

Day 3 Maths - Starter

Year 6 | Week 1 | Day 4



1) What is 3.6×10 ?

2) Multiply 13.95 by 10

3) Work out $1\frac{3}{5} + 2\frac{7}{10}$

4) Calculate the sum of 17.4 and 20.3

Day 3 Maths - Starter Answers

Week 1 | Day 4

1) What is 3.6×10 ? **36**

2) Multiply 13.95 by 10 **139.5**

3) Work out $1\frac{3}{5} + 2\frac{7}{10}$ **$4\frac{3}{10}$**

4) Calculate the sum of 17.4 and 20.3 **37.7**



Day 3 Maths - Dividing by 10, 100 & 1,000

Day 3 Video Link [Spr6.1.5 - Divide by 10 100 and 1000 on Vimeo](#)

Day 3 Video Support [Multiply and divide by 10, 100 and 1000 - Year 6 - P7 - Maths - Catch Up Lessons - Home Learning with BBC Bitesize - BBC Bitesize](#)

Multiplying and Dividing by 10, 100 and 1000

10 000	1000	100	10	1	●	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					●			

Multiplying

X 10
X 100
X 1000

digits move LEFT 1 space
digits move LEFT 2 spaces
digits move LEFT 3 spaces



Dividing

÷ 10
÷ 100
÷ 1000

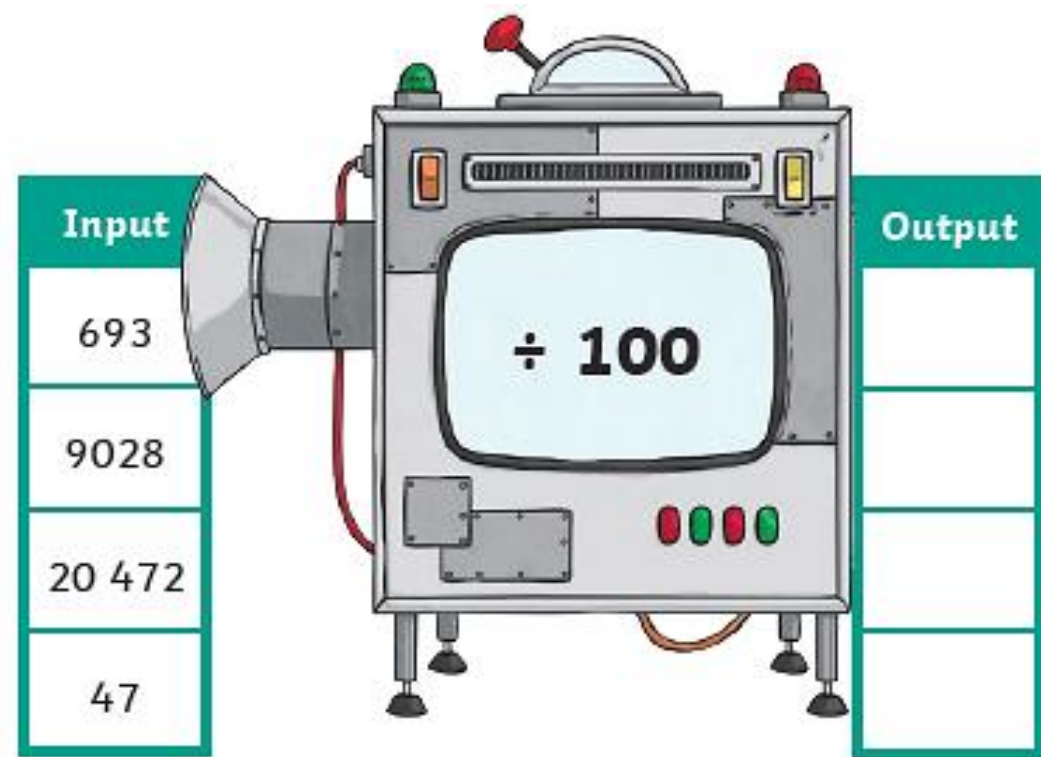
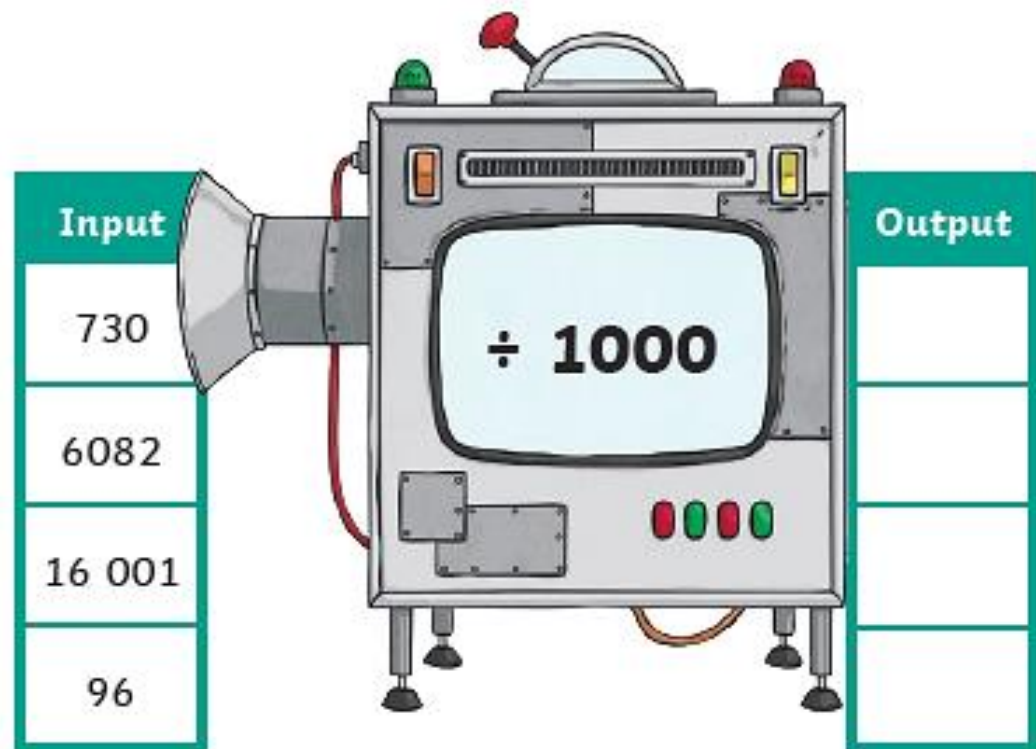
digits move RIGHT 1 space
digits move RIGHT 2 spaces
digits move RIGHT 3 spaces



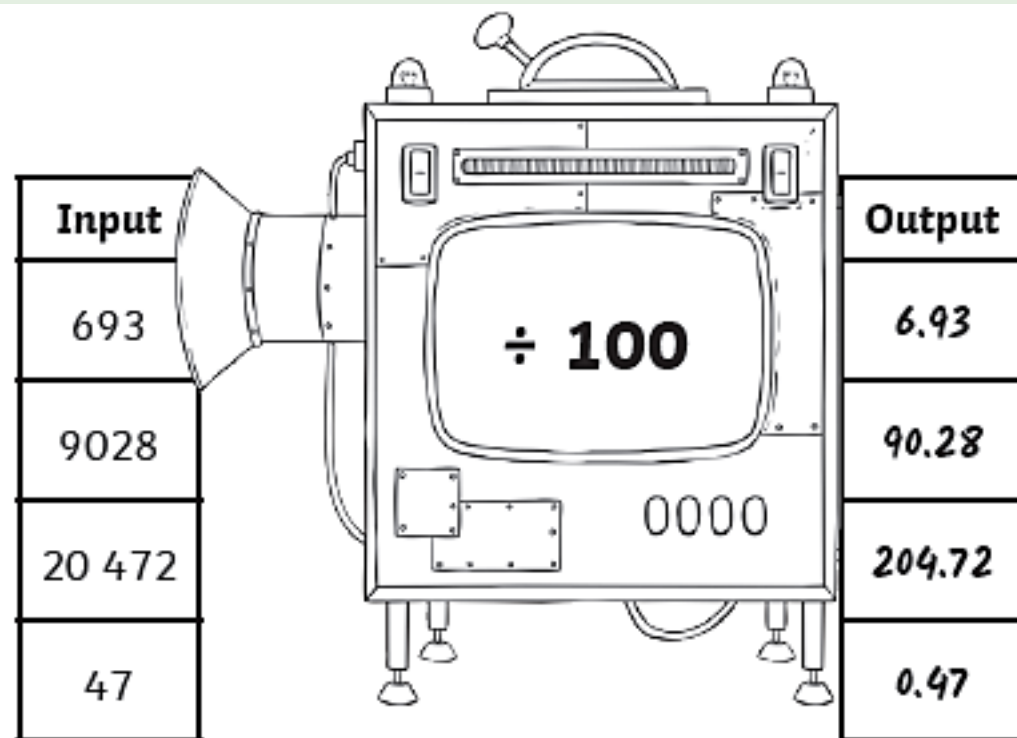
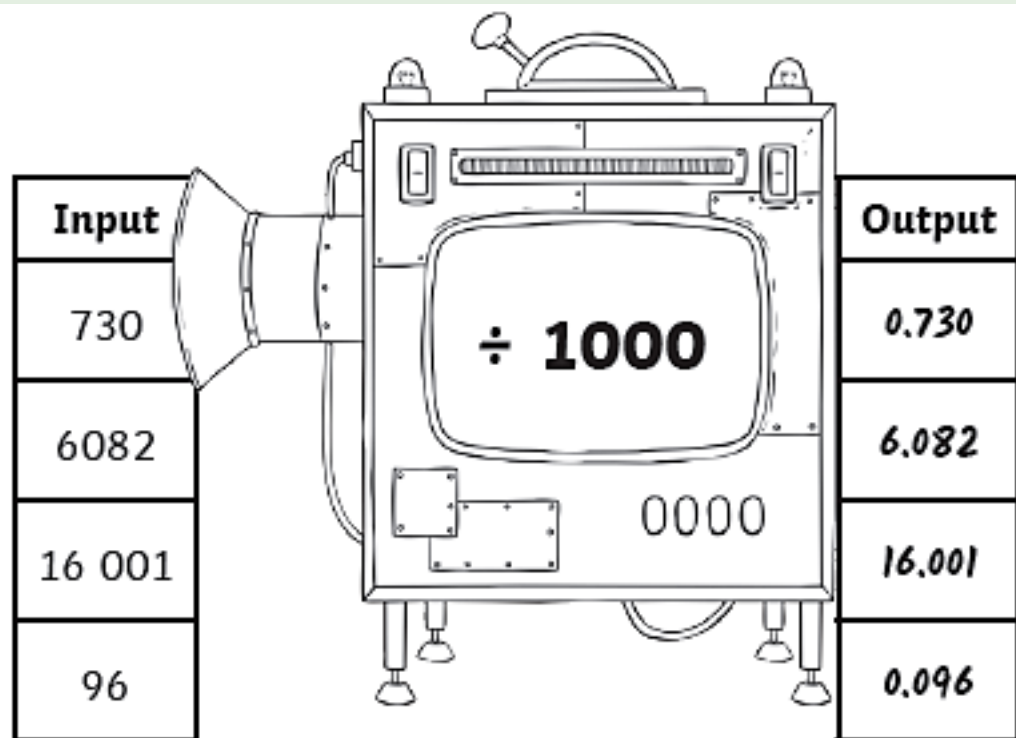
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Pay attention to the rule - the digits MUST move in order for them to increase in value.





2)





FLUENCY 1

Complete the sentences.

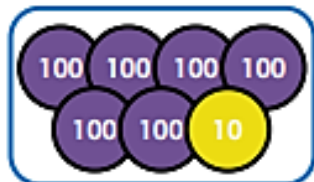
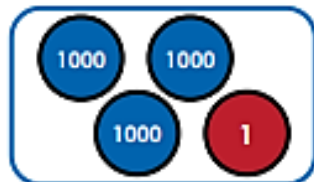
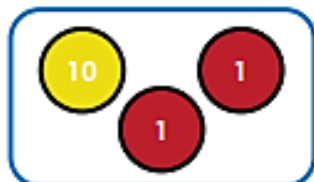
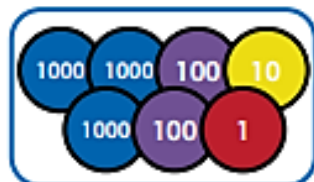
When we divide by 10, the digits move ____ place to the ____.

When we divide by 100, the digits move ____ places to the ____.

When we divide by 1,000, the digits move ____ places to the ____.

FLUENCY 2

Divide each number by 10, 100 and 1,000.



FLUENCY 3

Complete the number sentences.

913	÷		=	9.13
0.83	÷		=	0.083
	÷	100	=	89
37	÷	1,000	=	
	÷	10	=	0.45

FLUENCY 4

Mark Marlon's work.



$$3.76 \div 100 = 0.376$$

$$80.92 \div 10 = 8.92$$

$$314.5 \div 100 = 0.3145$$

$$459.01 \div 10 = 45.901$$

$$670.3 \div 1,000 = 0.673$$



Fluency 1

When we divide by 10, the digits move one place to the right.

When we divide by 100, the digits move two places to the right.

When we divide by 1,000, the digits move three places to the right.

Fluency 2

$$3,211 \div 10 = 321.1 \quad 3,211 \div 100 = 32.11 \quad 3,211 \div 1,000 = 3.211$$

$$12 \div 10 = 1.2 \quad 12 \div 100 = 0.12 \quad 12 \div 1,000 = 0.012$$

$$3,001 \div 10 = 300.1 \quad 3,001 \div 100 = 30.01 \quad 3,001 \div 1,000 = 3.001$$

$$610 \div 10 = 61 \quad 610 \div 100 = 6.1 \quad 610 \div 1,000 = 0.61$$

Fluency 3

913	÷	100	=	9.13
0.83	÷	10	=	0.083
8,900	÷	100	=	89
37	÷	1000	=	0.037
4.5	÷	10	=	0.45

Fluency 4

$$3.76 \div 100 = 0.376 \quad \text{X} \quad 0.0376$$

$$80.92 \div 10 = 8.92 \quad \text{X} \quad 8.092$$

$$314.5 \div 100 = 0.3145 \quad \text{X} \quad 3.145$$

$$459.01 \div 10 = 45.901 \quad \checkmark$$

$$670.3 \div 1,000 = 0.673 \quad \text{X} \quad 0.6703$$



REASONING 1

Anita has been learning to divide by 10, 100 and 1,000.



When dividing by 10, 100 or 1,000, you simply move each digit one, two or three spaces to the left.

Do you agree with her? Explain your reasoning.

REASONING 3

Darcey is dividing numbers by 10.



$89.01 \div 10 = 8.91$ because the zero isn't worth anything so you can just remove it!

Give Darcey some advice to help her understand the mistake she has made.

REASONING 2

Which is the odd one out?

$4,506 \div 100$

$45,060 \div 1,000$

$4,560 \div 100$

$450.6 \div 10$

4.506×10

Convince me!

REASONING 4

True or False?



I can solve $3.9 \div 30$ by calculating $3.9 \div 10$ and then multiplying the answer by 3.

Prove it!



REASONING TASKS



Reasoning 1

Pupil responses should show that they do not agree with Anita.

Modelled DAB Reasoning Responses

D – I do not agree with Anita.

A – When dividing by 10, 100 or 1,000, you move each digit one, two or three spaces to the right.

B – Anita has described multiplying by 10, 100 or 1,000. When you divide by 10, 100 or 1,000, the number becomes 10, 100 or 1,000 times smaller so the digits must move to the right.

Reasoning 2

Pupil responses should show that $4,560 \div 100$ is the odd one out.

Modelled DAB Reasoning Response

D – $4,560 \div 100$ is the odd one out.

A – It does not share the same answer as the other calculations.

B – $4,560 \div 100 = 45.6$. All of the other calculations have the answer 45.06.

Reasoning 3

Pupil responses should show that Darcey cannot remove the 0 from her number.

Modelled DAB Reasoning Response

D – Darcey is incorrect – you can't just remove the zero from the number.

A – The zero in Darcey's number is acting as a place holder as there are 0 tenths but 1 hundredth.

B – When dividing by 10, each digit including 0 must move one place to the right to make its value 10 times smaller. As Darcey has removed the 0, her 1 still has the same value as the starting number of 1 hundredth whereas it should now have the value of 1 thousandth. The correct calculation is $89.01 \div 10 = 8.901$

Reasoning 4

Pupil responses should show that Asha's statement is false.

Modelled DAB Reasoning Response

D – False

A – You cannot solve $3.9 \div 30$ by calculating $3.9 \div 10$ and then multiplying the answer by 3.

B – $3.9 \div 30 = 0.13$. You can work this out by calculating $3.9 \div 10$ to get 3.9 then dividing 3.9 by 3 to get 0.13. If you multiply 3.9 by 3 you are making the number 3 times bigger instead of 3 times smaller.

1)



I think the missing number in this calculation is 3.



Do you agree? Explain your reasoning.

$$6.705 \times 100 + 0.1 \times \boxed{} \div 10 = 201.18$$

2)



I am thinking of a number. I multiply it by 10 and then add 50. I then divide it by 100. I get 0.907 as my answer. What number did I start with?

I think 40.7 was your starting number.



Do you agree? Explain your reasoning.

3) When you divide a three-digit number by 100, the answer will be a decimal.

Prove if this statement is always, sometimes or never true. Explain your reasoning and support this with examples.

Fancy a challenge?

Can you find a path from 6 to 0.06?
You cannot make diagonal moves.

6	$\times 10$	$\times 10$	$\div 100$
$\div 10$	$\times 100$	$\times 100$	$\div 10$
$\times 10$	$\div 10$	$\div 1,000$	$\div 100$
$\div 1,000$	$\times 1,000$	$\times 100$	0.06

Is there more than one way?



1) *Correct.*

$$6.705 \times 100 = 670.5$$

$$670.5 + 0.1 = 670.6$$

$$670.6 \times 3 = 2011.8$$

$$2011.8 \div 10 = 201.18$$

2) *Incorrect. This can be calculated by using the inverse operations and working back through the problem from the answer to the starting number.*

$$0.907 \times 100 = 90.7$$

$$90.7 - 50 = 40.7$$

She is incorrect because 40.7 was not the starting number.

3) *Sometimes true. When most three-digit numbers are divided by 100, the answer will be a decimal, e.g. $456 \div 100 = 4.56$. When multiples of 100 are divided by 100, the answer will be a one-digit whole number, e.g. $600 \div 100 = 6$.*