



Warm up Grade 6

Date: _____



1) Without multiplying, choose the correct product for each multiplication question. Explain your choice each time. Multiply to check

Question	Possible Products		
a) 7.2×8	57.6	576.0	5.76
b) 0.365×4	1.46	0.146	0.0146

$$\approx 7 \times 8 = 56$$

$$\approx \begin{array}{r} 0.3 \\ \times 4 \\ \hline 1.2 \end{array}$$

2) Find the product of each (Show work)

a) 307.568×2

$$\begin{array}{r} 307.568 \\ \times 2 \\ \hline 615.136 \end{array}$$

b) 0.0341×5

$$\begin{array}{r} 0.0341 \\ \times 5 \\ \hline 0.1705 \end{array}$$

3) Estimate 9.634×7

$$\approx 10 \times 7 = 70$$

Practice



1. Use Base Ten Blocks.
Multiply.

a) 0.6×4
d) 0.34×5

b) 0.12×3
e) 0.215×3

c) 0.21×2
f) 0.408×2

Homework Solutions

a) $\overset{.}{0.6}$ 6 tenths $\times 4$

$$\begin{array}{r} \overset{.}{0.6} \\ \times 4 \\ \hline 2.4 \end{array}$$
 is 24 tenths
 $6 \times 4 = 24$

or estimate

0.6 is close to 1 whole

$1 \times 4 = 4$ so product is close to 4

but over estimate.

b) 0.12

$$\begin{array}{r} 0.12 \\ \times 3 \\ \hline 0.36 \end{array}$$

estimate

0.12 is close to 1 tenth

1 tenth $\times 3 = 3$ tenths

so product is close to 0.3

but under estimate.

c) 0.21 estimate

$$\begin{array}{r} 0.21 \\ \times 2 \\ \hline 0.42 \end{array}$$
 0.21 is close to 2 tenths
 2 tenths $\times 2 = 4$ tenths
 so product is close to 0.4
 but under estimate.

d) $\overset{.}{0.34}$ estimate

$$\begin{array}{r} \overset{.}{0.34} \\ \times 5 \\ \hline 1.70 \end{array}$$
 0.34 is close to 3 tenths
 3 tenths $\times 5 = 15$ tenths
 so product is close to
 1.5 but under estimate.

e) $\overset{.}{0.215}$ estimate

$$\begin{array}{r} \overset{.}{0.215} \\ \times 3 \\ \hline 0.645 \end{array}$$
 0.215 is close to 2 tenths
 2 tenths $\times 3 = 6$ tenths
 so product is close to 0.6
 but under estimate.

e) $\overset{.}{0.408}$ estimate

$$\begin{array}{r} \overset{.}{0.408} \\ \times 8 \\ \hline 3.216 \end{array}$$
 0.408 is close to 4 tenths
 4 tenths $\times 8 = 32$ tenths
 so product is close to
 3.2 but under estimate.

2. Copy this place-value chart.
Multiply. Record each product in the chart.

	Ones	Tenths	Hundredths	Thousandths	Ten-Thousandths
a)	0	0	3	5	
b)	3	7	8		
c)	0	1	4	5	

a) 0.005×7
d) 0.0328×9

b) 0.42×9
e) 0.276×6

c) 0.029×5
f) 0.1036×8

a) 0.005

$$\begin{array}{r} 0.005 \\ \times 7 \\ \hline 0.035 \end{array}$$
 $5 \times 7 = 35$

b) 0.42 4 tenths $\times 9$ is 36 tenths

$$\begin{array}{r} 0.42 \\ \times 9 \\ \hline 3.78 \end{array}$$
 3.6

c) 0.029

$$\begin{array}{r} 0.029 \\ \times 5 \\ \hline 0.145 \end{array}$$

$$\begin{array}{r} 29 \\ \times 5 \\ \hline 145 \end{array}$$

d) 0.0328×9

$$\begin{array}{r} 0.0328 \\ \times 9 \\ \hline 0.3052 \end{array}$$

$$\begin{array}{r} 328 \\ \times 9 \\ \hline 3052 \end{array}$$
 3 hundredths $\times 9$ is 27 hundredths
 close to 0.27

3 hundredths $\times 5$ is 15 hundredths
 so close to = 0.15

e) 0.276×6

$$\begin{array}{r} 0.276 \\ \times 6 \\ \hline 1.956 \end{array}$$

$$\begin{array}{r} 276 \\ \times 6 \\ \hline 1956 \end{array}$$

close to 3 tenths $\times 6$ is 18 tenths

close to 1.8 tenths

f) 0.48×2

$$\begin{array}{r} 0.48 \\ \times 2 \\ \hline 0.96 \end{array}$$

$$\begin{array}{r} 48 \\ \times 2 \\ \hline 96 \end{array}$$

close to 5 tenths $\times 2$ is 10 tenths

close to 1.0 tenths

3. Multiply. Describe your strategies.

a) 0.9×3

0.09×3

0.009×3

b) 0.25×6

0.025×6

0.0025×6

c) 0.018×4

0.0018×4

0.00018×4

What patterns do you see?

Homework Solutions

a. $9 \times 3 = 27$ (est)

$0.9 \times 3 = 2.7$

$0.09 \times 3 = 0.27$

$0.009 \times 3 = 0.027$

b. $25 \times 6 = 20 \times 6 = 120$
 $5 \times 6 = 30$
 $\underline{150}$

$0.25 \times 6 = 1.50$

$0.025 \times 6 = 0.150$

$0.0025 \times 6 = 0.0150$

4. Shona cut a ribbon into 8 equal lengths to finish sewing her Fancy Shawl Regalia. Each piece was 0.158 m long.

a) How long was the ribbon before Shona cut it?

b) How many cuts did she make?

4a) $0.158 \text{ m} \times 8$
 $= 1.264 \text{ m}$

$$\begin{array}{r} 158 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 1264 \end{array}$$

0.158 close to 0.2 (2 tenths)

2 tenths $\times 8$ is 16 tenths (1.6)

b) 7 cuts gives 8 pieces



Woman Dancing an Aboriginal Fancy Dance

5.

Juice	Vitamin C per glass (g)
Pure Orange Juice	0.054
Pure Apple Juice	0.0009

a) Stefan drinks a glass of pure orange juice

How much Vitamin C does Stefan get from orange juice each week?

b) Stefan went to Sasamat Outdoor Centre's overnight camp for one week.

He drank a glass of pure apple juice each morning with his breakfast.

How much Vitamin C did Stefan get from apple juice that week?

a) 1 week has 7 days

vitamin C in 1 glass is 0.054 g

0.05 is close to 1 tenth 0.1

1 tenth $\times 7$ is 7 tenths

$0.1 \times 7 = 0.7$

over estimate

Stefan gets 0.378 g of vitamin C each week from orange juice

$$\begin{array}{r} 54 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 378 \end{array}$$

$$\begin{array}{r} 0.054 \times 7 \\ = 0.378 \end{array}$$

Apple juice

b) 1 week has 7 days

vitamin C in 1 glass is 0.0009 g

0.0009 is close to 1 thousandths (0.001)

1 thousandths $\times 7$ is 7 thousandths

$0.001 \times 7 = 0.007$

over estimate

Stefan gets 0.0063 g of vitamin C that week from apple juice

$$\begin{array}{r} 9 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 63 \end{array}$$

$$\begin{array}{r} 0.0009 \times 7 \\ = 0.0063 \end{array}$$



6. Without multiplying, choose the correct product for each multiplication question. Explain your choice each time. Multiply to check.

Homework Solutions

	Question	Possible Products		
a)	0.063×9	5.67	0.567 ✓	0.0567
b)	0.349×7	2.443 ✓	0.2443	0.024 43
c)	0.0078×5	0.39	0.039 ✓	0.0039

a) 0.06 is close to 0.1

$$0.1 \times 9 \text{ is } 0.9$$

b) 0.349 is close to

$$3 \text{ tenths} \times 7$$

$$= 21 \text{ tenths}$$

$$2.1$$

c) 0.0078

is close to 0.01
(1 hundredths)

1 hundredths \times
5 is 5
hundredths

close to 0.05



7. Multiply as you would whole numbers. Estimate to place the decimal point.

a) 0.359×5

b) 0.0112×9

c) 0.083×4

d) 0.89×6

e) 0.0063×7

f) 0.097×8

$$\begin{array}{r} \text{a. } 359 \times 5 = 300 \times 5 = 1500 \\ 50 \times 5 = 250 \\ 9 \times 5 = 45 \\ \hline 1795 \end{array}$$

$$0359 \times 5 = 1.795$$

$$\begin{array}{r} \text{b. } 0.0112 \times 9 = 100 \times 9 = 900 \\ 10 \times 9 = 90 \\ 2 \times 9 = 18 \\ \hline 1008 \end{array}$$

$$0.0112 \times 9 = 0.1008$$

c) 0.083×4

$$80 \times 4 = 320$$

$$3 \times 4 = 12$$

$$432$$

$$0.083 \times 4 = 0.432$$

d) 0.89×6

$$80 \times 6 = 480$$

$$9 \times 6 = +54$$

$$\begin{array}{r} 534 \\ \hline 0.89 \times 6 = 5.34 \end{array}$$

8. A student said that since $11 \times 5 = 55$, then 0.0011×5 is 0.55.

Is the student's reasoning correct?

Give reasons for your answer.

No since 11 ten-thousandths

so

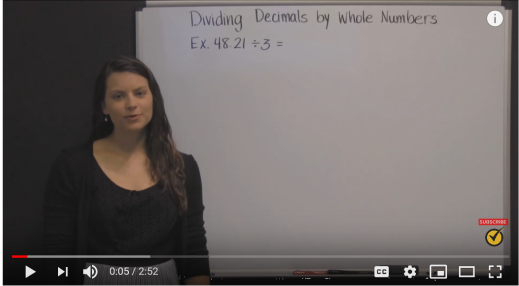
11 ten-thousandths \times 5

is 55 ten-thousandths

$$\underline{\quad} \cdot \underline{\quad} \underline{\quad} \underline{\quad} \underline{5} \underline{5}$$

Reflect

How can you use your knowledge of multiplication facts to help you multiply a decimal less than 1 by a 1-digit whole number?



Dividing Decimals by Whole Numbers

Ex. $48.21 \div 3 =$

0:05 / 2:52

Fullscreen

Dividing Decimals by Whole Numbers

Ch. 3 Lesson 5

Long Division

This is the
one I use



Dividing decimals by a whole number

27.76
Dividend

÷

8
Divisor

Very similar to long division.

- Divide the decimal number by considering it as a whole number by the given whole number.

$$8 \overline{) 27.76}$$

Always
estimate to see
if the quotient
is reasonable

- Mark the decimal point in the quotient such that it has the same number of decimal places as in the decimal number (dividend).

$$8 \overline{) 27.76}$$

Then divide normally

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Try this one

No remainders but decimal parts

$$9.467 \div 5$$

Can always add
zeros to the end of
decimals, and it does
not change the
number.

$$27.76 \div 8$$

$$\begin{array}{r} 3.47 \\ 8 \overline{) 27.76} \\ \underline{-24} \\ 37 \\ \underline{-32} \\ 56 \\ \underline{-56} \\ 0 \end{array}$$

You Try

Divide the following, with long division.



a)

$$49.504 \div 4$$

$$\begin{array}{r}
 12.376 \\
 4 \overline{) 49.504} \\
 \underline{-4} \\
 09 \\
 \underline{-8} \\
 15 \\
 \underline{-12} \\
 30 \\
 \underline{-28} \\
 24 \\
 \underline{-24} \\
 0
 \end{array}$$

b) $35.95 \div 2$

$$\begin{array}{r}
 17.975 \\
 2 \overline{) 35.950} \\
 \underline{-2} \\
 15 \\
 \underline{-14} \\
 19 \\
 \underline{-18} \\
 15 \\
 \underline{-14} \\
 10 \\
 \underline{-10} \\
 0
 \end{array}$$



Warm up Grade 6

Date: _____



1) A student divided 20.508 by 6 and got 0.3418

a) Without dividing, how do you know this is incorrect? $\approx 18 \div 6 = 3$

b) What do you think the student did wrong? Put decimal in wrong place

c) What is the correct answer? Show work.

3.418

$$\begin{array}{r}
 3.418 \\
 6 \overline{) 20.508} \\
 \underline{-18} \\
 25 \\
 \underline{-24} \\
 10 \\
 \underline{-6} \\
 48 \\
 \underline{-48} \\
 0
 \end{array}$$

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#1)

#2) Show estimation numbers

$$28 \div 4 \approx 28 \div 4 = 7$$

#3)

#4)

#8)

#5)

#9)

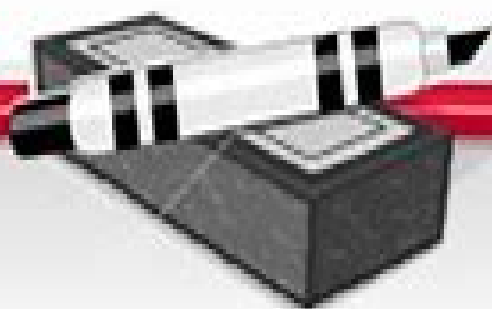
#6)

#10)

#7)

#12)

#13)



$$\begin{array}{r} 4 \overline{) 1.06} \\ \underline{4} \\ 0 \\ \underline{2} \\ \underline{4} \\ \underline{0} \\ \end{array}$$

Practice

WS 106

1. Use Base Ten Blocks to divide.

a) $6.25 \div 5$

b) $4.24 \div 4$

c) $1.68 \div 3$

d) $3.9 \div 6$

2. The decimal point is missing in each quotient.

Use estimation to place each decimal point.

★ $8.2 \div 2 = 41$

★ $3.81 \div 3 = 127$

c) $1.992 \div 8 = 249$

★ $9.45 \div 5 = 189$

e) $11.916 \div 9 = 1324$

★ $62.8 \div 8 = 785$

3. Estimate each quotient. Which strategies did you use?

a) $26.34 \div 8$

b) $15.27 \div 3$

c) $2.304 \div 4$

d) $5.8 \div 8$

e) $8.088 \div 6$

f) $2.316 \div 2$



4. Divide. Multiply to check your answers.



a) $27.025 \div 5$



b) $3.42 \div 6$



c) $7.735 \div 7$

d) $16.072 \div 8$



e) $30.9 \div 5$



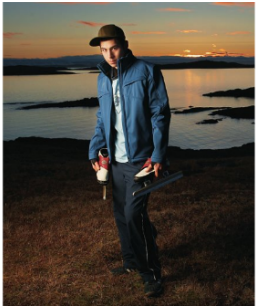
f) $3.438 \div 6$



5. Estimate to choose the correct quotient for each division question.

	Question	Possible Quotients		
a)	$8.124 \div 6$	1.354	13.54	135.4
b)	$37.92 \div 3$	0.1264	1.264	12.64
c)	$7.624 \div 8$	0.953	9.53	95.3

6. Aqpiq Peter is a young Inuit speed skater from Nunavut. He is one of 3 First Nations athletes being showcased for the 2010 Vancouver Olympics. At practice, Aqpiq skated 2.75 km in 5 min. About how far did Aqpiq skate in 1 min?





7. Eric cycled 2.25 km in 5 min.
Josie cycled 2.72 km in 8 min.
Who travelled farther in 1 min?
Show your work.



8. Sharma paid \$58.50 to board her cat at a kennel in Yellowknife for 5 days.
Her friend Miles paid \$12.50 each day to board his cat at a different kennel for 5 days.
Who paid the lesser amount?
Explain how you know.



9. The decimal point in some of these quotients is in the wrong place. Identify the mistakes, then write each quotient with the decimal point in the correct place.
- | | |
|-------------------------|----------------------------|
| a) $44.8 \div 8 = 0.56$ | b) $14.805 \div 5 = 2.961$ |
| c) $3.15 \div 6 = 5.25$ | d) $8.127 \div 1 = 0.8127$ |



10. A student divided 1.374 by 4 and got 3.435.
- Without dividing, how do you know the answer is incorrect?
 - What do you think the student did wrong?
 - What is the correct answer? How can you check?

11. Write a story problem that can be solved by dividing 14.28 by 3.
Trade problems with a classmate and solve your classmate's problem.

13. In good weather, Hannah rides her bike to school and back each day.
One week, Hannah rode her bike on 4 days.
That week, Hannah rode 10.832 km in total.
The following week, she rode her bike all 5 days.
How far did Hannah ride the second week?

