

WA6MNACN4

Calculating with number

Core + Challenge

Multiplying Decimals by Whole Numbers

I can multiply decimals by whole numbers using grids, number lines and area models.

Name: _____ Date: _____ Score: _____ / 56

Key idea

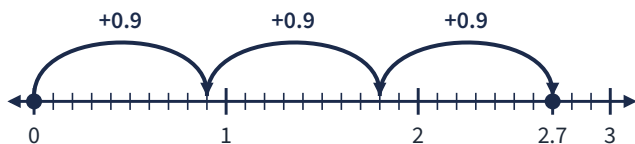
Multiplying by a whole number is **repeated addition**: $3 \times 0.9 = 0.9 + 0.9 + 0.9 = 2.7$.

Think in **tenths** or **hundredths**: 3×9 tenths = 27 tenths = 2.7. 5×6 hundredths = 30 hundredths = 0.3.

Split the decimal (area model): $6 \times 2.35 = 6 \times 2 + 6 \times 0.3 + 6 \times 0.05 = 12 + 1.8 + 0.3 = 14.1$.

Estimate first to check: 6×2.35 is a bit more than $6 \times 2 = 12$, so 14.1 makes sense.

3×0.9 on a number line



Area model: 6×2.35

	2	0.3	0.05
6	12	1.8	0.3

Total: **14.1**

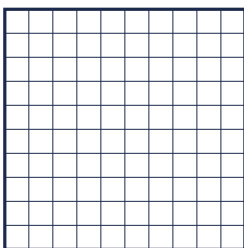
A

Warm up *shade groups and make equal jumps*

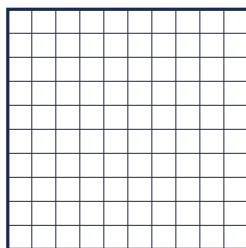
/ 16 marks

Shade the groups on the grid. Write the answer. 1 mark each.

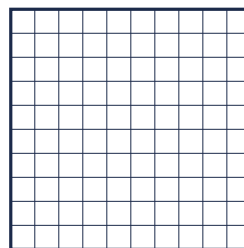
1 $3 \times 0.2 =$



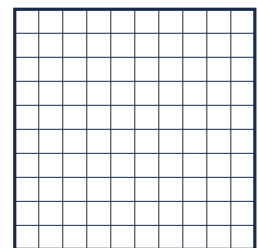
2 $4 \times 0.12 =$



3 $5 \times 0.09 =$



4 $2 \times 0.35 =$



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Start at 0. Draw equal jumps on the number line. Write the answer. 1 mark each.

5 $4 \times 0.3 =$



6 $3 \times 0.25 =$



7 $5 \times 0.4 =$



8 $6 \times 0.15 =$



Work these out. Think in tenths or hundredths. 1 mark each.

9 $7 \times 0.3 =$

10 $8 \times 0.06 =$

11 $9 \times 0.5 =$

12 $4 \times 1.2 =$

13 $6 \times 0.07 =$

14 $3 \times 2.5 =$

15 $5 \times 0.08 =$

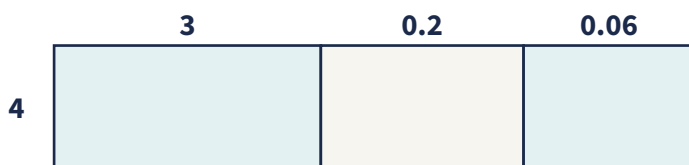
16 $12 \times 0.2 =$

B Practise *use the skill*

/ 21 marks

1 Complete the area model to work out 4×3.26 .

[3 marks]



Total: _____

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- 2 At the school canteen a muffin costs **\$2.45**. How much do **6** muffins cost? [2 marks]
Estimate first, then work it out.

Answer: _____

- 3 Kira cuts **4** pieces of ribbon. Each piece is **0.75 m** long. Draw the pieces as jumps on the number line. What is the total length? [2 marks]



Answer: _____

- 4 Bananas cost **\$3.95** per kilogram at Woolies. Complete the price table. [3 marks]

Mass (kg)	1	2	3	5	10
Price	\$3.95				

- 5 The first chart shows **3×0.14** as counters: 3 tenths and 12 hundredths. Swap 10 hundredths for 1 tenth. Draw the counters in the second chart. Write the answer. [2 marks]

 3×0.14

Ones	Tenths	Hundredths
	○ ○ ○	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

After swapping

Ones	Tenths	Hundredths

Answer: _____

- 6 A bottle holds **1.25 L** of water. How much water is in **7** bottles? Estimate first. [2 marks]
Then check your answer against your estimate.

Answer: _____

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7 Draw a line from each calculation to its answer.

[2 marks]

3×0.4

0.24

4×0.03

1.2

8×0.3

0.12

6×0.04

2.4

8 a) A square photo frame has sides of **0.35 m**. What is its perimeter? b) A garden bed is a regular hexagon with sides of **1.25 m**. What is its perimeter?

[2 marks]

a) _____

b) _____

9 At the **school fete**, the sausage sizzle sold **36** sausages at **\$2.50** each and **24** drinks at **\$1.75** each. How much money did the stall take altogether?

[3 marks]

Answer: _____

C

Think it through *explain your thinking*

/ 10 marks

- 1 Noah says $4 \times 0.2 = 0.08$. Do you agree with Noah? Explain using tenths. [2 marks]

- 2 **Always, sometimes or never true?** “When you multiply a decimal by a whole number, the answer is a whole number.” Give examples. Circle one below. [2 marks]

☐ Always☐ Sometimes☐ Never

- 3 Ella says, “Multiplying always makes a number bigger, so 6×0.4 must be more than 6.” Do you agree with Ella? Explain. [2 marks]

- 4 Which is the **odd one out**? 4×0.6 , 8×0.3 , 3×0.8 , 6×0.3 Explain. [2 marks]

- 5 Work out 7×0.4 and 7×0.04 . What is the **same** and what is **different** about the two calculations? [2 marks]

D**Challenge** *stretch yourself*

/ 9 marks

- 1** Choose a whole number from **2 to 9** and a decimal between 0 and 1 with **one** decimal place (like 0.7). Find **all** the ways to make **1.2** by multiplying them. How do you know you have them all? [3 marks]

Answer: _____

- 2** Grace buys **4** drink bottles at **\$8.40** each and a lunchbox. She pays with a **\$50** note and gets **\$12.80** change. How much does the lunchbox cost? [3 marks]

Answer: _____

- 3** A single bus ticket costs **\$4.90**. A day pass costs **\$27.50**. **a)** Mia makes 6 trips in one day. Is the day pass cheaper? By how much? **b)** What is the **smallest** number of trips in a day that makes the day pass cheaper? Explain. [3 marks]

Answer: _____

How did I go?Warm up ____ / 16 Practise ____ / 21 Think it through ____ / 10 Challenge ____ / 9 **Total ____ / 56**Want help with Year 6 maths? Our tutors make it click. **Book a free trial class at [edulift.com.au](https://www.edulift.com.au)**