

Warm up Grade 6

Date: _____



1) Use benchmarks to estimate each product.

a) 2.345×5
 Round $\approx 2 \times 5$
 ≈ 10
under est

b) 8.67×4
 Round $\approx 9 \times 4 = 36$

Front
 $8 \times 4 = 32$

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

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

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

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

1. Use Base Ten Blocks to multiply.

$$\begin{array}{r} 2.3 \\ \times 2 \\ \hline 4.6 \end{array}$$

$$\begin{array}{r} 1.8 \\ \times 4 \\ \hline 7.2 \end{array}$$

$$\begin{array}{r} 1.23 \\ \times 5 \\ \hline 6.15 \end{array}$$

$$\begin{array}{r} 2.42 \\ \times 3 \\ \hline 7.26 \end{array}$$

$$\begin{array}{r} 2.3 \\ \times 3 \\ \hline 6.9 \end{array}$$

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 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 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 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) $2.005 \times 8 = 16.04$

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 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) 3.983×3

f) 7.3225×5

3a) 2.4×6

$2 \times 6 = 12$ (Estimate)

3b) 4.38×4

$4 \times 4 = 16$ (Estimate)

3b) 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

$$\begin{array}{r} 8.2 \\ \times 4 \\ \hline 32.8 \end{array}$$

$$\begin{array}{r} 1.02 \\ \times 6 \\ \hline 6.12 \end{array}$$

$$\begin{array}{r} 5.9 \\ \times 2 \\ \hline 11.8 \end{array}$$

$$\begin{array}{r} 6.112 \\ \times 3 \\ \hline 18.336 \end{array}$$

$$\begin{array}{r} 3.525 \\ \times 7 \\ \hline 24.675 \end{array}$$

$$\begin{array}{r} 5.354 \\ \times 6 \\ \hline 32.124 \end{array}$$

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-bottom: 10px;"></div> <p>Or area model</p> <p>so</p>
---	--

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 ___ number after the decimal point

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



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?

$$\begin{array}{r}
 \overset{3}{5}.\overset{2}{75} \\
 \times \quad 5 \\
 \hline
 28.75
 \end{array}
 \quad \rightarrow \quad
 \begin{array}{r}
 \text{Est} \\
 6 \\
 \times 5 \\
 \hline
 30
 \end{array}$$



Tyson spends \$28.75 for his lunch for 5 days.

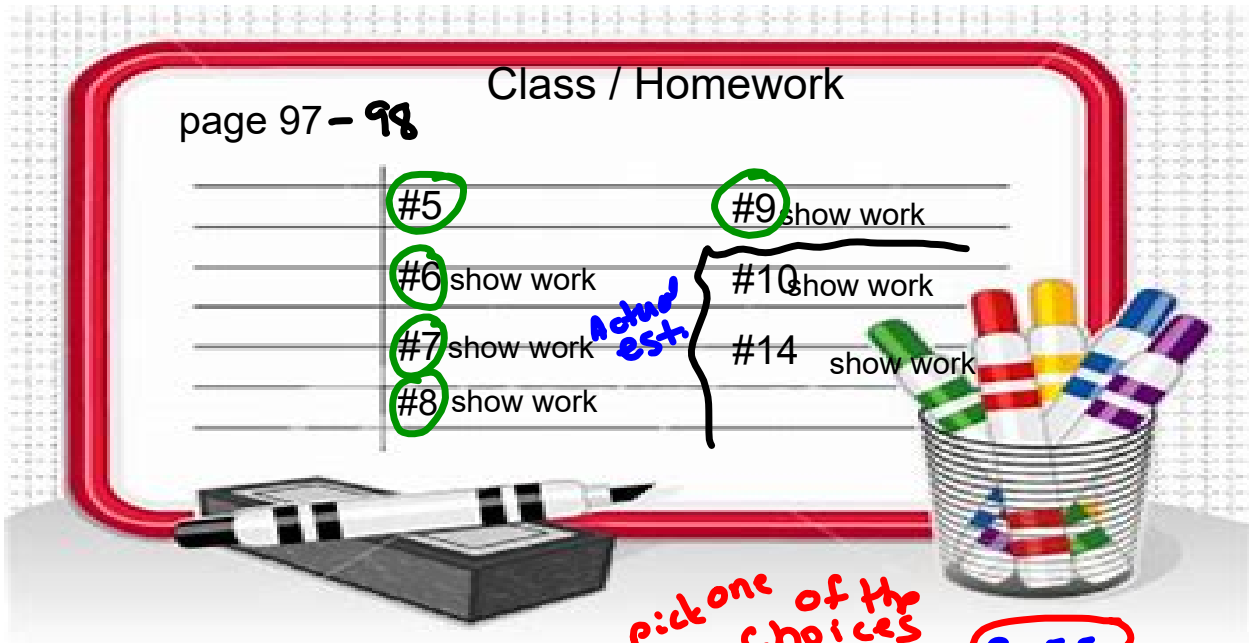
Multiply

2) 2.5×7

$$\begin{array}{r}
 \overset{3}{2}.\overset{2}{5} \\
 \times \quad 7 \\
 \hline
 17.5
 \end{array}$$

$$\begin{array}{r}
 \text{Est} \\
 \overset{2}{2} \\
 \times 7 \\
 \hline
 14
 \end{array}$$

$$\begin{array}{r}
 \text{or} \\
 \text{Bench} \\
 \overset{3}{3} \\
 \times 7 \\
 \hline
 21
 \end{array}$$



5a)

$$\begin{array}{r} 2.85 \times 3 \\ \times 3 \\ \hline 9 \end{array}$$

\Rightarrow pick one of the choices
855, 85.5, 8.55

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?





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.
- Saima gives the cashier \$25.00.
How much change should she receive?
 - 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: $795 \times 3 =$

$$\begin{array}{r} 700 \times 3 = 2100 \\ 90 \times 3 = 270 \\ 5 \times 3 = \underline{15} \\ \hline 2385 \end{array}$$

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

Step 5 (Question a)

$$\begin{array}{r} 25.00 \\ - 23.85 \\ \hline 1.15 \end{array}$$

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)

$$\begin{array}{r} 2268 \times 3 = 2000 \times 3 = 6000 \\ 200 \times 3 = 600 \\ 60 \times 3 = 180 \\ 8 \times 3 = \underline{24} \\ \hline 6812 \end{array}$$

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

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