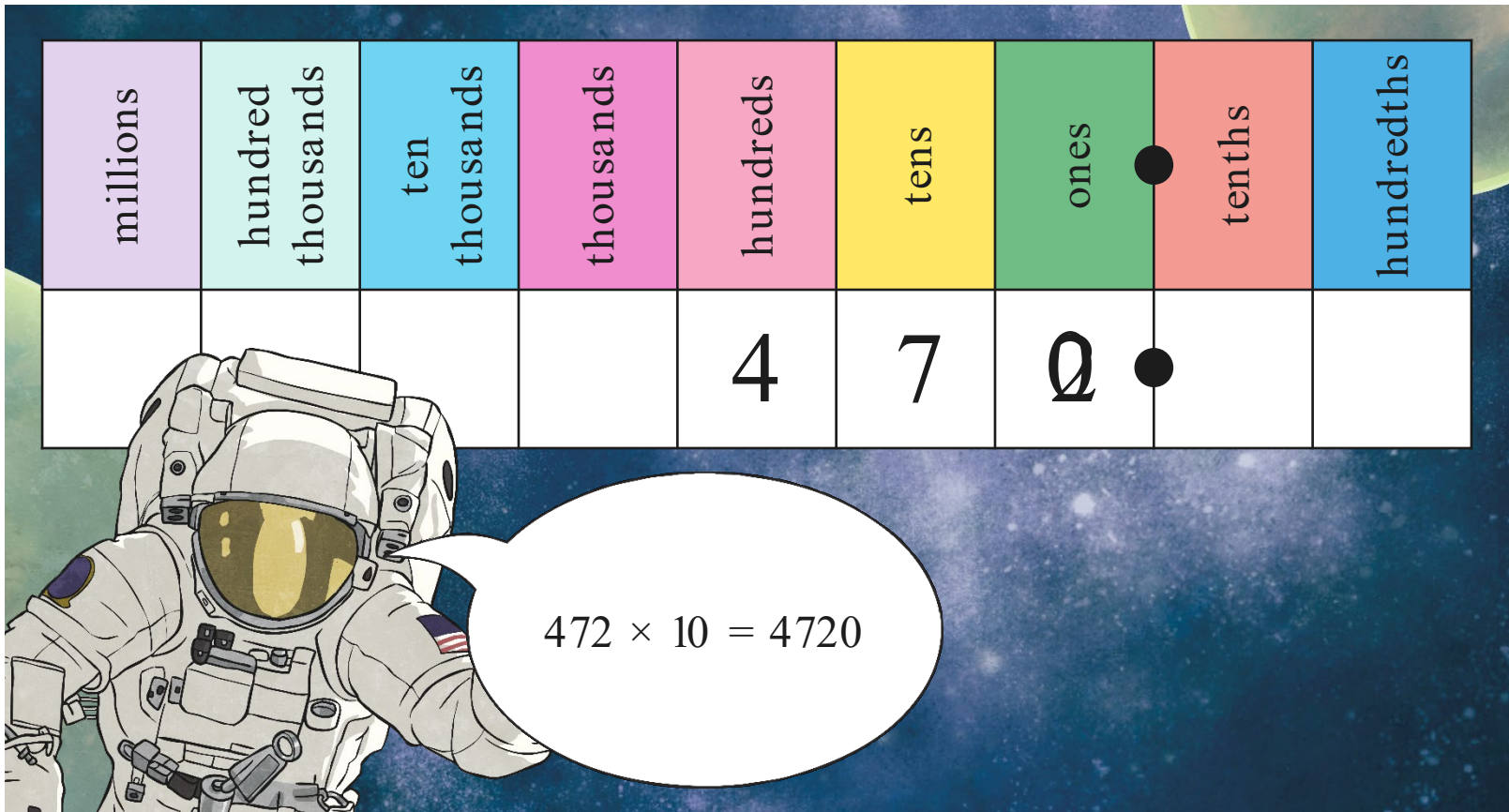


Multiplying and Dividing by 10, 100 and 1000

Multiplying by 10

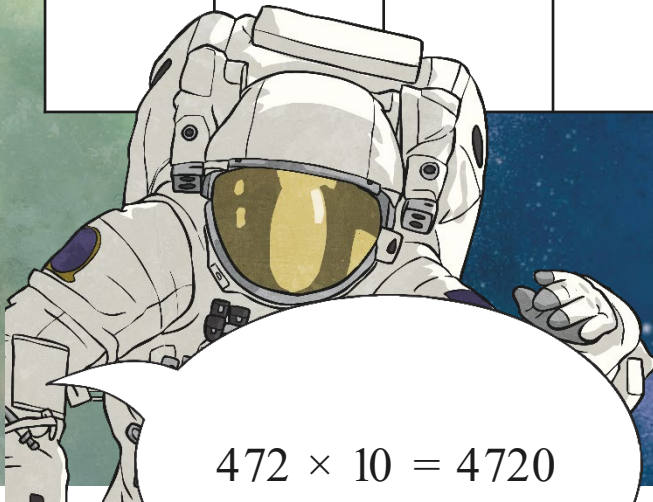
When we multiply by 10, the number gets 10 times bigger.
The whole number moves one place to the left.



Multiplying by 10

When we multiply by 10, the number gets 10 times bigger.
The whole number moves one place to the left.

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
				4	7	0		

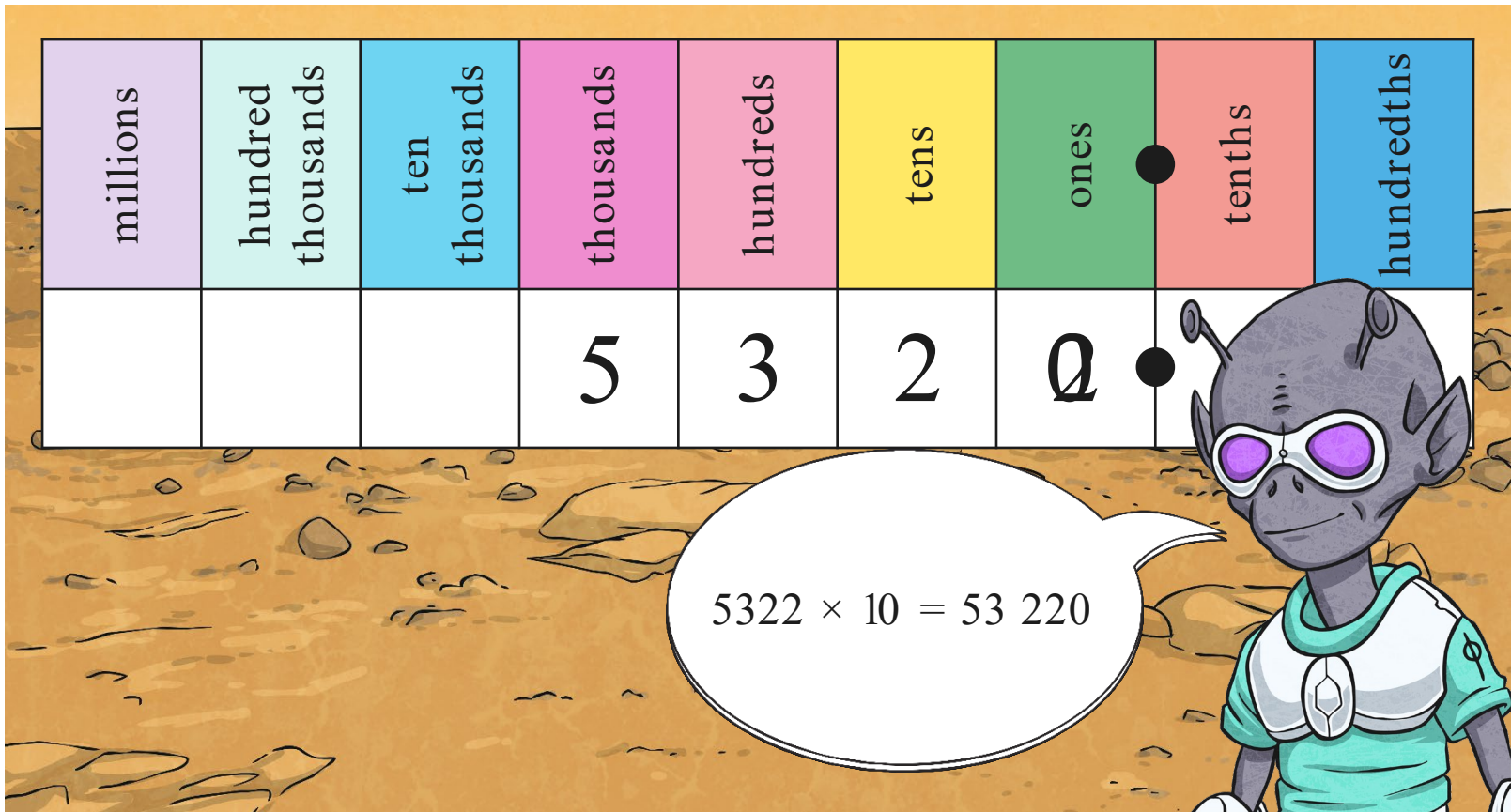


$$472 \times 10 = 4720$$

- When we multiply by 10, the number gets 10 times bigger.
- The whole number moves one place to the left.
- We can't have an empty space before the decimal point.
- So we put a zero in here as a place holder. There are 0 ones.

Multiplying by 10

When we multiply by 10, the number gets 10 times bigger.
The whole number moves one place to the left.

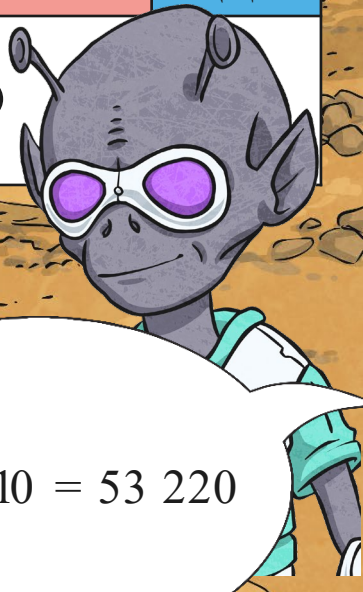


Multiplying by 10

When we multiply by 10, the number gets 10 times bigger.
The whole number moves one place to the left.

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
			5	3	2	0	.	

- When we multiply by 10, the number gets 10 times bigger.
- The whole number moves one place to the left.
- We can't have an empty space before the decimal point.
- So we put a zero in here as a place holder. There are 0 ones.



$5322 \times 10 = 53\,220$

You try

- $35 \times 10 =$
- $150 \times 10 =$

Multiplying by 100



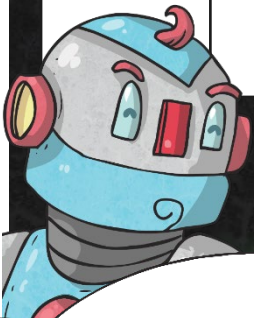
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
			6	4	0	0		

 $6420 \times 100 = 642\,000$

Multiplying by 100



millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
			6	4	0	0	.	



$$6420 \times 100 = 642\,000$$

- When we multiply by 100, what happens?
- The number gets 100 times bigger.
- How many places to the left do you think each digit needs to move now?
- 2 places because we are making the number 10 times bigger, then 10 times bigger again.
- What do you think we do in the highlighted squares?
- We can't have empty spaces before the decimal point.
- So we put 2 zeros in here as place holders.
- There are 0 ones and 0 tens.

You try

- $21 \times 100 =$
- $1600 \times 100 =$

Multiplying by 1000



millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
			3	0	0	0	.	

3 places:
 $10 \times 10 \times 10$

A grey robot with a black visor and glowing blue eyes. It is wearing a suit with a yellow light on its chest. A large white speech bubble is coming from its mouth, containing the text "3 places: 10 x 10 x 10".

Multiplying by 1000



millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
			3	6	0	0	.	

- When we multiply by 1000, what happens?
- The number gets 1000 times bigger.
- How many places to the left do you think each digit needs to move now?
- 3 places: $10 \times 10 \times 10$

A cartoon robot with a grey and white body, a large black helmet with a yellow visor, and glowing blue eyes. It is standing against a dark background with white stars.

You try

- $35 \times 1000 =$
- $1800 \times 1000 =$

Dividing by 10

When we divide by 10, the number gets 10 times smaller.

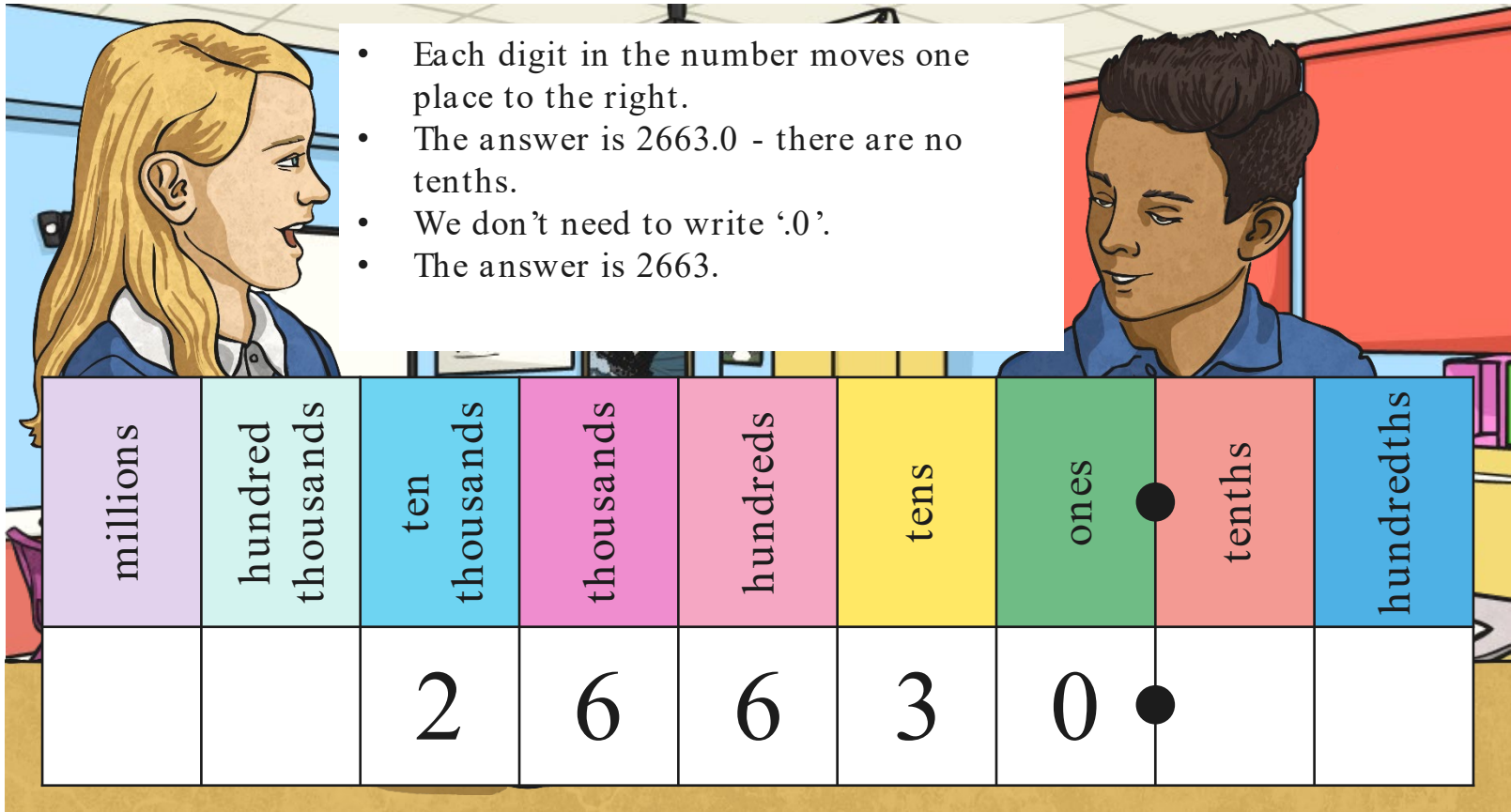
Each digit in the number moves one place to the right.

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
		2	6	6	3	0		

Dividing by 10

When we divide by 10, the number gets 10 times smaller.

- Each digit in the number moves one place to the right.
- The answer is 2663.0 - there are no tenths.
- We don't need to write '0'.
- The answer is 2663.



millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
		2	6	6	3	0		

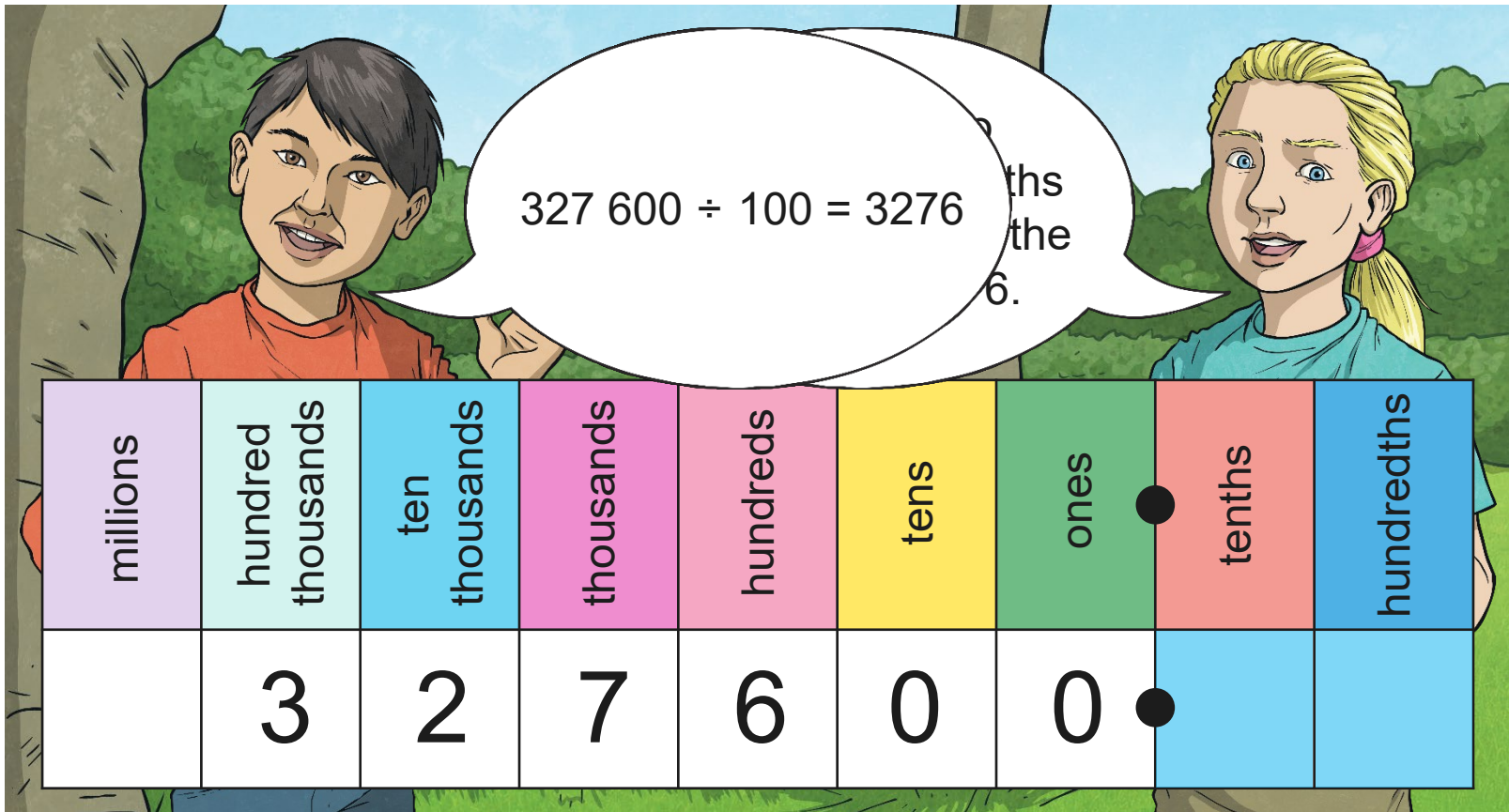
You try

- $210 \div 10 =$
- $18,000 \div 10 =$

Dividing by 100



$327\,600 \div 100 = 3276$



Dividing by 100



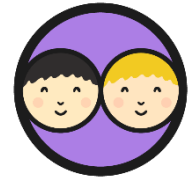
- When we divide by 100, what happens?
 - The number gets 100 times smaller.
 - How many places to the right do you think each digit needs to move now?
 - 2 places.
- We make the number 10 times smaller, then 10 times smaller again.
- What do you think happens in the highlighted squares?
 - There are no tenths or hundredths in this number, so the answer is 3276.
 - $327\,600 \div 100 = 3276$

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths
	3	2	7	6	0	0		

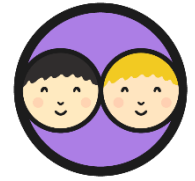
You try

- $3100 \div 100 =$
- $18,100 \div 100 =$

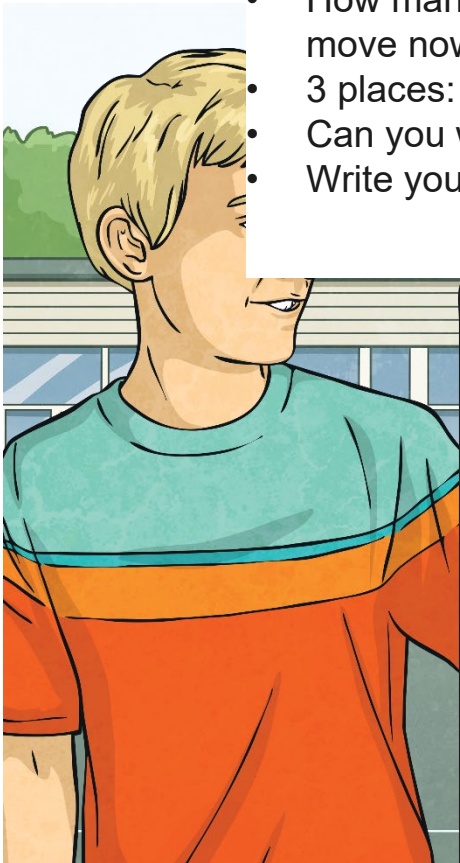
Dividing by 1000



Dividing by 1000



- When we divide by 1000, what happens?
- The number gets 1000 times smaller.
- How many places to the right do you think each digit needs to move now?
- 3 places: $10 \div 10 \div 10$
- Can you work with a partner to answer these?
- Write your answers on your whiteboard.



$$6000 \div 1000 = 6$$

$$539\,000 \div 1000 = 539$$

$$6031\,000 \div 1000 = 6031$$



You try

- $18,000 \div 1000 =$
- $18,000 \div 1000 =$

Combined – left or right?

- $150 \times 100 =$
- $510 \div 10 =$
- $850 \times 1000 =$
- $18,000 \div 100 =$
- $15 \times 1000 =$
- $2500 \div 10 =$
- $8500 \div 100 =$
- $860 \times 100 =$

Spot the Expert



Which of these children got the most correct answers?

	Sandeep	Felicity	Stefan
a) $348\,000 \div 100 =$	348 X	3480 ✓	34 800 X
b) $64\,200 \times 100 =$	642 X	6 420 000 ✓	642 000 X
c) $25\,300 \div 10 =$	2530 ✓	253 000 X	253 X
d) $540 \times 1000 =$	540 000 ✓	5400 X	5 400 000 X
e) $5\,280\,000 \div 1000 =$	5200 X	5280 ✓	528 000 X
Number of Correct Answers	2/5	3/5	0/5

twinkl