

Unit costs

Year 8 About 75 minutes Calculator allowed 48 marks



Hints online, answers free with an account:
mathswariz.uk/worksheets/ks3-year-8-unit-costs/

Date _____

A Do Now

Quick questions to start.

- A1** Needed today [1 mark] **A2** Needed today [1 mark]
 6 apples cost £2.40. Work out the cost of one apple. How many grams are there in 1.25 kg?

Answer

Answer

- A3** Last lesson [1 mark] **A4** Year 7 [1 mark]
 A block has a mass of 96 g and a volume of 40 cm³. Work out its density. Increase £40 by 15%.

Answer

Answer

B Example, then your turn

Year 8

A unit price is the cost of one unit, such as 1 g, 100 g or 1 litre. The lower the unit price, the better the value. Your teacher works through each example with you. Then try the one beside it.

EXAMPLE 1

A 400 g bag of rice costs £1.20. Work out the cost of 100 g.

Hint 400 g is 4 lots of 100 g.

- B1** A 750 g box of cereal costs £ 2.85. Work out the cost of 100 g. [2 marks]

Answer ... p

EXAMPLE 2

A 500 g bag of flour costs 80p. How many grams do you get for £1?

Hint Work out the grams for 1p first. £1 is 100p.

- B2** A 300 g jar of honey costs £ 1.20. How many grams do you get for £1? [2 marks]

Answer ... g

EXAMPLE 3

Rice is sold in a 250 g bag for £1.10 and in a 400 g bag for £1.68. Which bag is better value?

Hint Work out the cost of 1 g for each bag, in pence.

EXAMPLE 4

Potatoes cost £3.15 for a 1.5 kg bag or 88p for a 400 g bag. Which bag is better value?

Hint Change 1.5 kg into grams first, so both sizes are in the same unit.

EXAMPLE 5

200 g of cheese costs £2.40. At the same price per gram, how much does 350 g cost?

Hint Work out the cost of 50 g, a size that goes into both 200 g and 350 g.

B3 Shampoo is sold in a 300 ml bottle for £2.70 and in a 450 ml bottle for £3.96. Which bottle is better value? Show how you decide. [3 marks]

B4 Orange juice costs £1.44 for a 1.2 litre carton or 42p for a 330 ml carton. Which carton is better value? Show how you decide. [3 marks]

B5 A 150 ml tube of sun cream costs £2.10. At the same price per ml, how much does a 225 ml tube cost? [2 marks]

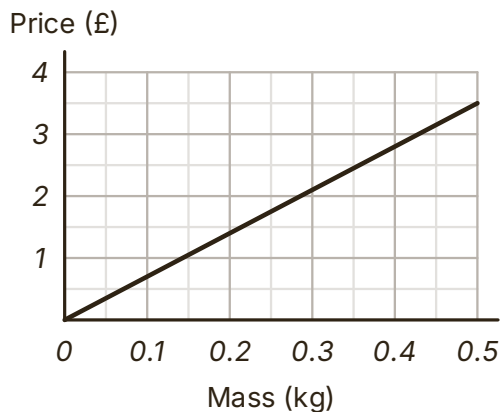
Answer £ ...

C1 One can of lemonade costs 75p. [2 marks]
A pack of 6 of the same cans costs £3.99. Which is better value? Give a reason.

C2 Three people buy potatoes from different shops. The table shows what each paid. Who got the best value? Show how you decide. [3 marks]

Name	Mass	Price
Amir	2 kg	£1.70
Bea	2.5 kg	£2.05
Cal	1.5 kg	£1.29

C3 The graph shows the price of grapes. Use the graph to find the cost of grapes in pence per 100 g, and in £ per kg. [3 marks]



C4 Coffee is sold in two sizes. The table shows the mass and the price of each. Which size is better value? Show how you decide. [3 marks]

Size	Mass	Price
Small	180 g	£1.26
Large	0.45 kg	£3.06

- C5** Tea bags cost £2.40 for a box of 80, or £6.60 for a box of 240. Jen needs 240 tea bags. How much does she save by buying one box of 240 instead of boxes of 80? [2 marks]

Answer ... p

D Exam-style questions

GCSE Foundation

- D1** A 750 ml bottle of oil costs £1.80. A 2 litre bottle of the same oil costs £5.00. Sam says: "The bigger bottle is always better value." [3 marks]

Show that Sam is wrong for these two bottles.

- D2** A 500 g pack of mince costs £4.40. In a special offer, two of these packs cost £7.60.

- (a) Work out the reduction in the cost of 100 g of mince when you buy the special offer. [3 marks]

Answer ... p

- (b) Write this reduction as a percentage of the usual cost of 100 g. Give your answer to 1 decimal place. [2 marks]

Answer ... %

Total for D2: 5 marks

- D3** A shop sells nuts in a 250 g bag for £1.75 and in a 600 g bag for £3.90. The shop [4 marks]
wants to sell a new 1 kg bag that is better value than both of these bags. The price
is a whole number of pence. What is the most the shop can charge for the 1 kg
bag?

Answer £ ...

- D4** A pack of 6 pots of yogurt costs £2.70. Each pot holds 125 g. A large pot of the [4 marks]
same yogurt costs £1.98. The large pot is better value than the pack. What can you
say about the mass of the large pot?

Answer

E Extension

Stretch

No route is given. The hints are at the end of the sheet. Use one at a time.

- E1** A can of juice usually costs 60p. Shop A has the offer "buy 3, get 1 free". Shop B [3 marks]
has 20% off every can. Ali needs 12 cans. Which shop is cheaper for him, and by
how much?

Answer

Extension hints

Cover these with paper. Uncover one at a time.

- E1** **Hint 1** At shop A, how many of the 12 cans does Ali pay for?
Hint 2 At shop A he pays for 9 cans. At shop B each can costs
80% of 60p.
Hint 3 Shop A: $9 \times 60\text{p}$. Shop B: $12 \times 48\text{p}$.

How did it go?

Colour one circle on each line: not yet, nearly, yes.

- I can work out a unit price, such as [not yet] [nearly] [yes]
the cost of 100 g.
- I can work out how much I get for £1. [not yet] [nearly] [yes]
- I can compare sizes to find the [not yet] [nearly] [yes]
better value, changing units first.
- I can use a unit price to solve a [not yet] [nearly] [yes]
problem about value.