MATH NEWS

Grade 5, Module 1, Topic F

LAFAYETTE PARISH SCHOOL SYSTEM
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5th Grade Math

Module 1: Place Value and Decimal Fractions

Math Parent Letter

This document is created to give parents and students a better understanding of the math concepts found in the Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material taught in the classroom. Grade 5 Module 1 of Eureka Math (Engage New York) covers place value and decimal fractions. Topic F concludes Module 1 with an exploration of division of decimal numbers by one-digit whole number divisors using place value charts and unit form.

Topic F: Diving Decimals

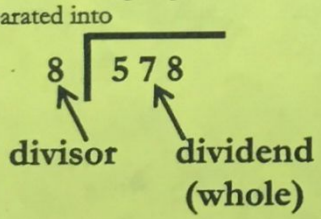
Words to know

- Thousandths/Hundredths/Tenths
- Dividend
- Quotient
- Dividend (Whole)
- Divisor
- Tape Diagram

Quotient – answer to a division problem

Dividend (whole) - a quantity to be separated into the number of equal groups or into the amount in each group

Divisor – tells the size of the group or the number of groups the whole is being separated into



Objectives of Topic F

- **Divide decimals by single-digit whole numbers involving easily identifiable multiples using place value understanding and relate to a written method.**
- **Divide decimals with a remainder using place value understanding and relate to a written method.**
- **Divide decimals using place value understanding including remainders in the smallest unit.**
- **Solve word problems using decimal operations.**

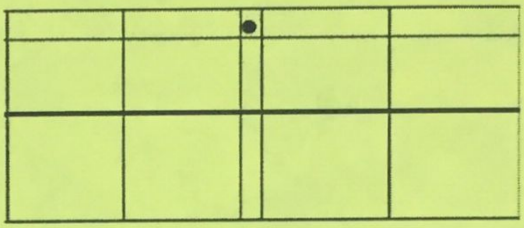
Focus Area– Topic F

Dividing Decimals on the Place Value Chart

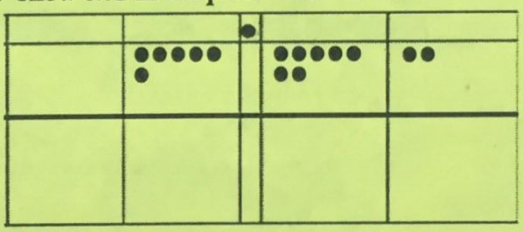
When dividing decimals students will use a place value chart to assist them.

Problem: **6.72 ÷ 3**

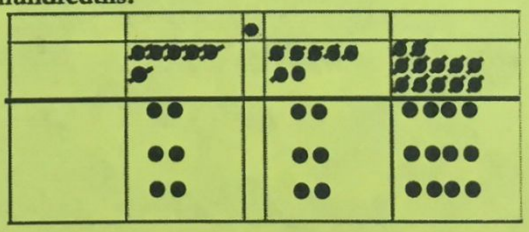
Step 1: **Draw a place value chart and separate the bottom part into 3 groups since we are taking the whole (6.72) and dividing it into 3 equal parts.**



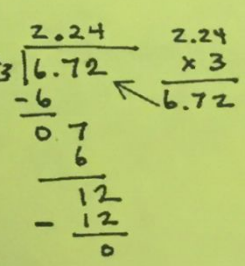
Step 2: **Show 6.72 in the place value chart.**



Step 3: **Begin with the larger units which in this problem is the ones place. We can share 6 ones equally with 3 groups. There will be 2 ones in each group.**
Now we move to the tenths. We can share 7 tenths with 3 groups by giving each group 2 tenths and then there will be 1 tenth left. The 1 tenth will be renamed as 10 hundredths. Now there are a total of 12 hundredths which can be shared with 3 groups by giving each group 4 hundredths.



Division Algorithm
Students will see a similarity between the algorithm and the place value chart.
We can check our answer by multiplying the quotient by the divisor. The answer should be the dividend or the whole.



Decimals can also be divided by breaking apart the dividend into unit form. Both of these parts can then be divided by the divisor and then added together to find the quotient.

12.64 ÷ 2

(12 ones ÷ 2) + (64 hundredths ÷ 2)

= 6 ones + 32 hundredths = 6.32

Application Problems and Answers:

12.48 milliliters of medicine were separated into doses of 4 ml each. How many doses were made?

= 12.48 ÷ 4

= (12 ones ÷ 4) + (48 hundredths ÷ 4)

= 3 ones + 12 hundredths

= 3.12 doses

3.12 doses can be made.

Grayson wrote the following in her math journal:

1.47 ÷ 7 = 2.1

Use words, numbers and pictures to explain why Grayson's thinking is incorrect.

1.47 ÷ 7 cannot equal 2.1 because 2.1 is greater than 1.47, which is the number that is being divided into 7 parts; therefore answer has to be smaller than 1.47.

1.47 ÷ 7

= (14 tenths ÷ 7) + (7 hundredths ÷ 7)

= 2 tenths + 1 hundredth

= 0.21

Grayson rewrote 1.47 as 14 ones and 7 tenths instead of 14 tenths and 7 hundredths.

Application Problems and Answers:

Mrs. Henderson makes punch by mixing 10.9 liters of apple juice, 600 milliliters of orange juice, and 8 liters of ginger ale. She pours the mixture equally into 6 large punch bowls. How much punch is in each bowl? Express your answer in liters.

10.9 liters
8.0 liters
0.600 liters (1 liter = 1,000 milliliters)
19.500 liters of mixture

```
  3.250
6|19.500
 -18
  15
 -12
  30
  30
   00
   00
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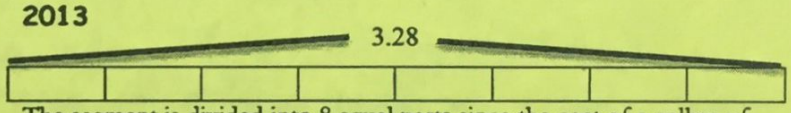
In each punch bowl, there are 3.250 or 3.25 liters of the mixture.

The price of most milk in 2013 was around $3.28 a gallon. This is eight times as much as you would have probably paid for a gallon of milk in the 1950's. What was the cost for a gallon of milk during the 1950's?

Use a tape diagram to show your calculations. (**A tape diagram is a drawing that looks like a segment of tape, used to illustrate number relationships.**)

2013



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.