ 4) + (60 ÷ 4)
- Using Multiplication: 4 x 50 = 200, 4 x 10 = 40, 4 x 5 = 20; 50 + 10 + 5 = 65; so 260 ÷ 4 = 65

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- Students will use all four operations (multiplication and division focus) to solve multi-step (at least 3 steps) word problems.

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Multiplication/Division Problem Structures

	Unknown Product	Group Size Unknown ("How many in each group?" Division)	Number of Groups Unknown ("How many groups?" Division)
	3 x 6 = ?	3 x ? = 18, and 18 ÷ 3 = ?	? x 6 = 18, and 18 ÷ 6 = ?
Equal Groups	There are 3 bags with 6 plums in each bag. How many plums are there in all? *Measurement example.* You need 3 lengths of string, each 6 inches long. How much string will you need altogether?	If 18 plums are shared equally into 3 bags, then how many plums will be in each bag? *Measurement example.* You have 18 inches of string, which you will cut into 3 equal pieces. How long will each piece of string be?	If 18 plums are to be packed 6 to a bag, then how many bags are needed? *Measurement example.* You have 18 inches of string, which you will cut into pieces that are 6 inches long. How many pieces of string will you have?
Arrays,[4] Area[5]	There are 3 rows of apples with 6 apples in each row. How many apples are there? *Area example.* What is the area of a 3 cm by 6 cm rectangle?	If 18 apples are arranged into 3 equal rows of 6 apples, how many will be in each row? *Area example.* A rectangle has area 18 square centimeters. If one side is 3 cm long, how long is a side next to it?	If 18 apples are arranged into equal rows of 6 apples, how many rows will there be? *Area example.* A rectangle has area 18 square centimeters. If one side is 6 cm long, how long is a side next to it?
Compare	A blue hat costs $6. A red hat costs 3 times as much as the blue hat. How much does the red hat cost? *Measurement example.* A rubber band is 6 cm long. How long will the rubber band be when it is stretched to be 3 times as long?	A red hat costs $18 and that is 3 times as much as a blue hat costs. How much does a blue hat cost? *Measurement example.* A rubber band is stretched to be 18 cm long and that is 3 times as long as it was at first. How long was the rubber band at first?	A red hat costs $18 and a blue hat costs $6. How many times as much does the red hat cost as the blue hat? *Measurement example.* A rubber band was 6 cm long at first. Now it is stretched to be 18 cm long. How many times as long is the rubber band now as it was at first?
General	a x b = ?	a x ? = p, and p ÷ a = ?	? x b = p, and p ÷ b = ?

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[Rags to Riches](#)- Interactive website solving word problems

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