The Wilkie Way
Practice Workbook 9

Decimal Operations

Name_____

Class _____

Extra practice to support:

Maths Aotearoa Book 4b
Unit 2

Chapter 6

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Fraction or Decimal?

Write the decimal for each of these common fractions.

$\dfrac{1}{8}$ = $\dfrac{1}{4}$ = $\dfrac{3}{8}$ = $\dfrac{3}{4}$ =

$\dfrac{1}{20}$ = $\dfrac{1}{5}$ = $\dfrac{1}{3}$ = $\dfrac{2}{3}$ =

You can choose whether to use the fraction or the equivalent decimal when performing an operation. ½ of 42 = ½ × 42 = 0.5 × 42

Solve the following multiplications showing your thinking

Remember:

'of' means multiply

0.5 x 84 = _____

0.25 x 196 = _____

0.1 x 548 = _____

0.75 x 96 = _____

165 x 0.2 = _____

0.05 x 180 = _____

0.125 x 136 = _____

0.33 x 78 = _____

112 x 0.375 = _____

108 x 0.66 = _____

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Multiplying decimals

Using equal grouping, colour the decimats to represent the given multiplication
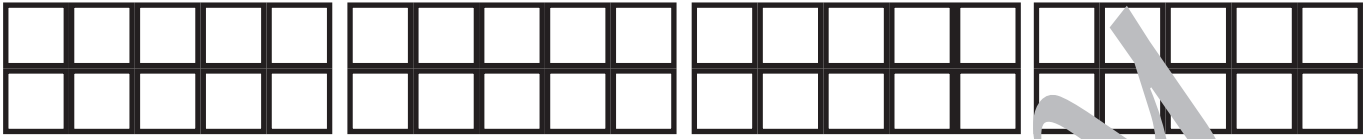
Show 0.6 x 4

How many tenths have been coloured altogether? _____

0.6 x 4 = _____

Using number knowledge of decimals   0.6 = 6 ÷ 10

6 ÷ 10 x 4   =   6 x 4 ÷ 10 = _____

Show 0.4 x 3

How many tenths have been coloured altogether? _____

0.4 x 3 = _____

Using number knowledge of decimals   0.4 = 4 ÷ 10

4 ÷ 10 x 3   =   4 x 3 ÷ 10 = _____

Using number knowledge of decimals

0.7 x 3 = 7 ÷ 10 x 3 = 7 x 3 ÷ 10 = _____

0.6 x 9 = _____

8 x 0.4 = _____

Multiplying decimals by decimals

Using an array model to show each multiplication.

0.5

0.3
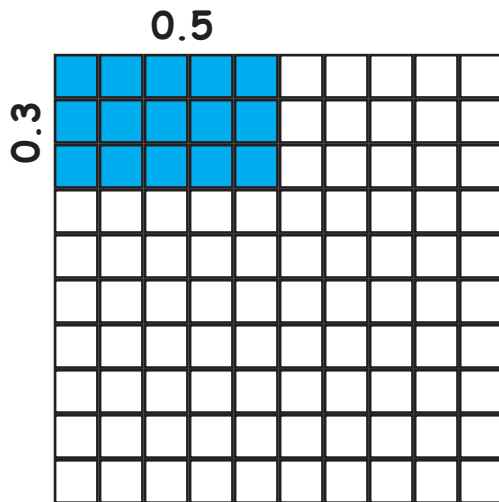
5 tenths x 3 tenths = 15 hundredths
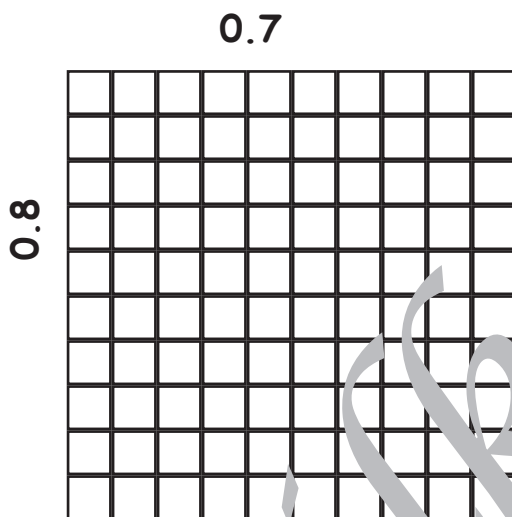
0.5 x 0.3 = _____

Using place value knowledge and change the order

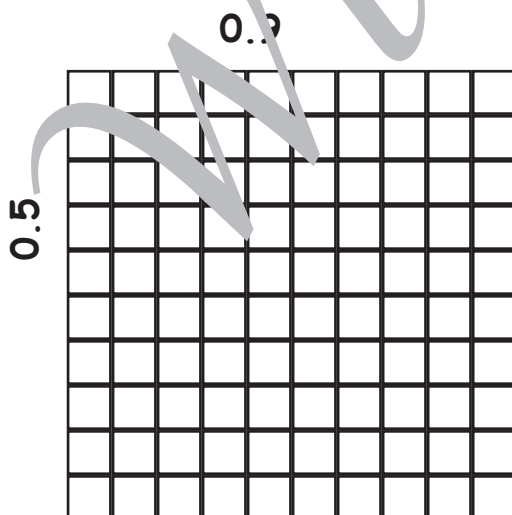5 ÷ 10 x 3 ÷ 10 = 5 x 3 ÷ 10 ÷ 10 = _____

Colour the array to show 0.7 x 0.8

0.7

0.8

_____ tenths x _____ tenths = _____ hundredths

0.7 x 0.8 = _____

Using place value knowledge and change the order

__ ÷ 10 x 8 ÷ 10 = _____

Colour the array to show 0.9 x 0.5

0.9

0.5

_____ tenths x _____ tenths = _____ hundredths

0.9 x 0.5 = _____

Using place value knowledge and change the order

_____

Using the number system

Key knowledge to use:

- The base ten number system: remembering every time you divide a number by 10 the digits move one place to the right.

- Multiplication and division are inverse operations and can be carried out in any order.

Calculate the following products

$0.4 \times 0.8 = 4 \div 10 \times 8 \div 10 = 4 \times 8 \div 10 \div 10 = $ _____

$0.06 \times 0.8 = 6 \div 10 \div 10 \times 8 \div 10 = $ _____

$0.03 \times 0.02 = $ _____

Can you see a relationship between the number of places after the decimal point and the number of times you divide by 10?

Clue: Try counting!

Explain what you notice _____

_____

Use this knowledge to calculate these products:

$0.6 \times 0.7 = $ _____

Watch out for hidden zeros

$0.03 \times 0.08 = $ _____ $0.5 \times 0.6 = $ _____

$0.02 \times 0.9 = $ _____ 0.02×0.05 _____

$0.003 \times 0.4 = $ _____ 0.5×0.008 _____

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Decimals Family of Facts

Thinking to make sense

0.6 ÷ 3   If I shared 0.6 between 3 there would be 0.2 each

0.8 ÷ 0.2   How many times does 0.2 fit into 0.8

4 x 0.2 = 0.8   0.2 x 4 = 0.8
0.8 ÷ 0.2 = 4   0.8 ÷ 4 = 0.2

Complete the family of facts, use the decimats to help you.

3 x 0.3 = _____   _____

_____   _____

0.8 ÷ 4 = _____   _____

_____   _____

6 x 0.3 = _____   _____

_____   _____

1.5 ÷ 0.3 = _____   _____

_____   _____
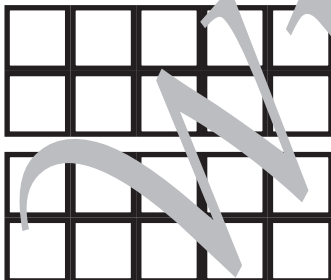
Using the number system again!

Dividing by a whole number is so much easier than dividing by a decimal!

Make a proportional adjustment - doing the same to both numbers to make the divisor into a whole number.

$37.5 \div 0.3 = 375 \div 3$ (multiply both numbers by 10)

$37.5 \div 0.03 = 3750 \div 3$ (multiply both numbers by 100)

Re- write each division question make a proportional adjustment so the divisor is a whole number. Then calculate the answer.

$29.6 \div 0.4 = $ _____

$58.8 \div 0.6 = $ _____

$1.85 \div 0.05 = $ _____

$0.72 \div 0.03 = $ _____

$67.2 \div 0.8 = $ _____

$57.75 \div 0.7 = $ _____

$0.0492 \div 0.002 = $ _____

$2.492 \div 0.4 = $ _____

$37.04 \div 0.8 = $ _____

$2.142 \div 0.09 = $ _____

If a marathon is 42km long and a team of runners were going to run just 1.75km of the race each., how many people are in the team?

A cup holds 0.15L. How many cups can be filled from a 4.5L container of water?

The depth of a dollar coin is about 0.002m.
How many centimetres tall would a stack of 25 coins be?

A quiz team of 4 people won $254.40. If they shared the prize equally how much money would they have each?

A picture takes 0.75m of wood to make the picture frame. How many of the same size picture could you frame with a 2.4m length of wood and how much wood would you have left over?