

Warm up Grade 6

Date: _____



1) Use benchmarks to estimate each product.

a) 2.345×5

about
 2×5
 ≈ 10

b) 8.67×4

about
 $\approx 9 \times 4$
 ≈ 36

Frontend
 or 8×4
 $= 32$

2) For #1 find the actual product (Show work)

a)

$$\begin{array}{r} 2.345 \\ \times 5 \\ \hline 11.725 \end{array}$$

close to 10

b)

$$\begin{array}{r} 8.67 \\ \times 4 \\ \hline 34.68 \end{array}$$

close to 32

Practice Don't use base ten block, Multiply like we did in class

Homework Solutions

1. Use Base Ten Blocks to multiply.

a) $2.3 \times 2 = 4.6$ b) $1.8 \times 4 = 7.2$ c) $1.23 \times 5 = 6.15$ d) $2.42 \times 3 = 7.26$

2. The decimal point is missing in each product.

- Use front-end estimation to place each decimal point.
 a) $7.1 \times 5 = 355$ b) $3.12 \times 6 = 1872$
 c) $15.466 \times 3 = 46398$ d) $1.408 \times 5 = 7040$
 e) $2.005 \times 8 = 1604$ f) $8.25 \times 4 = 330$

2 a) $7.1 \times 5 = 35.5$

Step 1: $7 \times 5 = 35$ (estimation)

Step 2: $7.1 \times 5 = 35.5$
 (I know the decimal is correct because of my estimation)

2 c) $15.466 \times 3 = 46.398$

Step 1: $15 \times 3 = 45$ (estimation)

Step 2: $15.466 \times 3 = 46.398$
 (I know the decimal is correct because of my estimation)

2 e) $2.005 \times 8 = 16.04$

Step 1: $2 \times 8 = 16$ (estimation)

Step 2: $2.005 \times 8 = 16.04$
 (I know the decimal is correct because of my estimation)

2 b) $3.12 \times 6 = 18.72$

Step 1: $3 \times 6 = 18$ (estimation)

Step 2: $3.12 \times 6 = 18.72$
 (I know the decimal is correct because of my estimation)

2 d) $1.408 \times 5 = 7.040$

Step 1: $1 \times 5 = 5$ (estimation)

Step 2: $1.408 \times 5 = 7.040$
 (I know the decimal is correct because of my estimation)

2 e) $8.25 \times 4 = 33.0$

Step 1: $8 \times 4 = 32$ (estimation)

Step 2: $8.25 \times 4 = 33.0$
 (I know the decimal is correct because of my estimation)

3. Use benchmarks to estimate each product.

- a) 2.4×6 b) 4.38×4 c) 1.499×6
 d) 6.721×2 e) 3.98×3 f) 7.3225×5

3a) 2.4×6

$2 \times 6 = 12$ (Estimate)

3b) 4.38×4

$4 \times 4 = 16$ (Estimate)

3c) 1.499×6

$1.5 \times 6 = 9$ (Estimate)

3d) 6.721×2

$7 \times 2 = 14$ (Est)

3e) 3.98×3

$4 \times 3 = 12$ (Est)

3e) 7.3225×5

$7 \times 5 = 35$ (Est)

4. Multiply.

- a) 8.2×4 b) 1.02×6 c) 5.9×2
 d) 6.112×3 e) 3.525×7 f) 5.354×6

a) $8.2 \times 4 = 32.8$

b) $1.02 \times 6 = 6.12$

c) $5.9 \times 2 = 11.8$

d) $6.112 \times 3 = 18.336$

e) $3.525 \times 7 = 24.675$

f) $5.354 \times 6 = 32.124$

$6 \times 3 = 18$ $3 \times 7 = 21$

Ch. 3 Lesson 3

RECALL FROM YESTERDAY

Multiply decimals by whole numbers



$$3.4 \quad \times \quad 6$$

When multiplying decimals, you do NOT line up decimal places
BUT you line up numbers on top of each place

$$\begin{array}{r} 3.4 \\ \times 6 \\ \hline \end{array}$$

Step 1) Ignore the decimals until the end and multiply 34×6
(Show work)

$\begin{array}{r} 34 \\ \times 6 \\ \hline 204 \end{array}$		<div style="border: 1px solid black; width: 100px; height: 30px; margin: 0 auto;"></div>	Or area model so
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Step 2) To replace the decimal, there are two methods



Method 1) Estimate! This will help you place your decimal

$$3.4 \times 6$$

$$\text{Estimation: } 3 \times 6 = 18$$

My answer should be around 18

So $3.4 \times 6 = 20.4$ since it is close to 18



Method 2) count the TOTAL number of digits after the decimal place in your original questions

3.4 Has 1 number after the decimal point

$\times 6$ has 0 numbers after the decimal place

answer $1+0 = 1$ decimal



My answer should have number after the decimal place



Be careful this is tricky with numbers ending in zeros or 5 (Best to estimate)

Find the solution to each (Show work)

1. Each day Tyson buys his lunch at school. He spends \$5.75 each day. If he buys for 5 days, then how much did Tyson spend in total?

$$\begin{array}{r}
 \overset{3}{\$} \overset{2}{5}.\overset{1}{7}\overset{0}{5} \\
 \times \quad \quad \quad 5 \\
 \hline
 \overset{3}{\$} \overset{2}{28}.\overset{1}{7}\overset{0}{5}
 \end{array}$$

Estimate

$$\begin{array}{r}
 \rightarrow \quad \overset{5}{5} \overset{6}{6} \\
 \times 5 \\
 \hline
 \overset{\$}{\$} 30
 \end{array}$$



Tyson spent \$28.75 in total for lunch.

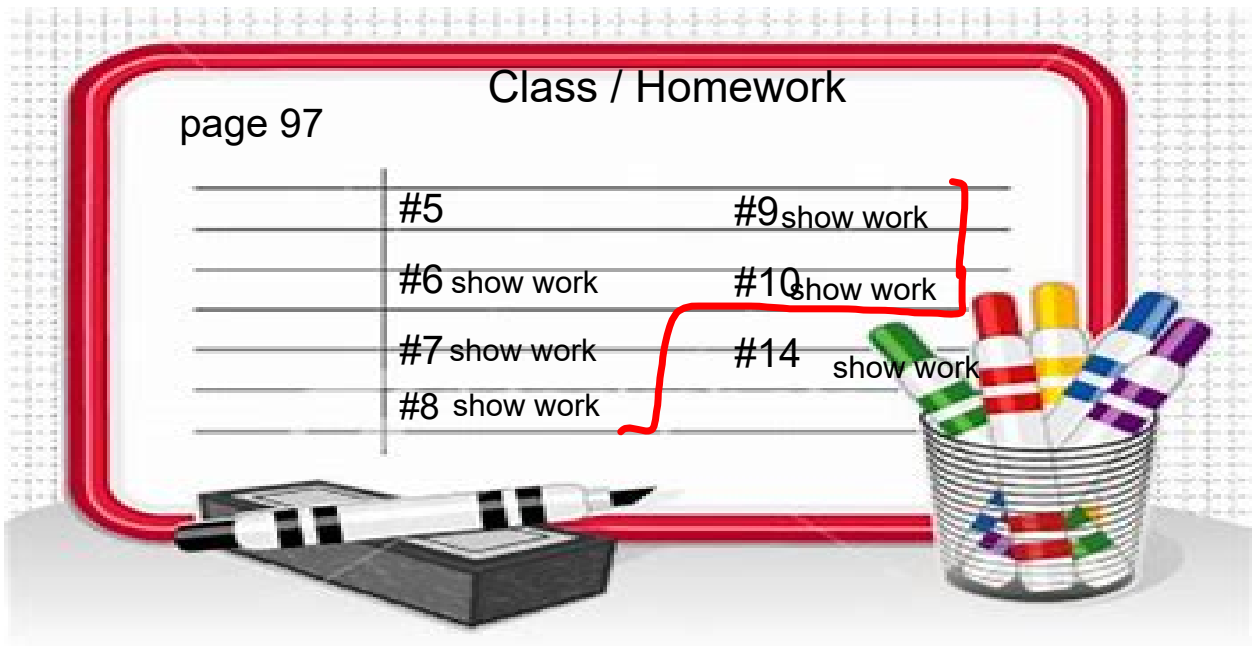
Multiply

2) 2.5×7

$$\begin{array}{r}
 \overset{3}{2}.\overset{2}{5} \\
 \times \quad \quad \quad 7 \\
 \hline
 \overset{3}{17}.\overset{2}{5}
 \end{array}$$

Estimate

$$\begin{array}{r}
 \rightarrow \quad \overset{2}{2} \\
 \times 7 \\
 \hline
 \quad \quad 14
 \end{array}$$



5. Estimate to choose the correct product for each multiplication question.

	Question	Possible Products		
a)	2.85×3	855	85.5	8.55
b)	12.36×4	494.4	49.44	4.944
c)	148.73×5	7.4365	74.365	743.65

6. Elisa works in a hospital lab in Brandon, Manitoba.
In 1 h, she tested 7 tubes of blood.
Each tube contained 12.25 mL of blood.
How much blood did Elisa test?
How did you find out?

7. Naja saved \$14.75 each week for 8 weeks.
She had just enough money to buy a family membership to the Vancouver Aquarium. About how much was the cost of the membership?

8. Tianna has saved \$9.75 each week for 7 weeks.
She wants to buy a snowboard that costs \$80.45, including tax.
- Does Tianna have enough money? How do you know?
 - If your answer to part a is no, how much more money does Tianna need?



9. The decimal point in some of these products is in the wrong place. Identify the mistakes, then write each product with the decimal point in the correct place.
- | | |
|-----------------------------|------------------------------|
| a) $4.01 \times 5 = 200.5$ | b) $7.893 \times 3 = 23.679$ |
| c) $89.85 \times 4 = 35.94$ | d) $1.98 \times 3 = 0.594$ |



10. a) Akuna sold three 1.375-L bottles of birch syrup to raise money for his school in Hay River.
Did Akuna sell more or less than 4 L of syrup?
How much more or less? Explain how you know.
- b) Akuna sold each bottle of syrup for \$74.79.
How much money did he raise?

11. The Townsend's big-eared bat lives in river valleys in southern British Columbia. It has a mass of 8.812 g. What is the combined mass of 6 of these tiny bats?



12. Write a story problem that can be solved by multiplying 4.026 by 7.

Trade problems with a classmate and solve your classmate's problem.

13. You can estimate how tall a child will be as an adult by doubling her height at 2 years of age.
Serena is 2 years old and 81.4 cm tall.
About how tall will Serena be as an adult?

14. The Three Dog Bakery in Vancouver sells bags of all-natural chicken-flavoured dog food for \$7.95 each. Saima buys 3 bags.

a) Saima gives the cashier \$25.00.

How much change should she receive?

b) Each bag has a mass of 2.268 kg.

Does Saima have more or less than 7 kg of dog food altogether? How do you know?



Step 1: $7.95 \times 3 =$

Step 2: $8 \times 3 = 24$ (estimation)

Step 3: $795 \times 3 =$

$700 \times 3 =$	2100
$90 \times 3 =$	270
$5 \times 3 =$	<u>15</u>
	2385

Step 4: $7.95 \times 3 = 23.85$ (I know where to put my decimal because of my estimation)

Step 5 (Question a)

25.00
<u>$- 23.85$</u>
1.15

She should receive \$1.15 in change

Step 6: (Question b)

$2.268 \text{ kg each} \times 3$ (he bought 3 bags) =

$2 \times 3 = 6$ (estimation)

$2268 \times 3 =$

$2000 \times 3 =$	6000
$200 \times 3 =$	600
$60 \times 3 =$	180
$8 \times 3 =$	<u>24</u>
	6812

$2.268 \times 3 = 6.812$ (I knew where to put the decimal because of my estimation)

Saima has **less** than 7 kg of dog food.