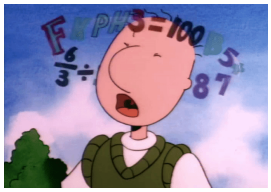
Warm up Grade 6

Date: _____



1) Estimate the product or quotient. Which strategy did you use? Tell if your estimation is an overestimation or an underestimation.

a) 17.27 x 4

$\approx 17 \times 4$

68

b) 65.21÷ 5

$\approx 65 \div 5$

$= 13$

Homework Solutions

Practice

1. Estimate each product or quotient. Which strategies did you use? Tell if your estimate is an overestimate or an underestimate.

a) 7.01×9 b) 3.8×7 c) 11.85×5 d) 19.925×4
e) $9.8 \div 5$ f) $12.31 \div 2$ g) $56.093 \div 7$ h) $225.3 \div 5$

a) Estimate
7 x 9
= 63
Under estimation
Front end

b) Estimate
3 x 7
= 21
Under estimation
Front end

or

b) Estimate
4 x 7
= 28
over estimation
bench mark

4 x 7 = 28
over est

c) Estimate
11 x 5
=55
Under estimation
Front end

or

c) Estimate
12 x 5
= 60
over estimation
bench mark

d) Estimate
20 x 4
= 80
over estimation
bench mark

e) 9.8 ÷ 5
Estimation
10 ÷ 5
= 2
Bench mark
over estimation

f) 12.31 ÷ 2
Estimation
12 ÷ 2
= 6
Bench mark
under estimation

g) 56.093 ÷ 7
Estimation
56 ÷ 7
= 8
front end
under estimation

h) 225.3 ÷ 5
Estimation
225 ÷ 5
= 45
benchmark
under estimation

Homework Solutions

2. Waldo paid $29.85 for 3 admission tickets to the Calgary Tower.
Estimate the cost of one admission ticket.

≈ $30 ÷ 3 = $10

Each ticket is about $10. (Over estimate since 30 is larger than 29.85)

3. A pair of ice cleats for ice fishing costs $14.89.
About how much will 6 pairs of ice cleats cost?
How did you find out?

$14.89 is about $15

$15 x 6 = $90

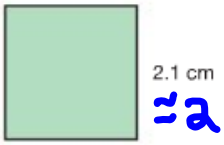
same as (Double and half mental math)

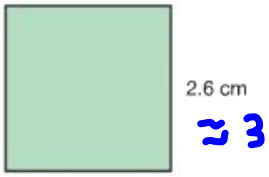
$30 x 3 = $90

6 pairs of ice cleats cost about $90. (Over estimate since 15 is larger than 14.89)

4. Estimate the perimeter of each square.
Tell if your estimate is an overestimate or an underestimate.
How do you know?

a) 

b) 

c) 

P = Side x 4
1cm x 4
4 cm

Under estimate since 1 cm is less than 1.3 cm

P = Side x 4
2cm x 4
8 cm

Under estimate since 2 cm is less than 2.1 cm

P = Side x 4
3cm x 4
12 cm

over estimate since 3 cm is more than 2.6 cm

Homework Solutions

side of square is perimeter divide by 4

5. Estimate the side length of a square with perimeter:
   a) 24.2 cm b) 29.8 cm c) 35.6 cm

side = perimeter÷4
about 24cm÷4
6 cm
underestimate

side = perimeter÷4
about 30cm÷4
7.5 cm
overestimate

side = perimeter÷4
about 36cm÷4
9 cm
overestimate

6. a) Is 9.47 × 5 greater than, or less than, 45? How can you estimate to find out?
   b) Is 23.86 ÷ 4 greater than, or less than, 6? How can you estimate to find out?
   Show your work.

6a)it is greater since 9 is smaller than 9.47 and we know 9x5 is 45 (Using 9 x 5 is front end estimation)

6b) 23.86 is close to 24 but smaller and we know

24 ÷ 6 = 4 so if you take a smaller number and divide it by 6 it is smaller again

7. Copy and complete. Write >, <, or =.
   How did you decide which symbol to use?
   a) 5.6 × 2 □ 1.4 × 4

about
6 x 2
12

about
1.5 x 4
3 x 2 (Half and double)
6

b) 4.8 ÷ 2 □ 15.5 ÷ 5

about
5 ÷ 2
2.5

about
15 ÷ 5
3

Ch. 3 Lesson 3

Multiply decimals by whole numbers

3.4 x 6

When multiplying decimals, you do NOT line up decimal places
BUT you line up (Last digit) numbers on top of each other place

$$\begin{array}{r} 3.4 \\ \times\ \ 6 \\ \hline 20.4 \end{array}$$

$\approx$ $3 \times 6 = 18$

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

$$\begin{array}{r} 34 \\ \times\ \ 6 \\ \hline \end{array}$$

Or area model

so

Step 2) To replace the decimal, there are two methods

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

3.4 x 6

Estimation: ___ = ___

My answer should be around

So _____ since it it close to ___

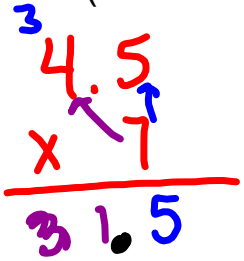
Method 2) count the TOTAL number of digits after the decimal place in your original questions

3.4 Has ... number after the decimal point

x 6 has ..... numbers after the decimal place

My answer should have ..... number after the decimal place

Example: Find 4.5 x 7 (Show work by multiplying first)



≈ 5x7
35

Then Estimate! This will help you place your decimal 4.5 x 7

Estimation: _____

My answer should be around_____

So the answer to 4.5 x 7 = ____

The decimal point is missing in each product. Use front end estimation to place each decimal point.

a) 8.64 x 4 = 3556

≈ 9 x 4

36

3556

355.6

35.56

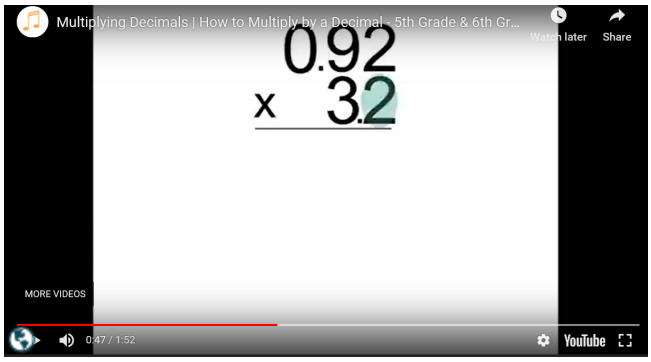
3.556

b) 3.012 x 3 = 9036

≈ 3 x 3

9

Multiplying decimals song



Evaluate

1) 2.3 x 6

$$\begin{array}{r} {\scriptstyle 1} \\ 2.3 \\ \times\quad 6 \\ \hline 13.8 \end{array}$$

$\approx$ $2 \times 6 = 12$

2. 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?

$$\begin{array}{r} {\scriptstyle 3\ 2} \\ 5.75 \\ \times\quad 5 \\ \hline 28.75 \end{array}$$

Tyson spent $28.75 over 5 days for his lunch.

Class / Homework

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#1 Multiply like we did in class

#2 (b,d,f)

#3 (ae)

#4 abcd

#5 show estimate

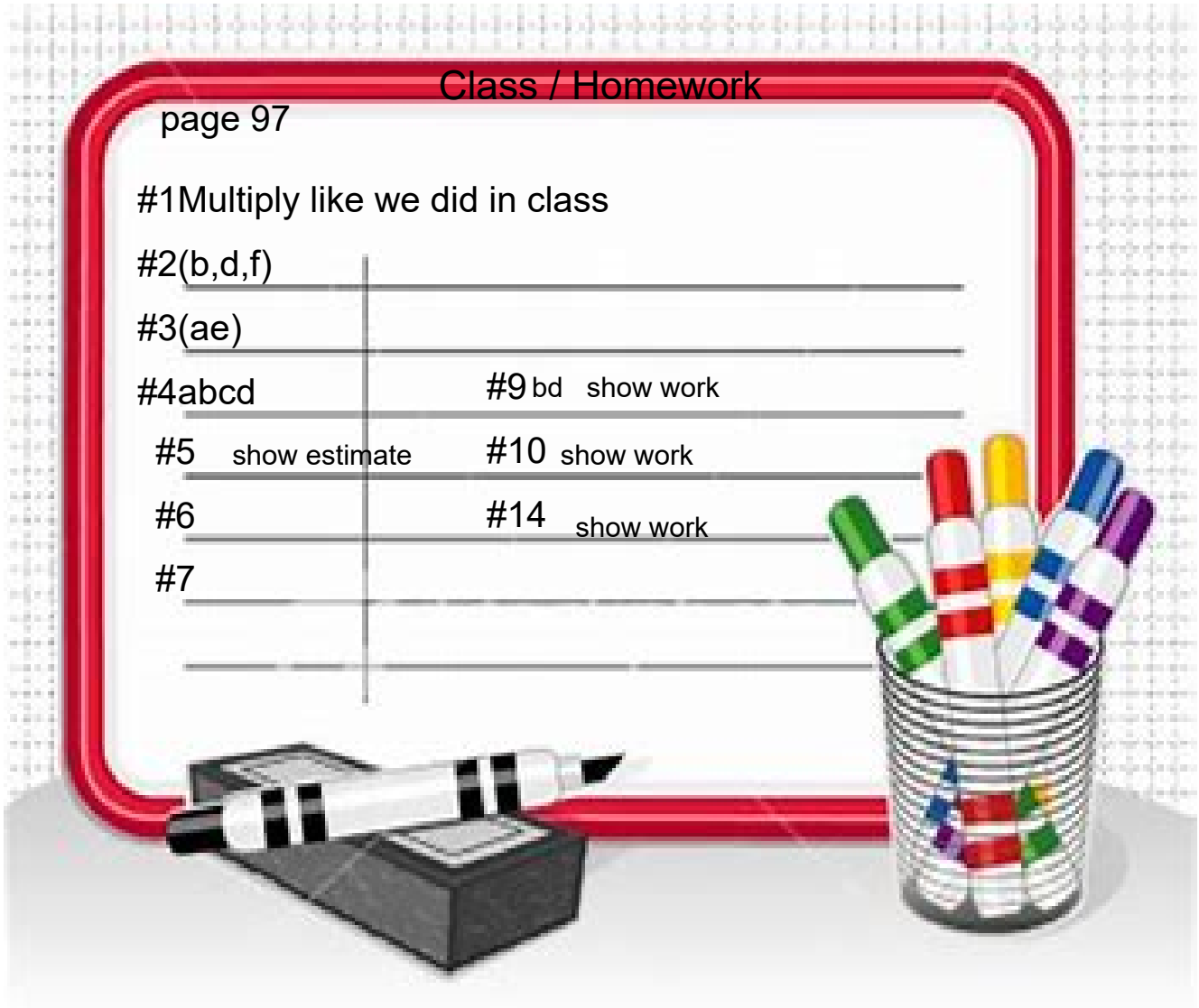
#6

#7

#9 bd show work

#10 show work

#14 show work



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Practice

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

1. ~~Use Base Ten Blocks to multiply.~~

a) $\begin{array}{r} 2.3 \\ \times\ 2 \\ \hline \end{array}$ b) $\begin{array}{r} 1.8 \\ \times\ 4 \\ \hline \end{array}$ c) $\begin{array}{r} 1.23 \\ \times\ 5 \\ \hline \end{array}$ d) $\begin{array}{r} 2.42 \\ \times\ 3 \\ \hline \end{array}$

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) $8.25 \times 4 = 330$

Example

2 a) 7.1 x 5 = 355

Step 1: 7 x 5 = 35 (estimation)

Step 2: 7.1 x 5 = 35.5 (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

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

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.
   a) Does Tianna have enough money? How do you know?
   b) 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)** $1.98 \times 3 = 0.594$

example

9 a) 4.01 x 5 = 200.5

Step 1: 4 x 5 = 20

Step 2: the decimal should be 20.05 not 200.5

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?

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?

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?