Warm-up

- $6 \times 1 = 6$
- $6 \times 2 = 12$
- $6 \times 3 = 18$
- $6 \times 4 = 24$
- $6 \times 5 = 30$
- $6 \times 6 = 36$

- $6 \times 7 = 42$
- $6 \times 8 = 48$
- $6 \times 9 = 54$
- $6 \times 10 = 60$
- $6 \times 11 = 66$
- $6 \times 12 = 72$

Decimal Addition & Subtraction Unit
Date: _____

Review first

1) Show work on how to find the sum of 1789 and 68

$$
\begin{array}{r}
1789 \\
+ \quad 68 \\
\hline
1857
\end{array}
$$

2) Show work on how to find the difference of 927 and 88

$$
\begin{array}{r}
927 \\
- \quad 88 \\
\hline
839
\end{array}
$$

Review first

1) Show work on how to find the sum of 1789 and 68

2) Show work on how to find the difference of 927 and 88

$$
\begin{array}{r}
\overset{8}{\cancel{9}}\,\overset{11}{\cancel{2}}\,7 \\
-\ \ 8\ 8 \\
\hline
8\ 3\ 9
\end{array}
$$

↓
Subtract
Big - Small

Decimals

Decimal Place Value Chart

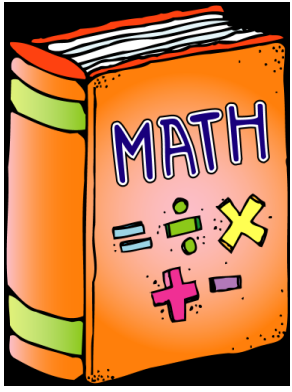| Millions	Hundred thousands	Ten thousands	Thousands	Hundreds	Tens	Ones	Decimal point	Tenths	Hundredths	Thousandths	Ten-thousandths	Hundred thousandths	Millionths
			3	6	8	4	.	2	6				

Image 1: Decimal Place Value chart.

2.437
tenths hundredths

Key words for operations

The words that indicate operations math word problems are:

add	Subtract	Multiply	Divide
addition,	subtract,	times,	divided,
sum,	remain,	double,	half,
both,	less than,	of,	average,
combined, altogether,	decrease,	product,	split,
more than,	take away,	twice,	quotient,
perimeter,	minus,	area,	equal groups,
increase,	fewer,	each,	share equally,
plus	how many more are needed,	per, /	out of,
total	difference	triple	quarter,
deposit	withdraw	a rate.	distribute,
			finding out cost of each item.

Add or Subtract Decimals

To add or subtract decimals, follow these steps:

> Write the numbers one under the other, with the decimal points lined up.

> Put in zeros so the numbers have the same length

> Then add or subtract, using column addition, remembering to put the decimal point in the answer lined up.

Ex) 2.65 + 3.7

$$
\begin{array}{r}
\overset{1}{2}.65 \\
+\ 3.70 \\
\hline
6.35
\end{array}
$$

Ex) 10.2 - 6.05

$$
\begin{array}{r}
\overset{0}{\cancel{1}}\overset{10}{0}.\overset{1}{2}\overset{10}{0} \\
-\ 6.05 \\
\hline
4.15
\end{array}
$$

Add or Subtract

↳ the decimal (•) lines up

a) 17.6 + 0.25

$$\begin{array}{r} 17.60 \\ +\ \ 0.25 \\ \hline 17.85 \end{array}$$

b) 56.3 - 11.75

$$\begin{array}{r} 5\ \ 12\ \ 10 \\ 56.30 \\ -\ 11.75 \\ \hline 44.55 \end{array}$$

c) 20 + 8.2

d) 11.6 - 5.06

Rounding Rules

-Underline place value you are rounding to

-Look at the Digit to the right

　　5 or greater then increase by 1

　　4 or less then stays the same

-Keep everything before the underline the same

Example) Round to the <u>ones</u> place

a) 19.26

19.0

b) 47.82

48.0

$15 \to 20$

$22 \to 20$

Ex) Round 18.679 to the tenths place

Ex) Round 14.364 to the tenths place

Ex) Round to the hundredths

a) 14.867

14.87

b) 0.562

0.56

c) 15.931

15.93

d) 16.896

16.90

Round to the tenths

e) 7.46

7.5

f) 10.98

11

$38 \Rightarrow 40$

$32 \Rightarrow 30$

Estimating

- Round to the ones place and drop the decimal part.

Example)

Estimate the sum of the following

12.46 + 10.21 + 15.07

$12 + 10 + 15 = 37$

Front-End Estimation

-Another form of estimating

-We just cut off the decimal part and use the numbers in front of decimal and add or subtract.

Ex)

5.45 + 9.89 + 3.53 + 6.03

We will just use cut off the decimal

Estimate the difference

14.15 - 9.56

Find the actual

https://www.youtube.com/watch?v=CYD8zRDaE1I&list=PL5fPUcMx66wa65MylA eUbTOJlIPBF33Vq

Worksheet

Name:_____

Students must show all math work to earn full value.

Only estimate when asked to estimate. (If not then just add or subtract normally showing work)

1. Use front-end estimation to estimate each sum or difference.

a) 3.478 - 0.846

b) 79.216 + 5.21

c) 147.14 + 34.97

d) 10.9- 1.47

2) Tim travels the same road to get to his grandmothers house and his friend Karen's house. If the distance from Tim's house to his grandmother's house is 0.743 km and the distance from Karen's house to Tim's house is 0.476 km, then what is the difference in the distance from Karen's house to Tim's Grandmothers

3) Four classes of students at Blackville are planning a trip. The total cost is $2048.50. To date the classes have raided: $376.15, $424.05, $231.24, $376.75.

a) How much money have the classes raised so far?

b) How much more money do the classes need to raise in total?

4) A chef is preparing 3 different types of pasta dishes. The recipes require 1.8 kg, 3.25 kg, and 4.6 kg of pasta. The chef has 8.5 kg of pasta available.

a) How many kilograms of pasta does the chef need in total? Estimate to check if your answer is reasonable.

b) Does the chef have enough pasta to make all the dishes? How can you tell?

c) If the chef wants to follow the recipes exactly, and your answer to part b is no, how many more kilograms of pasta are needed? If your answer to part b is yes, how much pasta will be left over?

5) Estimate, then calculate, the sum below. Explain how you estimated: $35.42 + 7.8 + 2.135$

6) The Lopez family and the Patel family have similar water usage habits.

The Lopez family does not use water-saving fixtures. Their monthly water bills were: $87.50, $92.30, and $78.45.

The Patel family installed water-saving fixtures in their home. Their monthly water bills were: $65.40, $58.75, and $62.10.

a) How much money did each family spend on water during the three months?

b) How much more money did the Lopez family spend? Estimate to check your answer is reasonable.

c) What other measures could a family take to reduce their water bills?

Round each number to the nearest tenth.

1) 8.23 _____

2) 5.24 _____

3) 9.38 _____

4) 2.31 _____

5) 9.46 _____

6) 3.46 _____

7) 5.24 _____

8) 8.45 _____

9) 9.69 _____

10) 2.45 _____

Round each decimal to the nearest whole number

1) 9.231 _____

2) 3.272 _____

3) 6.318 _____

4) 3.337 _____

5) 3.556 _____

6) 1.775 _____

7) 4.859 _____

8) 8.854 _____

9) 9.248 _____

10) 9.958 _____