

# Multiply and divide decimals in context

## Notes and guidance

This small step takes the skills explored in the previous two steps and applies them in a variety of contexts and problems.

Children recap the formal written methods for both multiplication and division alongside place value counters. They can use the same method with coins, with £1 coins replacing the ones, 10p coins replacing the tenths and 1p coins replacing the hundredths. Children then use these skills in a variety of contexts to solve problems.

Encourage children to use bar models to help them to identify what operation is needed and in what order steps should be taken.

It may be useful to recap conversions of units of measure from earlier in the year before beginning this step.

## Things to look out for

- Children may be unsure which operation is needed to solve a problem.
- When solving questions in context, children may forget the units of measure.
- If a unit conversion is needed, for example kilograms to grams, children may multiply or divide by the incorrect amount.

## Key questions

- How can you tell what operation you need to perform to answer this question?
- How can you represent this question using place value counters?
- What do you need to work out?
- How can you draw a bar model to represent this problem?
- Do you need to convert any units of measure to answer this question?

## Possible sentence stems

- \_\_\_\_\_ multiplied by \_\_\_\_\_ is \_\_\_\_\_
- \_\_\_\_\_ divided by \_\_\_\_\_ is \_\_\_\_\_

## National Curriculum links

- Multiply 1-digit numbers with up to 2 decimal places by whole numbers
- Use written division methods in cases where the answer has up to 2 decimal places
- Solve problems involving addition, subtraction, multiplication and division

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## Key learning

- The table shows the prices of items in a shop.

Item	Cost
Magazine	£2.24
Book	£5.25
CD	£3.49
DVD	£4.75

Esther wants to buy three magazines.

She uses coins in a place value chart alongside the formal written method to work out the total cost.

O	Tth	Hth
6	7	2

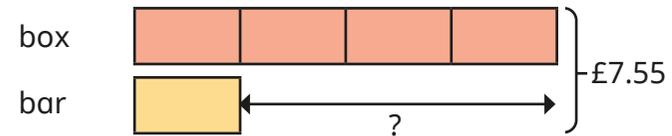
	2	2	4	
	×		3	
		6	7	2
		1		

Use Esther's method to work out the costs of these items.

4 books	3 CDs	5 DVDs and 6 books
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- A box of chocolates costs 4 times as much as a chocolate bar.

Together they cost £7.55



How much more does the box of chocolates cost than the chocolate bar?

- Modelling clay is sold in two different shops.
  - Shop A sells 4 pots of clay for £7.68
  - Shop B sells 3 pots of clay for £5.79

Which shop has the better deal?

Explain your answer.

- Huan has 9.6 litres of juice. He fills 8 identical jugs with the juice. How many millilitres of juice does each jug hold?
- A square has a perimeter of 0.824 m. How long is each side?

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## Reasoning and problem solving

1.28 kg of sand is shared equally between 4 buckets.

There is 5.12 kg of sand in each bucket because  $1.28 \times 4 = 5.12$



Explain the mistake that Tiny has made.

What is the mass of sand in each bucket?

0.32 kg

Annie has some money.

- She gives  $\frac{2}{3}$  of her money to charity.
- She then buys three footballs costing £6.45 each.
- Her mum gives her and her two sisters £9.75 to share equally between them.



Now I have got £10.50

How much money did Annie have to start with?

£79.80