

## Multiply and Divide by 10, 100 and 1000 task

1. Connor is using his knowledge of division to teach his younger brother about dividing 1 or 2 digit numbers by 10, 100 and 1,000.

The original numbers he starts with are between 5 and 90. Two of them are multiples of ten and they all have different tens digits.

Using the digit cards below, explore eight different ways Connor could have filled in the table to teach his brother. You can only use a digit card once per number.



Example

Original Number	$\div 10$	$\div 100$	$\div 1,000$
56	5.6	0.56	0.056

You can use the digit cards more than once but not twice in the same number.

Using the following rules, how many ways can you make 70?

- Use a number from column A
- Use an operation from column B.
- Use number from column C.

A	B		C
0.7	×	÷	0.1
7			1
70			10
700			100
7,000			1,000

Example

$$700 \div 10 = 70$$

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

6	× 10	× 10	÷ 100
÷ 10	× 100	× 100	÷ 10
× 10	÷ 10	÷ 1,000	÷ 100
÷ 1,000	× 1,000	× 100	0.06

Is there more than one way?

Eva says,

When you divide by 10, 100 or 1,000 you just take away the zeros or move the decimal point.



Do you agree?  
Explain why.

Answers:

Table – many possible answers

Possible answers:

$0.7 \times 100$   
 $7 \times 10$   
 $70 \times 1$   
 $700 \div 10$   
 $7,000 \div 100$   
 $70 \div 1$

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

Possible explanation

Eva is wrong, the decimal point never moves. When dividing, the digits move right along the place value columns.

Possible examples to prove Eva wrong:

$$24 \div 10 = 2.4$$

$$107 \div 10 = 10.7$$

This shows that you cannot just remove a zero from the number