Fifth Grade: Module 1

DUVAL Math Parent Tips

DUVAL COUNTY PUBLIC SCHOOLS

Place Value and Decimal Fractions

Place Value and Decimal Fractions: In this Module, students' understanding of the patterns in the base ten system are extended from Grade 4's work with place value of multi-digit whole numbers and decimals to hundredths to the thousandths place. In Grade 5, students deepen their knowledge through a more generalized understanding of the relationships between and among adjacent places on the place value chart, e.g., 1 tenth times any digit on the place value chart moves it one place value to the right.

Fifth Grade, Module 1

Special points of interest:

- ✓ Words to Know
- ✓ Sample Problems
- ✓ Standard Form
- ✓ Expanded Form
- ✓ Place Value Chart
- ✓ Help at home
- ✓ Standards for Mathematical Practice
- ✓ Florida Standards

Words to Know

Thousandths – one of 1,000 equal parts; thousandth's place (in decimal notation) the position of the third digit to the right of the decimal point

Hundredths – one of 100 equal parts; hundredth's place (in decimal notation) the position of the second digit to the right of the decimal point

Tenths – one of 10 equal parts; tenth's place (in decimal notation) the position of the first digit to the right of the decimal point

Place Value - the value of the place of a digit (0-9) in a number

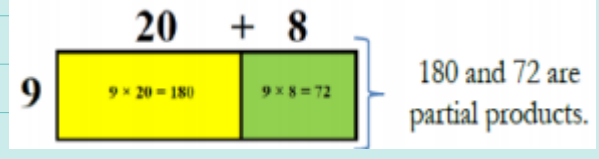
Decimal Fraction - a fractional number with a denominator of 10 or a power of 10 (10, 100, 1,000). It can be written with a decimal point

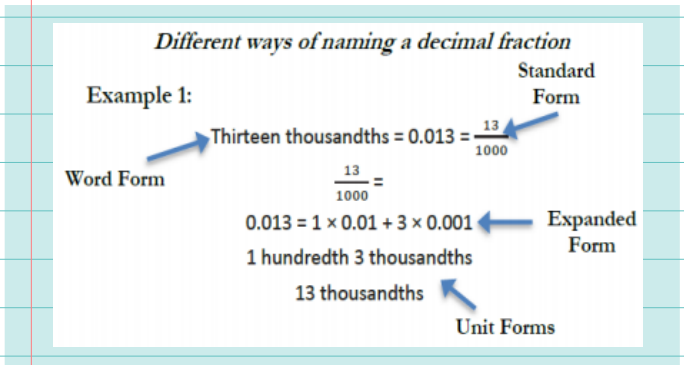
Exponent - tells the number of times the base is multiplied by itself Example: 10^4 – the 4 is the exponent and tells us the 10 (base) is multiplied 4 times (10 x 10 x 10 x 10)

Equation – statement that two mathematical expressions have the same value

Area Model– a graphic organizer that organizes the partial products.

Example:





Questions?

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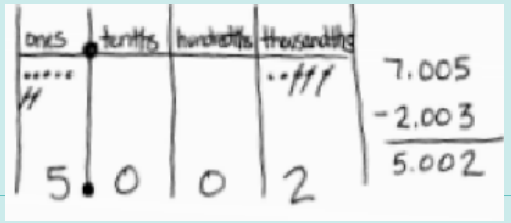
Sample Problems

Teacher says:

"Subtract 2 ones 3 thousandths from 7 ones 5 thousandths."

Students use a place value chart to solve.



Decompose

Decompose – showing the different ways a number can be separated into the most of each place value unit.

tens	ones	tenths	hundredths
5	2	9	
	52	9	
		529	

52.9 = 5 tens 2 ones 9 tenths
52 ones 9 tenths
529 tenths

The goal of DUVAL Math is to produce students who are not merely literate, but fluent, in mathematics. Your child has an exciting year of discovering the story of mathematics ahead!

Place Value

Place Value Chart - In Module 1, students will make extensive use of place value tools, as they have done in earlier grade levels. Now, however, students work with the extended place value chart, which includes place values to the thousandths.

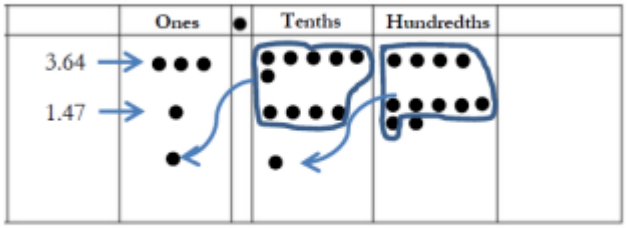
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
1 ÷10									
	1								

(Above) Place Value Chart, with the thousandths place

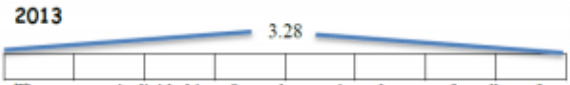
(Below) 27.346 on the chart

tens	ones		tenths	hundredths	thousandths
2	7		3	4	6

3.64 + 1.47 = _____



3.64
+ 1.47
5.11
Algorithm



The segment is divided into 8 equal parts since the cost of a gallon of milk in 2013 was 8 times as much as in 1950.

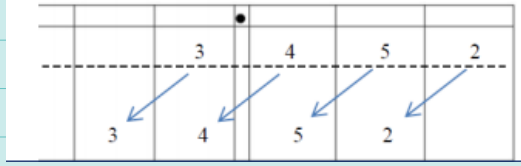
1950 - The cost of a gallon of milk in 1950 is one of the 8 parts.

?

3.28 ÷ 8
= (32 tenths ÷ 8) + (8 hundredths ÷ 8)
= 4 tenths + 1 hundredth
= 0.41

Milk costs $0.41 a gallon in the 1950's.

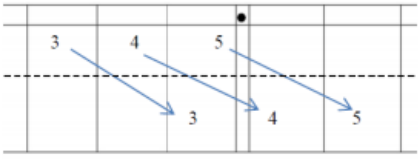
When we multiply a decimal fraction by a power of 10, the product will be larger than the original number; therefore we are shifting to the left on the place value chart. The number of times we shift to the left depends on the power of 10. If multiplying by 10, we shift one place to the left. If multiplying by 100, we shift two places to the left and if multiplying by 1,000, we shift three places to the left and so on.

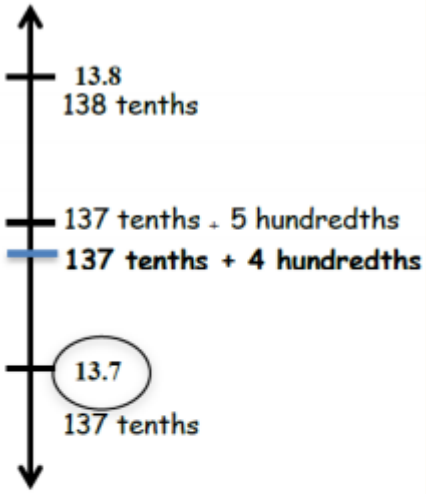


3.452 x 10 = 34.52

When we divide a decimal fraction by a power of 10, the product will be smaller than the original number; therefore we are shifting to the right on the place value chart. The number of times we shift to the right depends on the power of 10. If dividing by 10, we shift one place to the right. If dividing by 100, we shift two places to the right and if dividing by 1,000, we shift three places to the right and so on..

345 ÷ 100 = 3.45





A decimal number has two digits to the right of its decimal point. If we round it to the nearest tenth, the result is 13.7. What is the **maximum** possible value of this number? Include the midpoint on your number line.

How can you help at home?

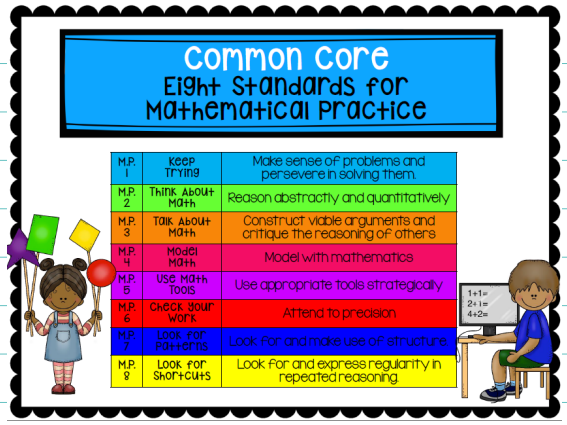
Create number cubes or spinners and have the student identify the place value and value of different digits in that number. • Roll or pick numbers to create decimals. Add, subtract, multiply, or divide the decimals. • Find the batting averages or other statistics in the sports section of a newspaper and add or subtract the statistics. • Estimate and find the sums and differences of items at the store and in restaurants. • Practice basic addition, subtraction, multiplication and division facts. • Roll or pick numbers to create decimals. Compare and order the numbers. • Choose a four-digit number. Multiply and divide by powers of 10 (10, 100, 1,000, etc.) by moving the decimal point left or right as appropriate.

Standards for Mathematical Practice

During the first 10 days of schools, teachers will emphasize the importance of the 8 Standards for mathematical practice through 30 minute lessons.

These practices will be embedded in lessons daily throughout the school year.

Strength with the mathematical practic-es make strong mathematicians!



Mathematics Florida Standards

5.NBT.1.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

5.NBT.1.2 Explain patterns in the number of zeroes of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.NBT.1.3 Read, write, and compare decimals to thousandths.

a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).

b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

5.NBT.1.4 Use place value understanding to round decimals to any place.

5.NBT.2.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

5.MD.1.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.