DIVIDE DECIMALS BY INTEGERS

BUILDING BLOCKS

NAME _____ CLASS _____ DATE _____

KEY IDEA

0.8 ÷ 2: share 8 tenths into 2 equal groups.

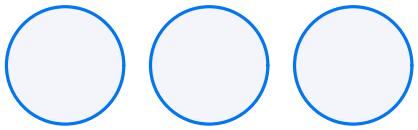
Each group gets 4 tenths.

0.8 ÷ 2 = 0.4



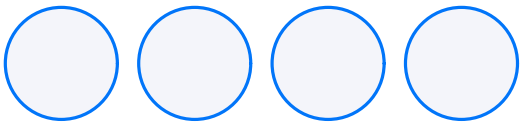
1 Share the counters equally. Draw them on the plates. Complete the division.

a) 0.1 0.1 0.1 0.1 0.1 0.1



0.6 ÷ 3 = ☐

b) 1 0.1 0.1 Exchange the 1 for 10 tenths first.



1.2 ÷ 4 = ☐

2 Use the division fact to help you. The answer is 10 times smaller.

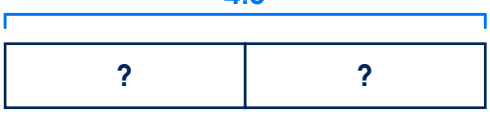
a) 15 ÷ 3 = 5 → so 1.5 ÷ 3 = ☐

b) 28 ÷ 4 = 7 → so 2.8 ÷ 4 = ☐

c) 36 ÷ 6 = 6 → so 3.6 ÷ 6 = ☐

3 Each bar is split into equal parts. Find the value of each part.

a)



4.8 ÷ 2 = ☐

b)



6.3 ÷ 3 = ☐

4 Money problems.

a) Share £2.40 equally between 2 friends. How much does each get? ☐

b) Share £5.60 equally between 4 friends. How much does each get? ☐

DIVIDE DECIMALS BY INTEGERS

SUPPORT

NAME _____ CLASS _____ DATE _____

KEY IDEA

Use short division. Put the decimal point in the answer directly above the decimal point below.

9 ones ÷ 4 = 2 r 1. Exchange 1 one for 10 tenths.
16 tenths ÷ 4 = 4 tenths.

9.6 ÷ 4 = 2.4

$$\begin{array}{r} 2.4 \\ 4\overline{)9.^{1}6} \end{array}$$

1 Use short division.

a) $2\overline{)8.4}$ b) $3\overline{)7.5}$ c) $4\overline{)9.12}$

2 Use short division. Zeros have been added so you can keep dividing.

a) $5\overline{)3.60}$ b) $8\overline{)4.200}$ c) $4\overline{)2.04}$

3 Sam says, "6.3 ÷ 3 = 21"

a) Explain Sam's mistake.

b) What is 6.3 ÷ 3?

4 Solve these problems.

a) 12.5 kg of sand is shared equally into 5 bags. How much is in each bag?

b) A 7.2 m rope is cut into 6 equal pieces. How long is each piece?

DIVIDE DECIMALS BY INTEGERS

CORE

NAME _____ CLASS _____ DATE _____

KEY IDEA

Divide a decimal by an integer with short division, keeping the decimal points in line and adding zeros when needed. If 56 ÷ 4 = 14, then 5.6 ÷ 4 = 1.4 because the number being divided is 10 times smaller. Check by multiplying: 1.4 × 4 = 5.6.

FLUENCY

1 Work out each division.

If an answer recurs, show it with dot notation.

a) **25.6 ÷ 8** ☐

b) **4.05 ÷ 5** ☐

c) **17.1 ÷ 6** ☐

d) **5.3 ÷ 3** ☐

e) **45.6 ÷ 12** ☐

f) **0.84 ÷ 7** ☐

2 Four parcels weigh 2.4 kg, 3.15 kg, 1.9 kg and 4.05 kg.

Find the mean weight of the parcels. ☐ **kg**

REASONING

3 Use multiplication to check each answer. Circle correct or incorrect and show your check.

a) **Mia says 7.44 ÷ 6 = 1.24** CORRECT INCORRECT

b) **Sam says 9.1 ÷ 7 = 1.03** CORRECT INCORRECT

4 96 ÷ 4 = 24. Explain how to use this fact to find 9.6 ÷ 4 and 0.96 ÷ 4.

DIVIDE DECIMALS BY INTEGERS

GREATER DEPTH

NAME _____ CLASS _____ DATE _____

REASONING

1 Is each statement always, sometimes or never true? Circle your answer.

Divide positive numbers. Give an example to support each answer.

a) Decimal ÷ whole number gives a smaller answer. ALWAYS SOMETIMES NEVER

b) A 1 d.p. number ÷ 2 has at most 2 d.p. ALWAYS SOMETIMES NEVER

c) Dividing by 4 is the same as halving twice. ALWAYS SOMETIMES NEVER

PROBLEM SOLVING

2 A shop sells cans of drink in two pack sizes.

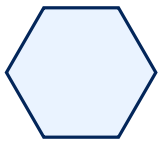
Pack of 6	Pack of 4
£3.42	£2.36

a) Cost of one can: pack of 6 ____ pack of 4 ____

b) Which pack is better value? ____

3 Find each side length.

a)



Regular hexagon

Perimeter 20.7 cm

Side = ____

b)



Square

Perimeter 13 cm

Side = ____

★ CHALLENGE FOR ALL

4 Think backwards.

a) A number is divided by 8, then 2.35 is added. The answer is 4. The number is ____

b) Write a decimal that recurs when divided by 3, and one that terminates.

DIVIDE DECIMALS BY INTEGERS

ANSWERS

BUILDING BLOCKS

1 a) 0.2 · b) 0.3
2 a) 0.5 · b) 0.7 · c) 0.6
3 a) 2.4 · b) 2.1
4 a) £1.20 · b) £1.40

SUPPORT

1 a) 4.2 · b) 2.5 · c) 2.28
2 a) 0.72 · b) 0.525 · c) 0.51
3 a) He forgot the decimal point: 6 ones ÷ 3 = 2 ones and 3 tenths ÷ 3 = 1 tenth. b) 2.1
4 a) 2.5 kg · b) 1.2 m

CORE

1 a) 3.2 · b) 0.81 · c) 2.85 · d) 1.7666... (1.76 recurring) · e) 3.8 · f) 0.12
2 Total 11.5 kg; mean 11.5 ÷ 4 = 2.875 kg
3 a) Correct: 1.24 × 6 = 7.44 · b) Incorrect: 1.03 × 7 = 7.21; 9.1 ÷ 7 = 1.3
4 9.6 is 10 times smaller than 96, so the answer is 10 times smaller: 2.4. 0.96 is 100 times smaller: 0.24

GREATER DEPTH

1 a) Sometimes (true when dividing by 2 or more; 3.5 ÷ 1 = 3.5) · b) Always (tenths ÷ 2 give at most hundredths, e.g. 0.1 ÷ 2 = 0.05) · c) Always
2 a) 57p and 59p · b) The pack of 6
3 a) 3.45 cm · b) 3.25 cm
4 a) (4 – 2.35) × 8 = 13.2 · b) e.g. 1.6 ÷ 3 = 0.5333... recurs; 1.5 ÷ 3 = 0.5 terminates