



# Mathematics

## Number and Algebra

# Decimal Disco



# Aim

- To multiply and divide whole numbers and decimals by 10, 100 and 1000.

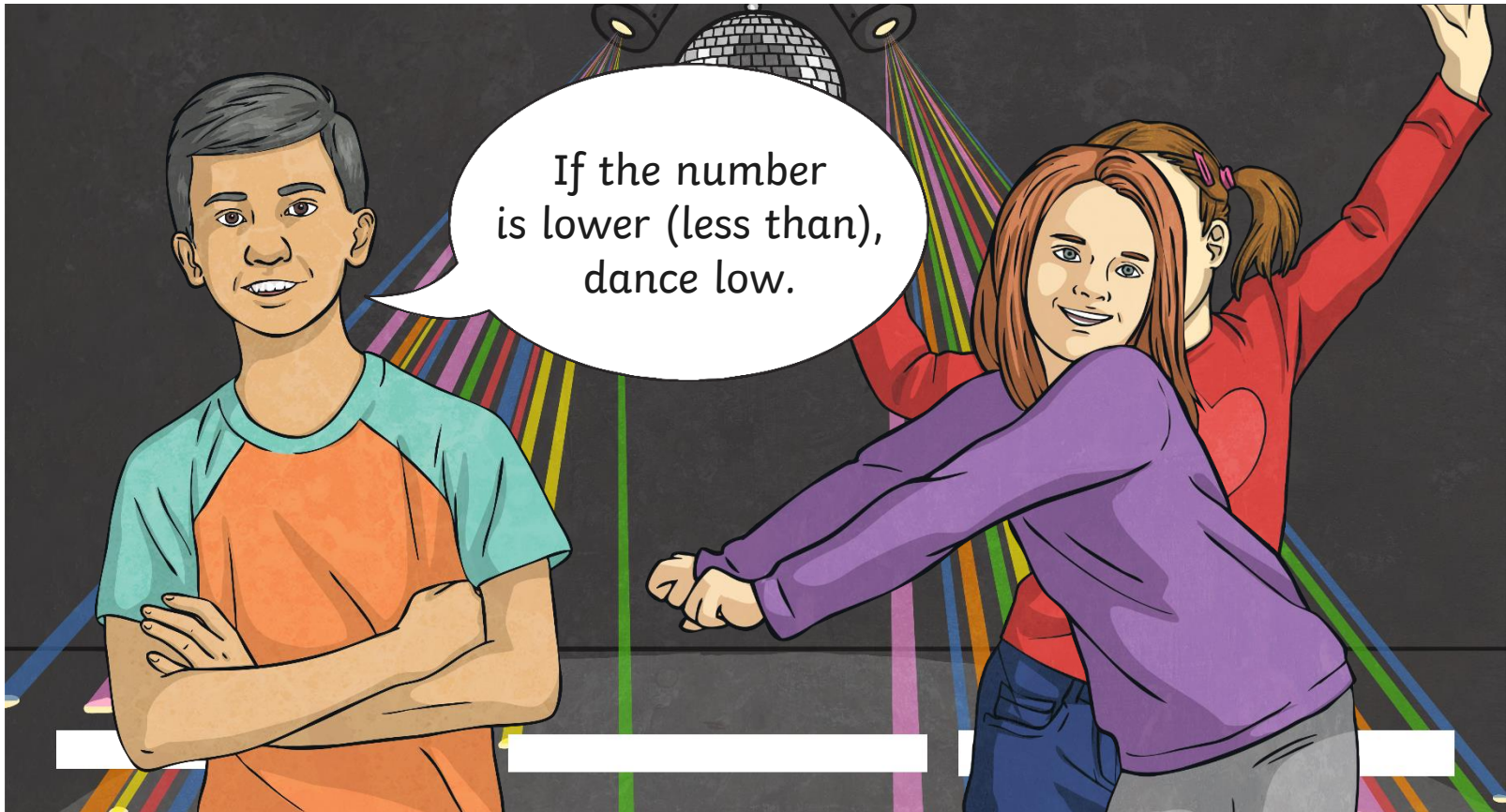
# Success Criteria

- I can multiply and divide numbers by 10 by moving each digit one place to the left or right.
- I can multiply and divide numbers by 100 by moving each digit two places to the left or right.
- I can multiply and divide numbers by 1000 by moving each digit three places to the left or right.

# Decimal Dancing



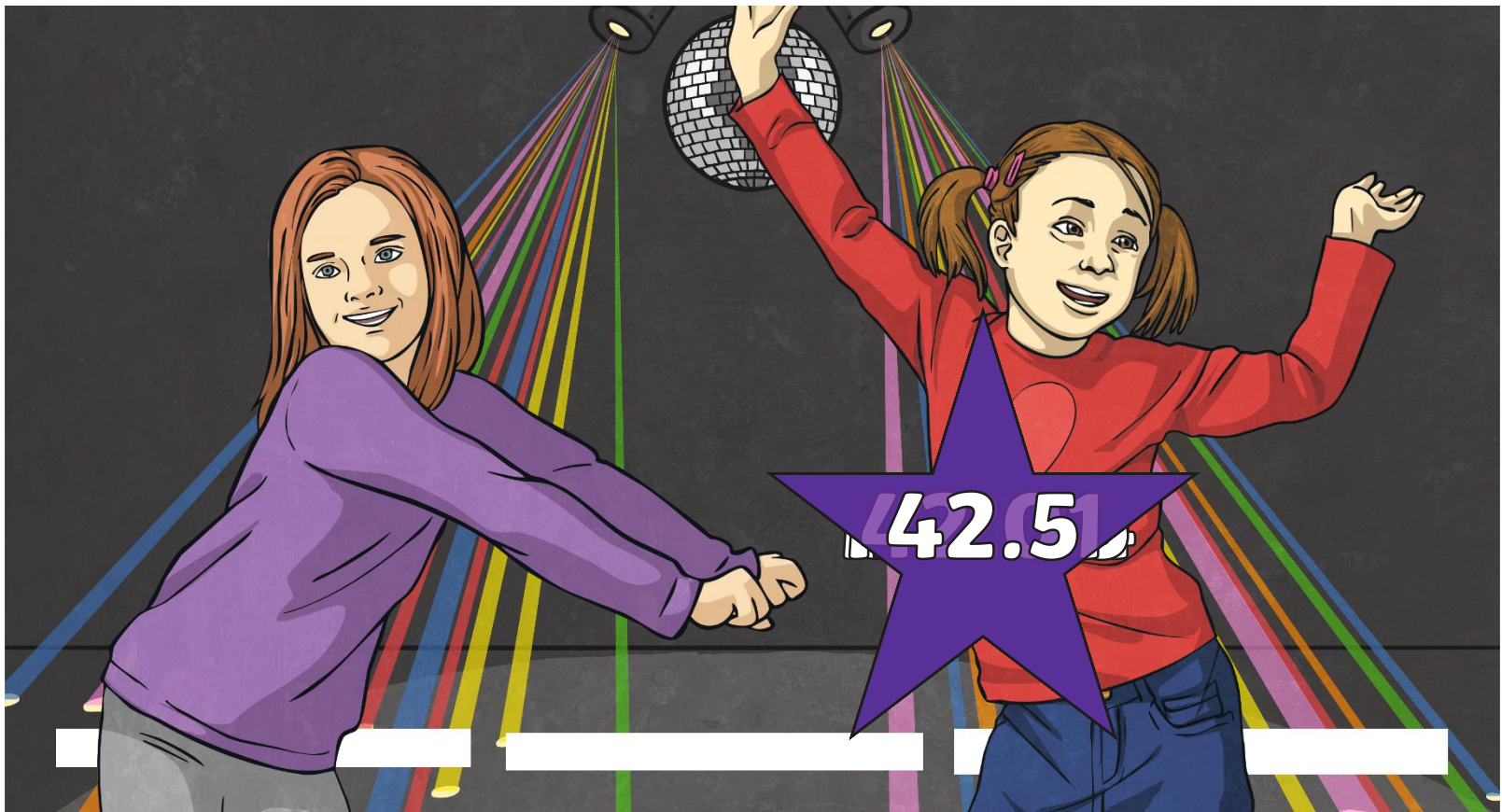
How are your dance moves today?



# Decimal Dancing



Get dancing!





# Multiplying and Dividing by 10, 100 and 1000



How do we **multiply** whole numbers by 10, 100 and 1000?

This will make  
number 10, 100  
1000 times bigger

Don't forget to  
add zeros as place  
holders before the  
decimal point.

Move each digit in  
the place value grid  
one, two or three  
places to the left.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths
				2	4	6	.	

# Multiplying and Dividing by 10, 100 and 1000



How do we **divide** whole numbers by 10, 100 and 1000?


167 000 ÷ 100 = 1670

This will make  
the number 10, 100 or  
1000 times smaller.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths
	1	6	7	0	0	0	.	

# The Decimal Point

When we calculated  $167\,000 \div 100$ ,  
we moved each digit two places to the right.



What happens  
if the digits aren't  
zeros though?

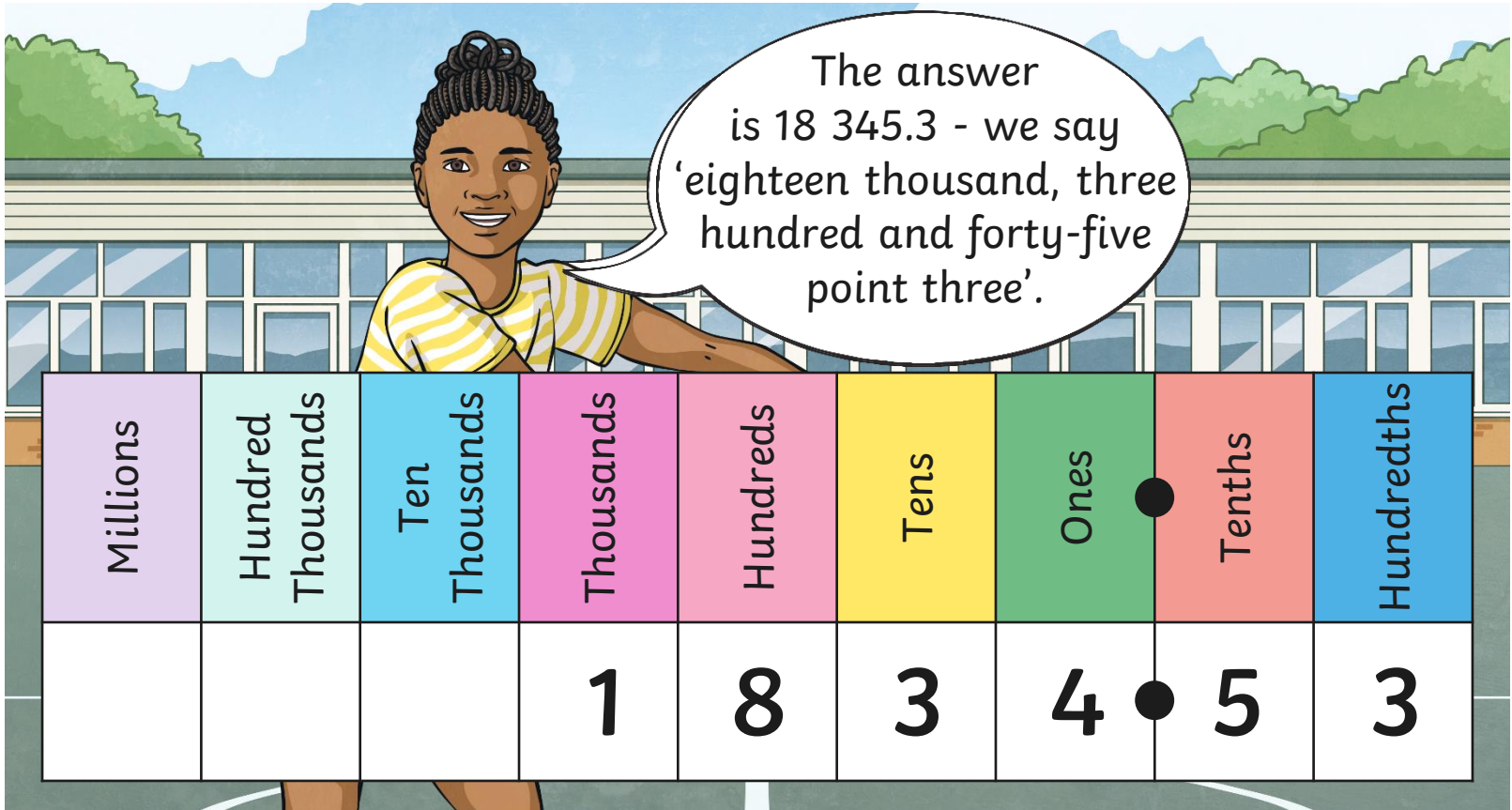
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths
	1	6	7	0	0	0	•	



# The Decimal Point

Let's work out  $1834.53 \times 10$ .

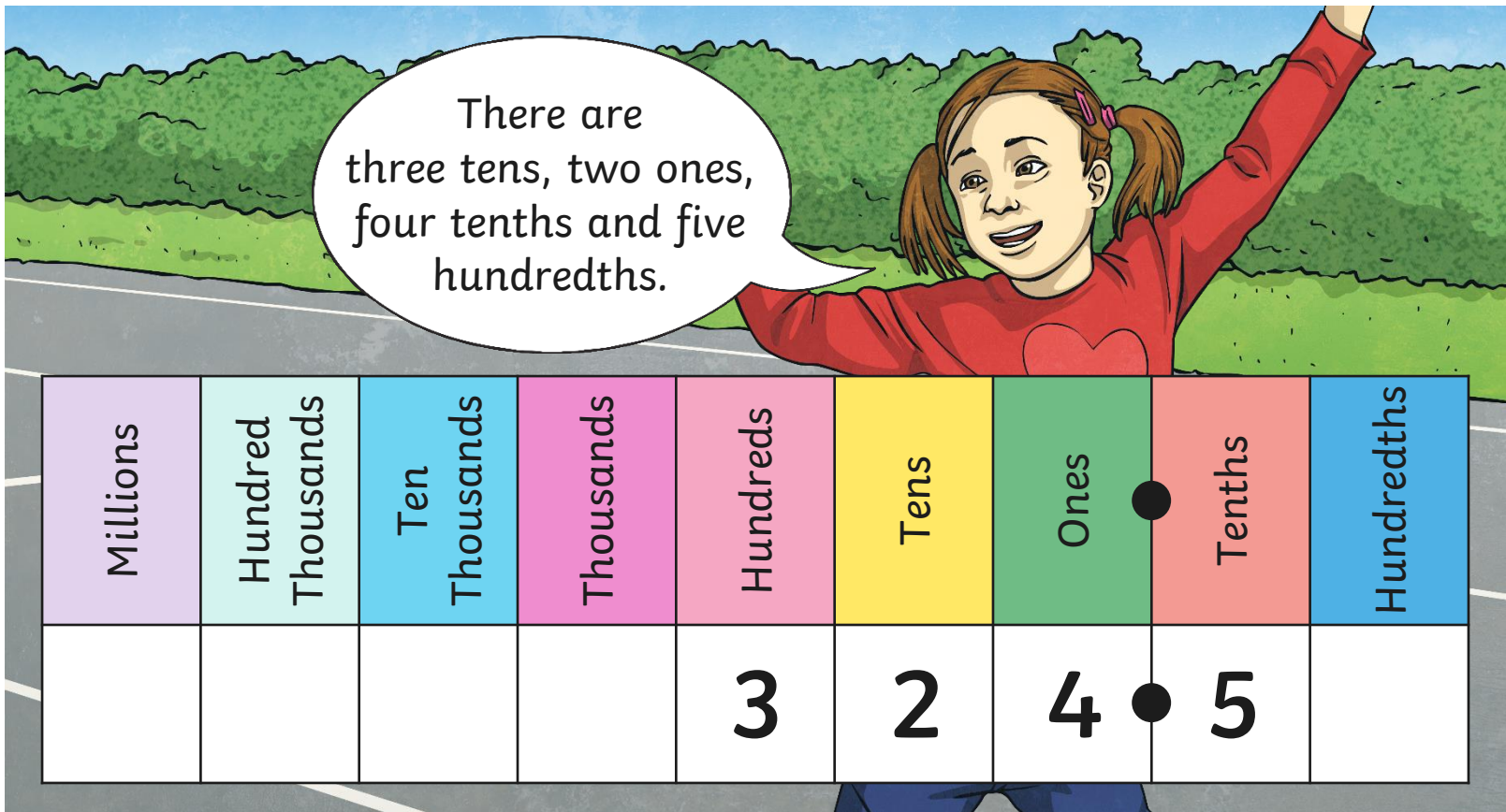
The answer is 18 345.3 - we say 'eighteen thousand, three hundred and forty-five point three'.



# The Decimal Point

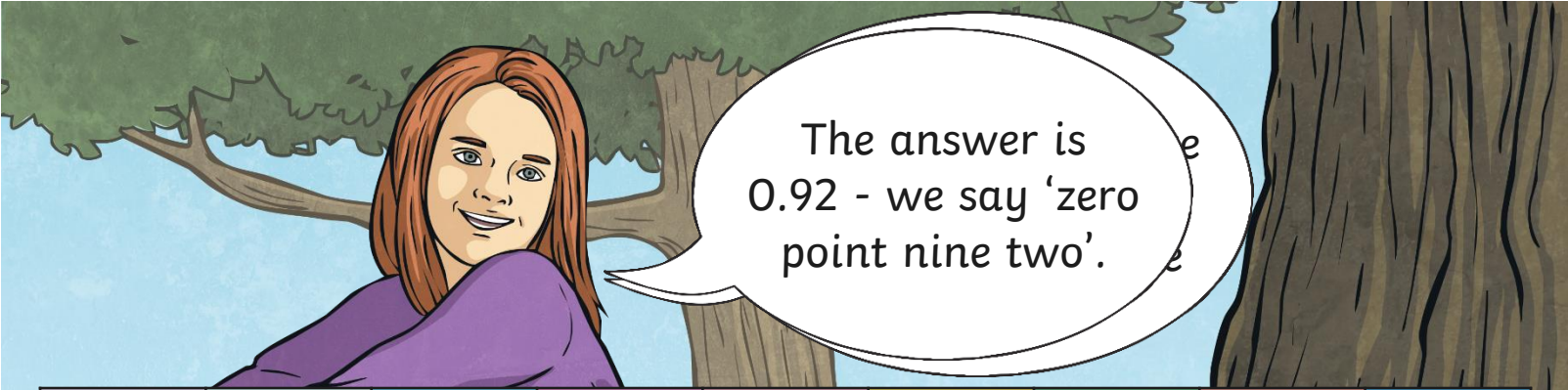
Let's work out  $324.5 \div 10$ .

There are three tens, two ones, four tenths and five hundredths.



# The Decimal Point

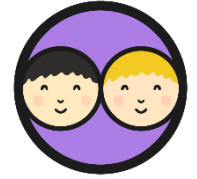
Let's work out  $92 \div 100$ .



The answer is 0.92 - we say 'zero point nine two'.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths
					9	0	.	

# Practise



Time to show us your moves! Complete these calculations.  
Check with your partner to see if they got the same answers as you.

$$53.46 \times 10 = 534.6$$

$$56\,196 \div 10 = 5619.6$$

$$792\,079 \div 100 = 7920.79$$

$$210\,832 \div 100 = 2108.32$$

$$423.6 \times 10 = 4236$$

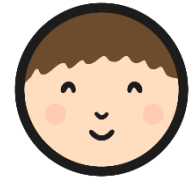
$$620.64 \times 100 = 62\,064$$

$$540 \div 1000 = 0.54$$

$$63 \div 10 = 6.3$$



# Decimal Disco



Use your marvellous mathematic skills to complete these activities:

## Decimal Disco

To multiply and divide whole numbers and decimals by 10, 100 and 1000.

Use your **Place Value Grid** to help you to work out the answers to these calculations.

- Multiplying and Dividing by 10.
 

a) $65.6 \times 10 =$ _____	d) $5342 \div 10 =$ _____
b) $72.40 \div 10 =$ _____	e) $12\ 547 \div 10 =$ _____
c) $639.67 \times 10 =$ _____	
- Multiplying and Dividing by 100.
 

a) $65.67 \times 100 =$ _____	d) $118 \div 100 =$ _____
b) $46 \div 100 =$ _____	e) $14\ 523 \div 100 =$ _____
c) $209.46 \times 100 =$ _____	
- Multiplying and Dividing by 1000.
 

a) $4.1 \times 1000 =$ _____	d) $10\ 000 \div 1000 =$ _____
b) $230 \div 1000 =$ _____	e) $14\ 000 \div 1000 =$ _____
c) $199.02 \times 1000 =$ _____	
- 'Rock and roll' three dice to make a three-digit number. Multiply and divide by 10, 100 and 1000. Repeat this five times.

Number	× 10	÷ 10	× 100	÷ 100	× 1000

## Decimal Disco

To multiply and divide whole numbers and decimals by 10, 100 and 1000.

Work out the answers to these calculations:

- Multiplying and Dividing by 10.
 

a) $65.9 \times 10 =$ _____	d) $180\ 342 \div 10 =$ _____
b) $1232.9 \div 10 =$ _____	e) $132\ 507 \div 10 =$ _____
c) $6399.67 \times 10 =$ _____	
- Multiplying and Dividing by 100.
 

a) $6738 \times 100 =$ _____	d) $9534 \div 100 =$ _____
b) $461.1 \div 100 =$ _____	e) $623\ 400 \div 100 =$ _____
c) $2249.46 \times 100 =$ _____	
- Multiplying and Dividing by 1000.
 

a) $4.13 \times 1000 =$ _____	d) $100\ 000 \div 1000 =$ _____
b) $3480 \div 1000 =$ _____	e) $2\ 345\ 000 \div 1000 =$ _____
c) $2199.52 \times 1000 =$ _____	
- 'Rock and roll' four dice to make a four-digit number. Multiply and divide this and 1000. Repeat this five times.

Number	× 10	÷ 10	× 100	÷ 100	× 1000

## Decimal Disco

To multiply and divide whole numbers and decimals by 10, 100 and 1000.

Work out the answers to these calculations:

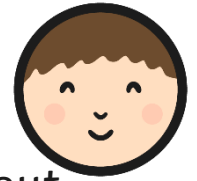
- Work out the answers to these calculations:
 

a) $25.8 \times 100 =$ _____	i) $2544 \div 100 =$ _____
b) $9832.9 \div 10 =$ _____	j) $927\ 400 \div 1000 =$ _____
c) $5309.07 \times 1000 =$ _____	k) $46.3 \times$ _____ $= 46\ 300$
d) $190\ 412 \div 100 =$ _____	l) _____ $\div 1000 = 92.89$
e) $22\ 547 \div 1000 =$ _____	m) $63.12 \times$ _____ $= 63\ 120$
f) $1008 \times 100 =$ _____	n) _____ $\div 1000 = 1000$
g) $321.2 \div 10 =$ _____	o) _____ $\div 100 = 8745$
h) $2940.4 \times 1000 =$ _____	
- 'Rock and roll' five dice to make a five-digit number. Multiply and divide this by 10, 100 and 1000. Repeat this five times.

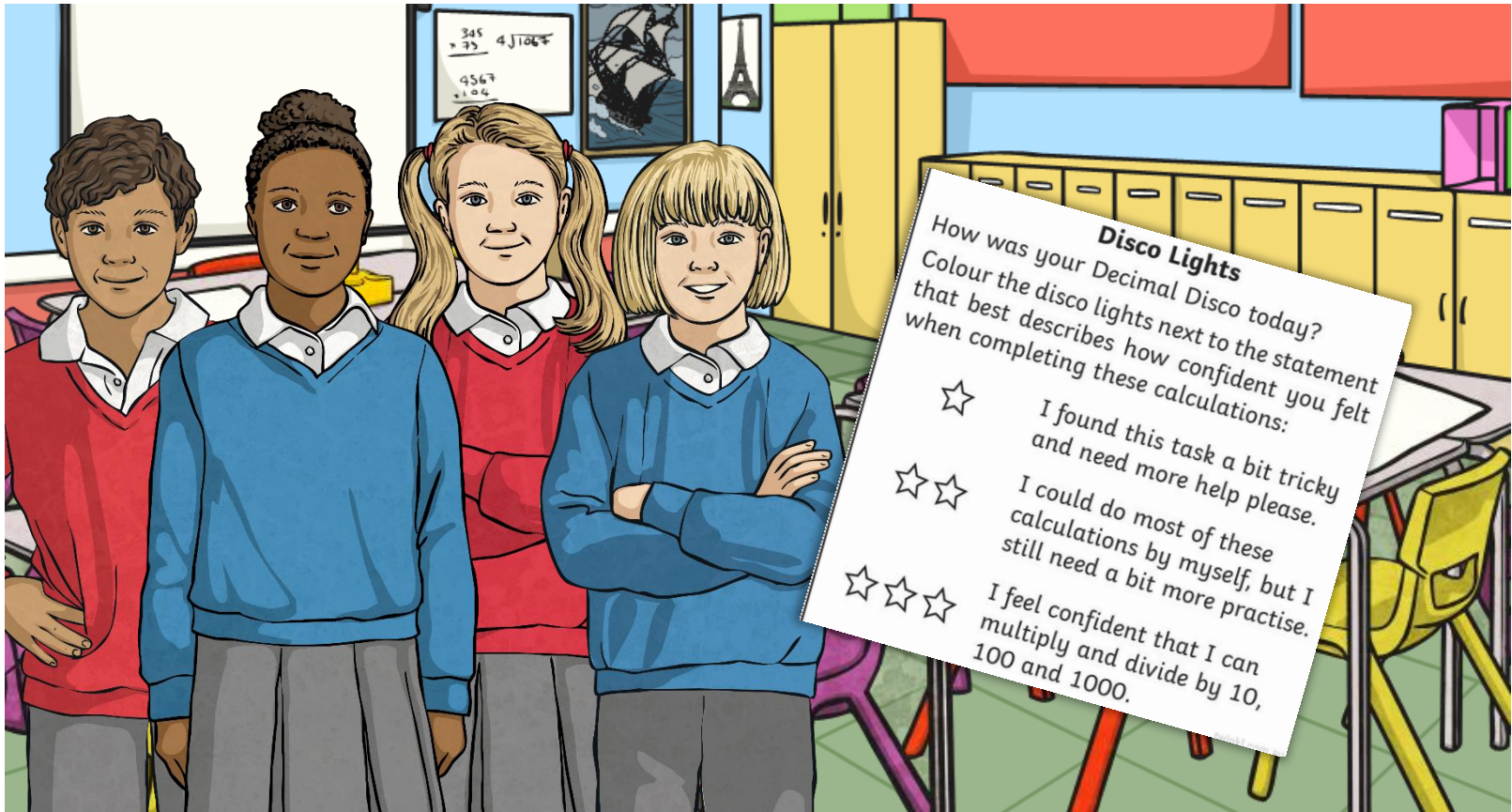
Number	× 10	÷ 10	× 100	÷ 100	× 1000	÷ 1000



# Disco Lights



Use your **Disco Lights Card** to show how confident you feel about multiplying and dividing by 10, 100 and 1000 across a decimal point.



# Aim



- To multiply and divide whole numbers and decimals by 10, 100 and 1000.

# Success Criteria

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