Warm up Grade 6

Date: Nov 15

1) a) List the following integers from least to greatest

~~-8~~, ~~+9~~, ~~0~~, ~~-15~~, ~~+7~~, ~~-1~~, ~~+2~~,

-15, -8, -1, 0, +2, +7, +9

b) Place < , > or = into the ____

i) -9 < -2 Bigger ii) 0 < +6 Big iii) +3 > -7 Big

2) Write the following in written form 92 054 700 301

Ninety-two billion fifty-four million seven hundred thousand three hundred one

3) Determine if the following is equivalent. Follow BEDMAS

a) 9 x 4 - 6 (7+5) x 3 - 12÷2

36 - 6 12 x 3 - 12÷2

30 36 - 12÷2

36 - 6

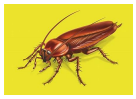
30

Equivalent

Lesson 1

Decimals are all around us.

Average mass of a human is 180.62 pounds

Smallest cockroach is the Ant Cockroach and id 0.139 mm 

Greatest wingspan for a vulture was 2.83 m 

Speed of light is 2.9979 m/s

Review from grade 5

-you described and represented decimals

(tenths,hundredths and thousandths) in standard form, expanded form, and written form. You also and compared decimals

Let's review

Label the place values that you know

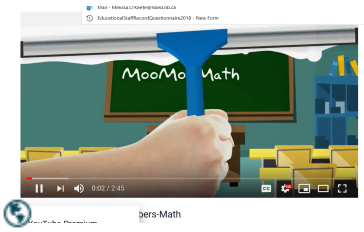
Tens	ones	Tenths	Hundredths	Thousandths		

Can you read the following decimal?

2.54 ← This is in standard form

Two and fifty-four hundredths

This is written form



Can you write the following decimal in expanded form?

2.54 Write the number followed by the place value with addition signs.

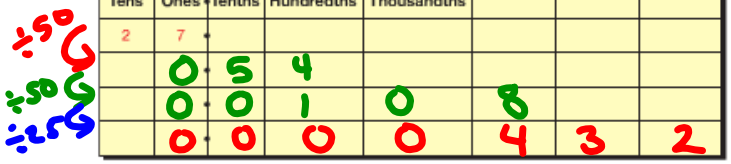
2 ones + 5 tenths + 4 hundredths ← expanded form words

or

2 + 0.5 + 0.04 ← expanded form with decimal

Explore

You will need a calculator and a copy of a place-value chart.
Write the headings and the number 27 in the chart, as shown below.



Tens	Ones	Tenths	Hundredths	Thousandths			
2	7						
	0	5	4				
	0	0	1	0	8		
	0	0	0	0	4	3	2

a) Divide 27 by 50.
Record it in the chart.
b) Divide your answer to part a by 50.
Record it in the chart.
c) Divide your answer to part b by 25.
Record it in the chart.

Use what you know about the headings in a place-value chart for whole numbers.
Write the missing headings in your place-value chart.

Connect

There are many patterns in the place-value chart.

Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten-Thousandths	Hundred-Thousandths	Millionths
100 000	10 000	1000	100	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$	$\frac{1}{10\,000}$	$\frac{1}{100\,000}$	$\frac{1}{1\,000\,000}$

1 = 10 tenths $\frac{1}{100}$ = 10 thousandths $\frac{1}{10\,000}$ = 10 hundred-thousandths

Notice as you move to the left, it's value is 10 time greater than the previous

Notice as you move to the right, it's value is 10 time lesser than the previous

Decimal Place Value Chart													
Millions	Hundred thousands	Ten thousands	Thousands	Hundreds	Tens	Ones	Decimal point	Tenths	Hundredths	Thousandths	Ten-thousandths	Hundred thousandths	Millionths
							.						

Image 1: Decimal Place Value chart.

2	.	7	0	5	3	
2		0.7	0.00	0.005	0.0003	value of the place value

When we have decimals 76. 361 507

we leave spaces after each group of 3 digits

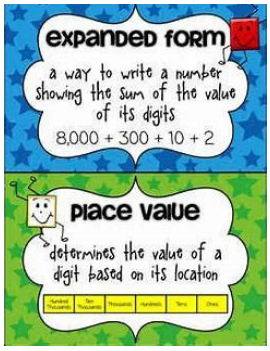
a) $2.\overrightarrow{7053}$

two and seven thousand fifty-three ten-thousandths

46 271

3462

Written and Expanded Form



Example:
4. 371 864

In expanded form (Use place value names with "+" sign or the value of the place value)

4 ones + 3 tenths + 7 hundredths + 1 thousandths + 8 ten-thousandths + 6 hundred-thousandths + 4 millionths

decimal

= 4 + 0.3 + 0.07 + 0.001 + 0.000 8 + 0. 000 06 + 0.000 004

We read:

four and three hundred seventy-one thousandths eight hundred sixty-four millionths

Small decimals are often used in science. For example:

A garden snail moves very slowly. In 1 h, it travels 0.0483 km. We read this number as: four hundred eighty-three ten-thousandths

Sound travels very fast. It would take 0.0046 min for sound to travel from one end of a football field to the other. We read this number as: forty-six ten-thousandths

You try

1)Write 5.384 512 in

a)written form using decimals

5 + 0.3 + 0.08 + 0.004 + 0. 000 5 + 0. 000 01 + 0.000 002

b) How would you read 5.384 512

five and three hundred eighty-four thousandths

five hundred twelve millionths

2) Write 6.308 24 in

a)written form using decimals (Expanded)

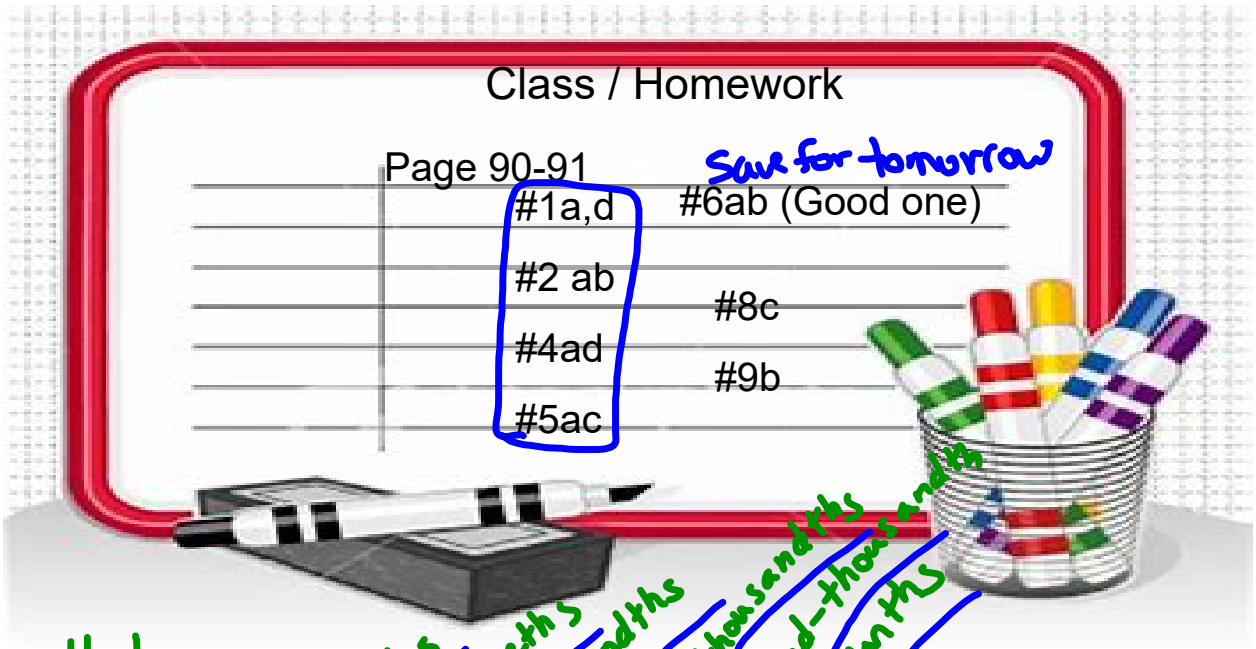
6 + 0.3 + 0.008 + 0. 000 2 + 0. 000 04

b) How would you read 6.308 24

Six and three hundred eight thousandths

twenty-four hundred-thousandths

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths	Millionths



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	Ones	•	tenths	hundredths	Thousandths	Ten-thousandths	hundred-thousandths	millionths
a)								
d)								

Practice

1. Use a place-value chart to show each number.
   a) 2.3425 b) 0.142 86 c) 0.0007 d) 0.000 298

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths	Millionths

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths	Millionths

2. Use the numbers in the table.
Write the number that has a 5 in:

a) the ten-thousandths position
b) the millionths position
c) the thousandths position
d) the hundred-thousandths position
e) the tenths position

0.635 734
0.506 312
1.003 825
3.702 456
2.184 592

3. Describe the meaning of each digit in 4.524 371.

4. Write each number in standard form.

a) 8 and 26 ten-thousandths

b) 24 millionths

c) 3 hundred-thousandths

d) 4 and 374 millionths

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths	Millionths

5. Write each number in expanded form.

a) 0.0056 b) 0.000 49 c) 3.000 023 d) 0.348 619

6. Write a decimal that is between:

a) 2.153 and 2.154

b) 0.6534 and 0.6535

7. Find two examples of very small numbers in the media. Write each number in a place-value chart. Explain how you use the patterns in the chart to read these numbers.

8. How are the values of the red digits in each number related?

a) 5.000 05 b) 2.1433 c) 0.677 56 d) 4.234 654

9. Write the number in each fact in as many different forms as you can.
   a) A strand of silk in the web of a garden spider has a diameter of about 0.000 003 m.
   b) The diameter of one red blood cell is about 0.000 762 cm.
   c) The mass of a grain of rice is about 0.000 02 kg.

10. Use any or all of these digits: 1, 0, 2, 0, 4, 0, 5, 0

a) Write 5 numbers less than one thousandth.

b) Which of your numbers is the least? How do you know?

c) Which of your numbers is the greatest? How do you know?