

Diving into Mastery

25.4.22

Revision week



Ratio and Proportion Problems



twinkl

25.4.22 Mon

LO: To revise ratio, proportion and scale factor

DO NOW!

Triangles and Squares- Silver five- a-day task

Hexagons- Gold five- a-day task

Octagons- Platinum five- a-day task

Useful websites....

<https://vimeo.com/516637261>



<https://www.bbc.co.uk/bitesize/topics/zsq7hyc/articles/z8kfmbk>

<https://www.bbc.co.uk/bitesize/topics/zsq7hyc/articles/z2nr4wx> --
practise questions

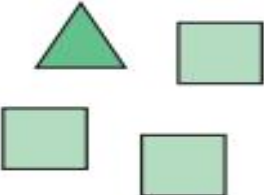
What key vocab can you remember?



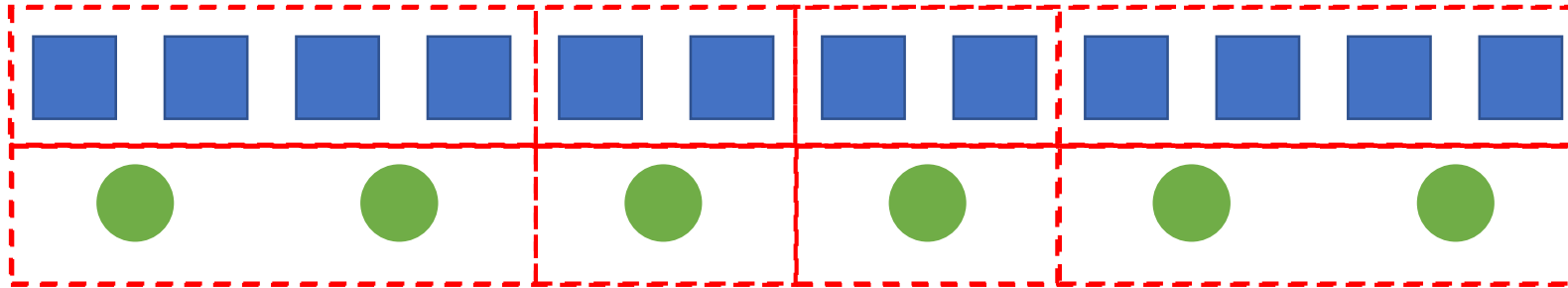


Ratio

Knowledge Organiser

Key Vocabulary	Ratio Language	The Ratio Symbol
ratio	For every 1 circle, there are 2 triangles. 	
proportion		The ratio of footballs to rugby balls: 1:4 The ratio of rugby balls to footballs: 4:1
"for every... there are..."	For every 2 bananas, there are 3 apples. 	
part		
whole	For every 1 football, there are 3 rugby balls. 	
scale factor		The ratio of circles to triangles: 2:3 The ratio of triangles to circles: 3:2
enlargement	Ratio and Fractions	
similar shapes		
length	For every 1 rugby ball, there are 2 footballs. Ratio of rugby balls to footballs: 1:2 $\frac{1}{3}$ of the balls are rugby balls.	
width		The ratio of apples to bananas: 1:2 The ratio of bananas to oranges: 2:3 The ratio of apples to bananas to oranges: 1:2:3 The ratio of oranges to bananas to apples: 3:2:1
perimeter		
	For every 1 triangle, there are 3 squares. Ratio of triangles to squares: 1:3 $\frac{1}{4}$ of the shapes are triangles.	

Have a think



For every 12 squares there are 6 circles.

For every 6 squares there are 3 circles.

For every 2 circles there are 4 squares.

Q3.

In a country dance there are **3 boys** and **2 girls** in every line.



42 boys take part in the dance.

How many girls?

Ratio and Proportion Problems

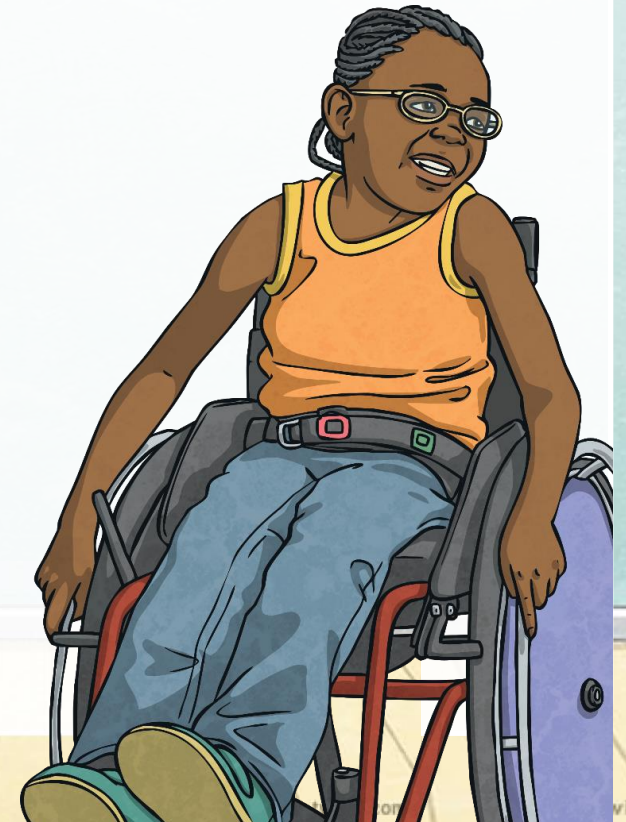
Two shops sell rulers.



Amy wants to buy 4 rulers. Which shop is cheapest? Explain how you know.

Shop 1 sells each ruler at 17p so 4 rulers would cost 68p.
Shop 2 sells each ruler at 15p so 4 rulers would cost 60p.
Shop 2 is cheapest.

Remember!



Over to you...

Squares and Triangles- Mrs Lund (Booster room)
Warm up cards then problem solving questions

Hexagons and Octagons- paired task 7a- 9 a
Mrs Cooper (class)

Fish pie

(for 2 people)

250 g fish

400 g potato

25 g butter

Omar makes fish pie for 3 people.

How many **grams of fish** should he use?

Show
your
method

g

2 marks

Daily Maths Meeting



Monday

Key skills

Tues 26.4.22

LO: To revise angles and missing angles in shapes

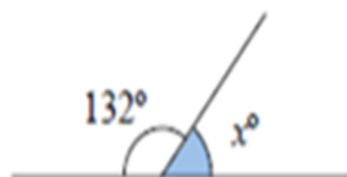
A1 Find the value x



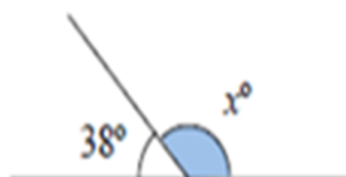
A2 Find the value x



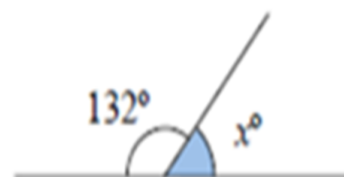
A1 Find the value x



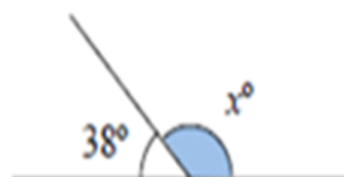
A2 Find the value x



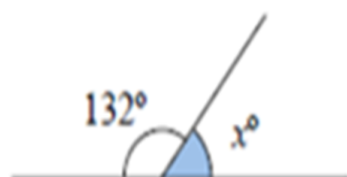
A1 Find the value x



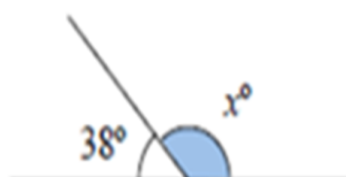
A2 Find the value x



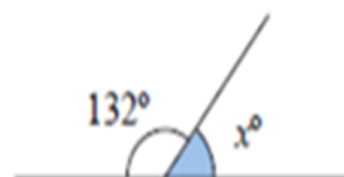
A1 Find the value x



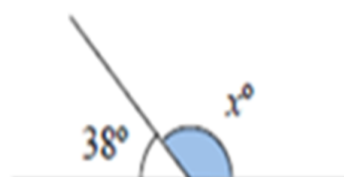
A2 Find the value x



A1 Find the value x

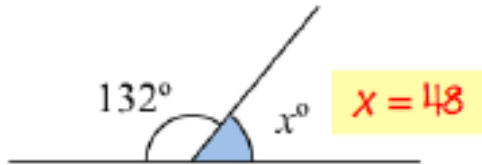


A2 Find the value x

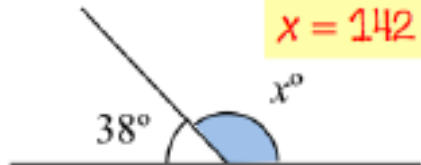


Answers!

A1 Find the value x



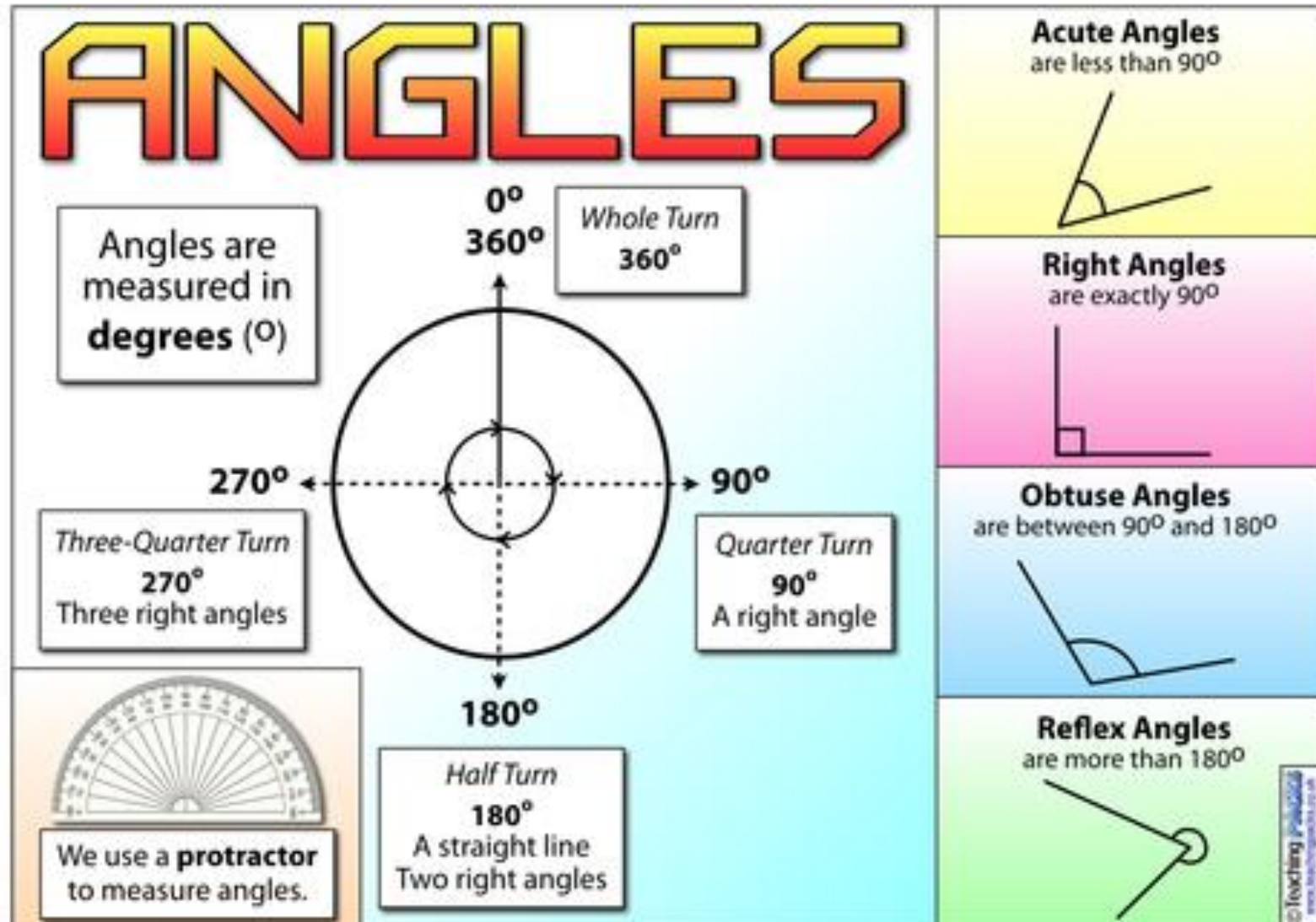
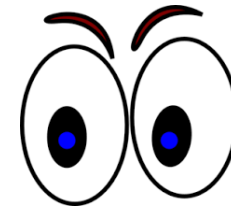
A2 Find the value x



<https://corbettmaths.com/2013/12/19/angles-straight-line-video-35/>



<https://www.bbc.co.uk/bitesize/articles/zy3jcmn>



Varied Fluency 4

Use $>$, $<$ or $=$ to complete the equation.

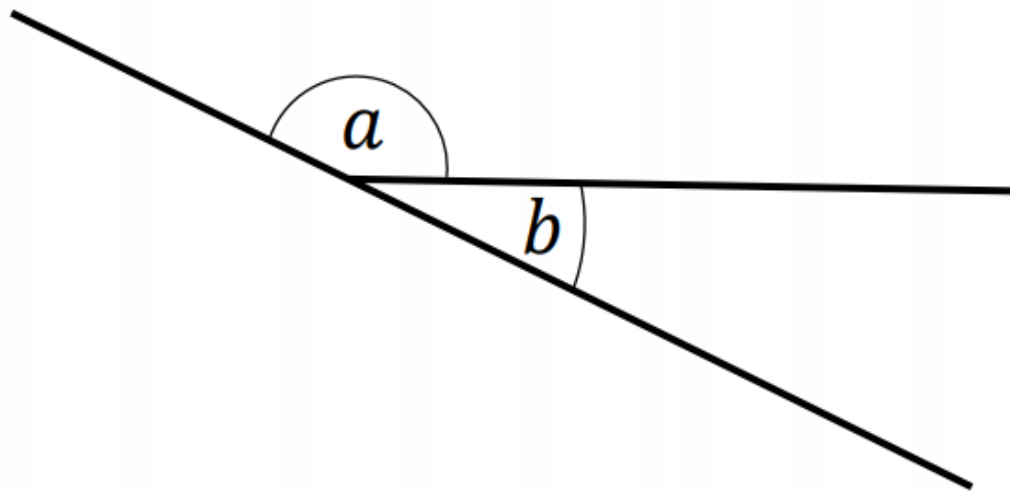
$$360^{\circ} \quad \square \quad \frac{3}{4} \text{ turn}$$

Varied Fluency 4

Use $>$, $<$ or $=$ to complete the equation.

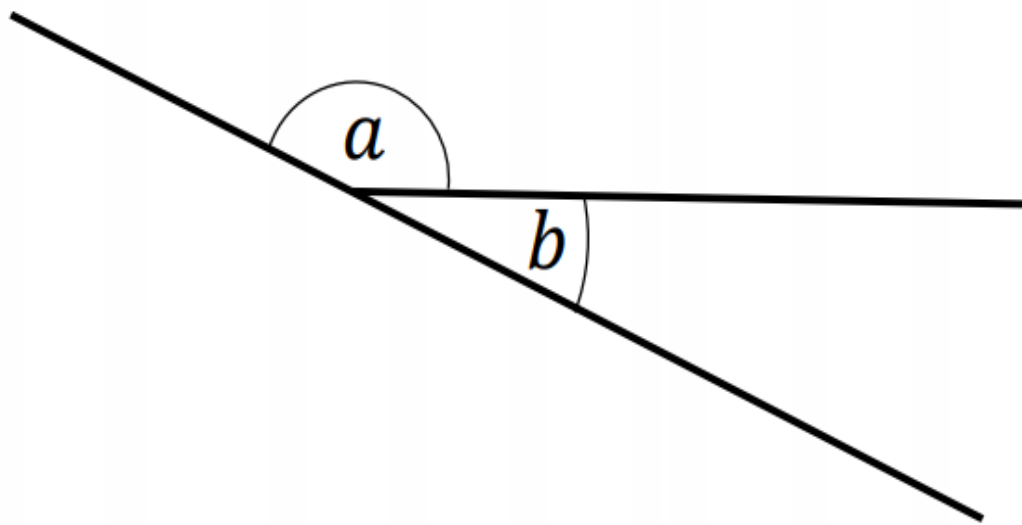
$$360^{\circ} \quad \boxed{>} \quad \frac{3}{4} \text{ turn}$$

If angle b is 25° then angle a must be 65° .



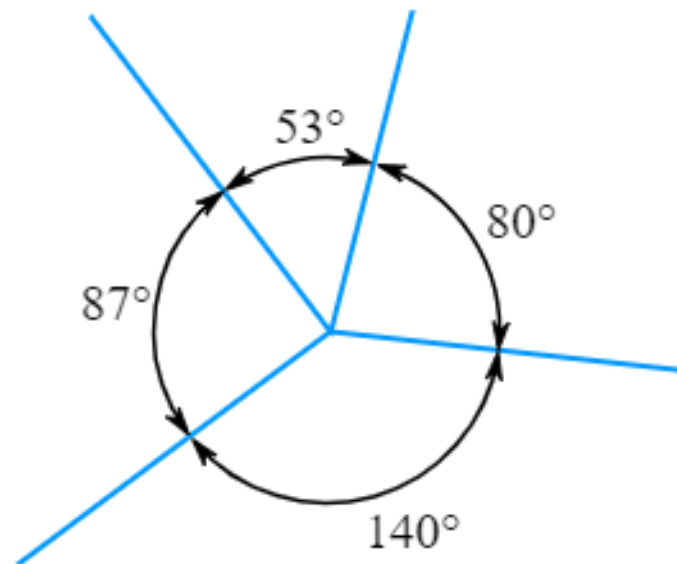
False

Angles on a straight line sum to 180° so if b is 25° then angle a must be 155° .



Angles around a point will always add up to 360 degrees

Key knowledge



The angles above all add to 360°

$$53^\circ + 80^\circ + 140^\circ + 87^\circ = 360^\circ$$

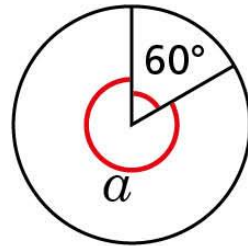
Calculating angles around a point

How would you work these out?

1

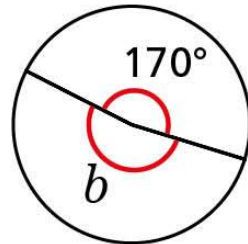
Work out the sizes of the unknown angles.

a)



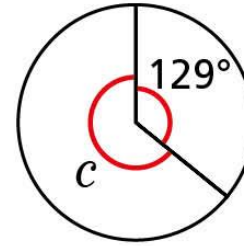
$$a = \boxed{}^\circ$$

b)



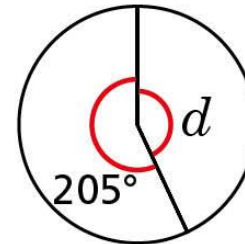
$$b = \boxed{}^\circ$$

c)



$$c = \boxed{}^\circ$$

d)



$$d = \boxed{}^\circ$$

Carousel – parts of a circle- Mrs
Lund

Missing angles in shapes- Mrs
Cooper

LO: To use properties of shapes to find missing angles



What is a
quadrilateral?

What is a polygon?

Draw a pair of parallel lines...

Draw perpendicular lines...

In books!



What is a
quadrilateral?

What is a polygon?

Draw a pair of parallel lines...

Draw perpendicular lines...

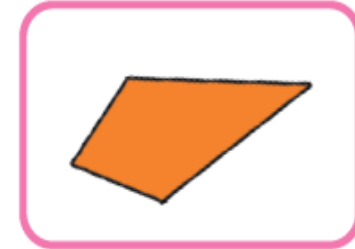
Crucial vocab **Properties of 2D Shapes**



curved



longer



sides



straight



shorter



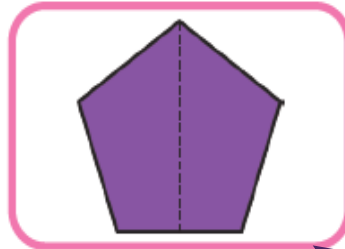
2 dimensional



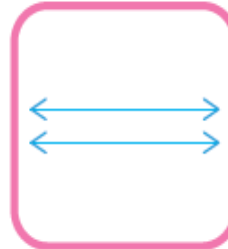
equal



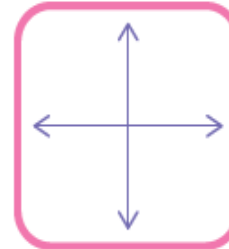
corners



symmetry



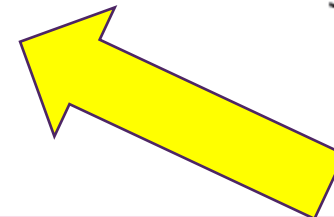
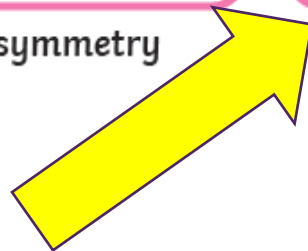
parallel



perpendicular

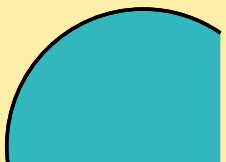


length

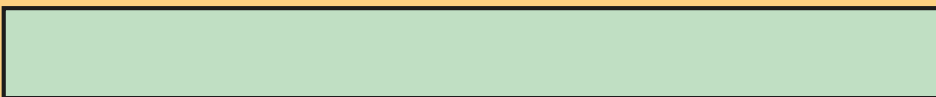


Properties of 2D Shapes

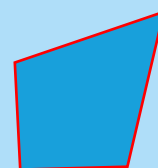
Take a look at some of the language used to describe the properties of 2-dimensional (2D) shapes below:



curved



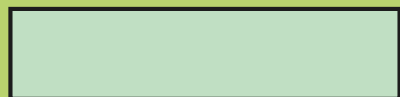
longer



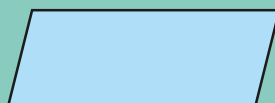
sides



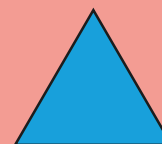
straight



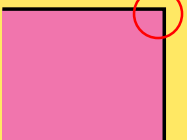
shorter



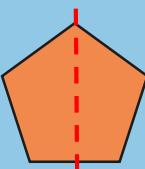
2-dimensional



equal



vertex/vertices



symmetry

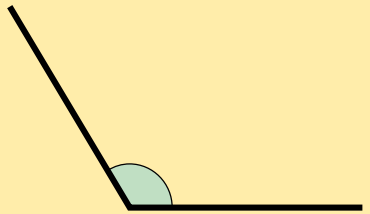


length

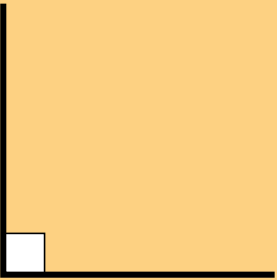


Properties of 2D Shapes

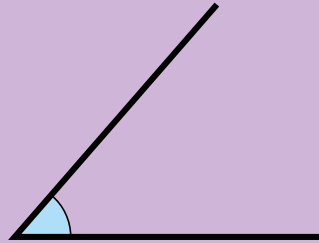
Take a look at some of the language used to describe the properties of 2-dimensional (2D) shapes below:



obtuse angle



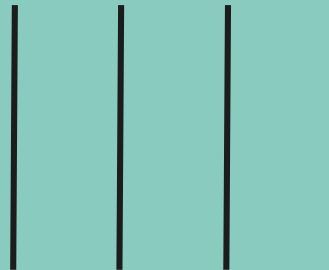
right angle



acute angle



perpendicular lines



parallel lines

Guess the shape!

Geometry Riddles



Clue 1: My interior angles total 540° .

Clue 2: I am regular.

Clue 1: I have 5 straight sides.

a regular
pentagon

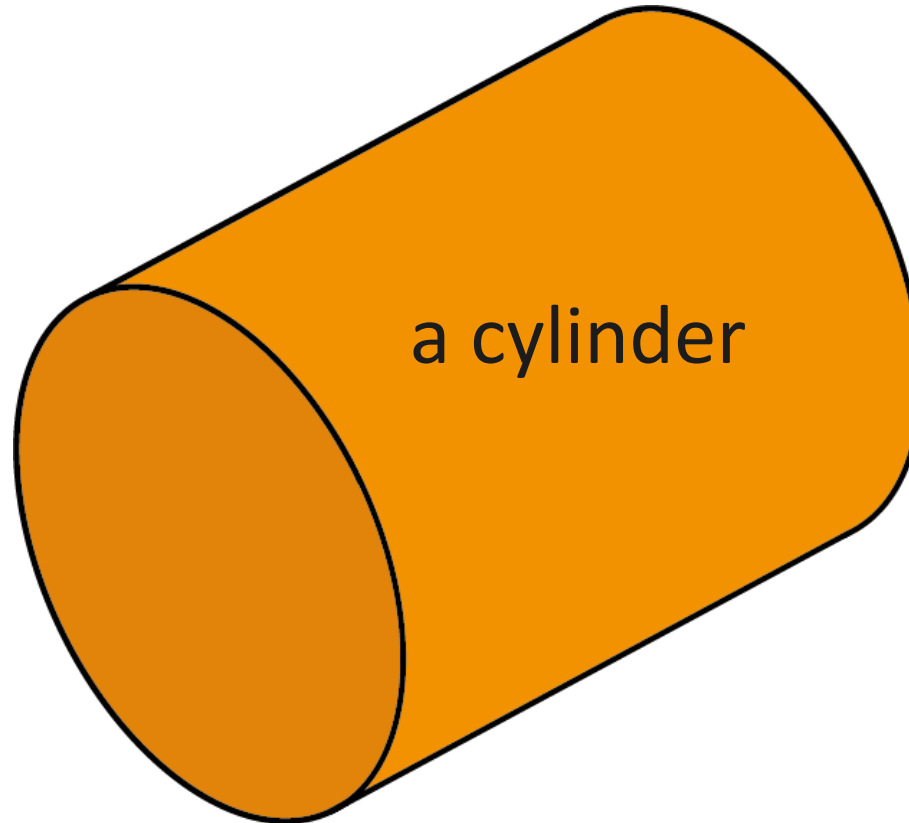
Geometry Riddles



Clue 1:
I have three faces.

Clue 2: Two of my faces
are circles.

Clue 1: My other face is
a rectangle.



Geometry Riddles



Clue 1:
I am a quadrilateral.

Clue 2: I have one pair
of parallel sides.

Clue 1: I have two pairs
of equal angles.



an isosceles
trapezium

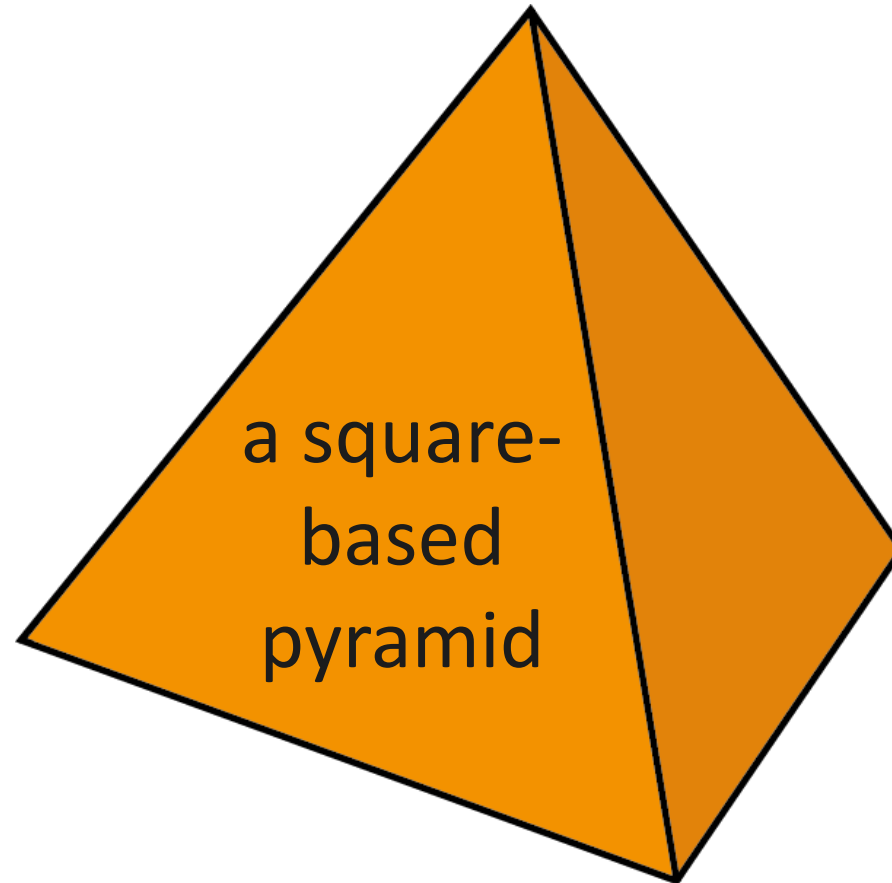
Geometry Riddles



Clue 1: I have 5 faces
and 5 vertices.

Clue 2: Four of my faces
are triangles.

Clue 1: My fifth face is a
square.



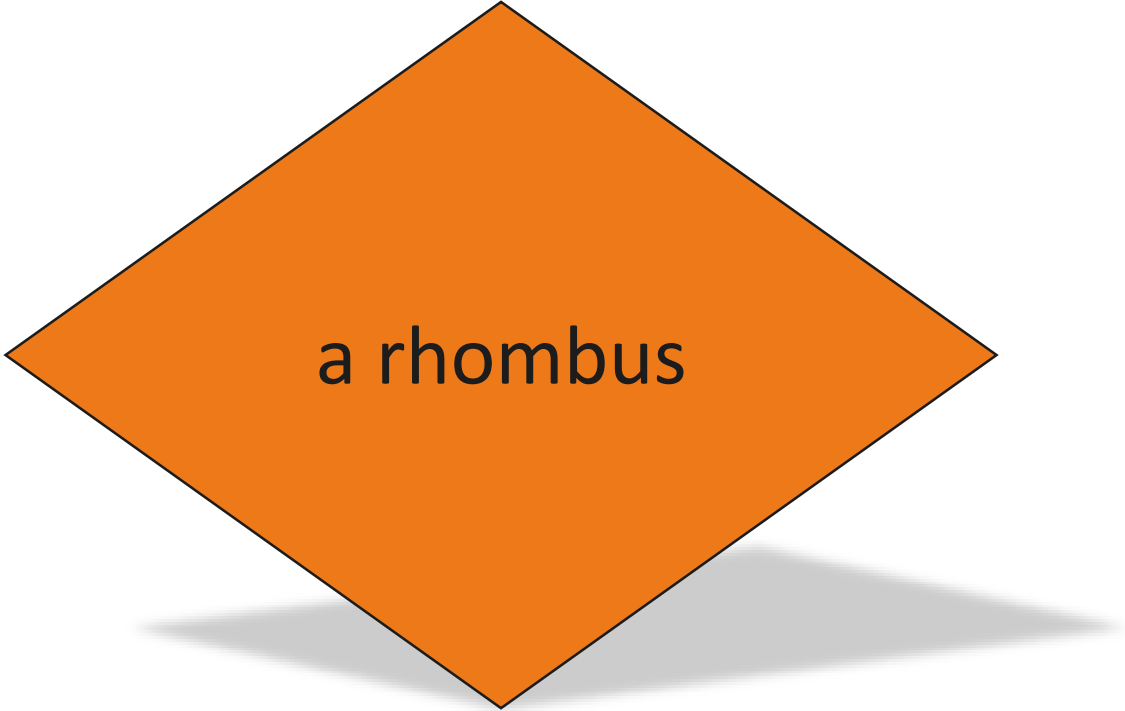
Geometry Riddles



Clue 1:
I am a quadrilateral.

Clue 2: All my sides are
congruent.

Clue 1: I have two pairs
of opposite, congruent
angles.



a rhombus

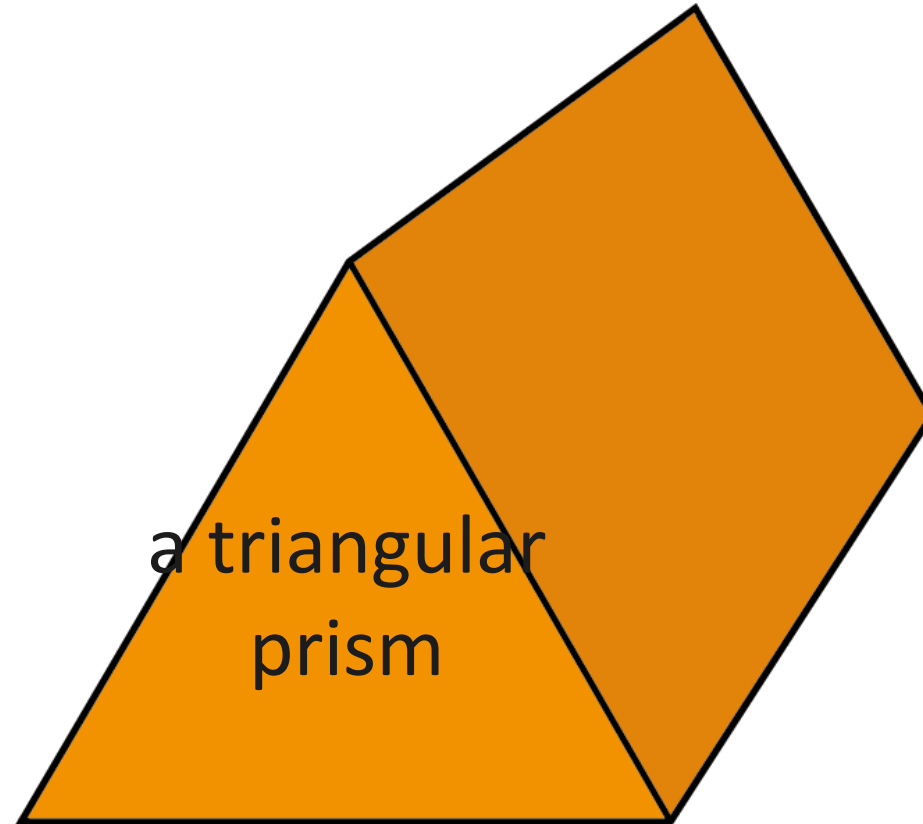
Geometry Riddles



Clue 1:
I am a prism.

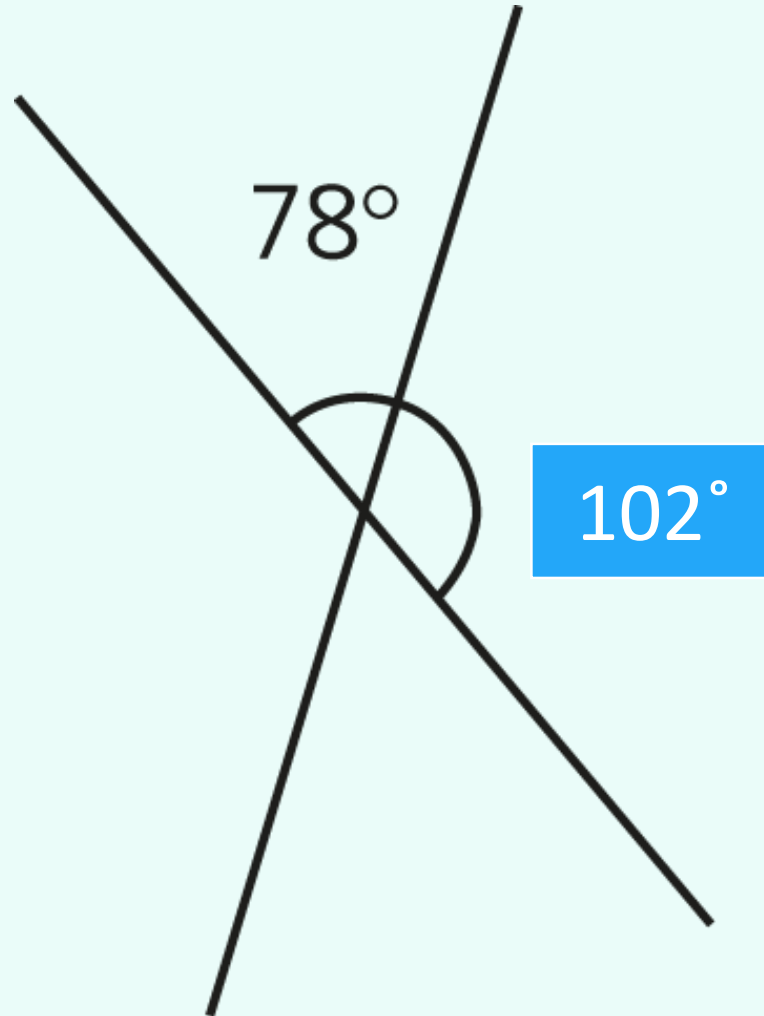
Clue 2:
I have five faces.

Clue 1: Three of my
faces are rectangular.

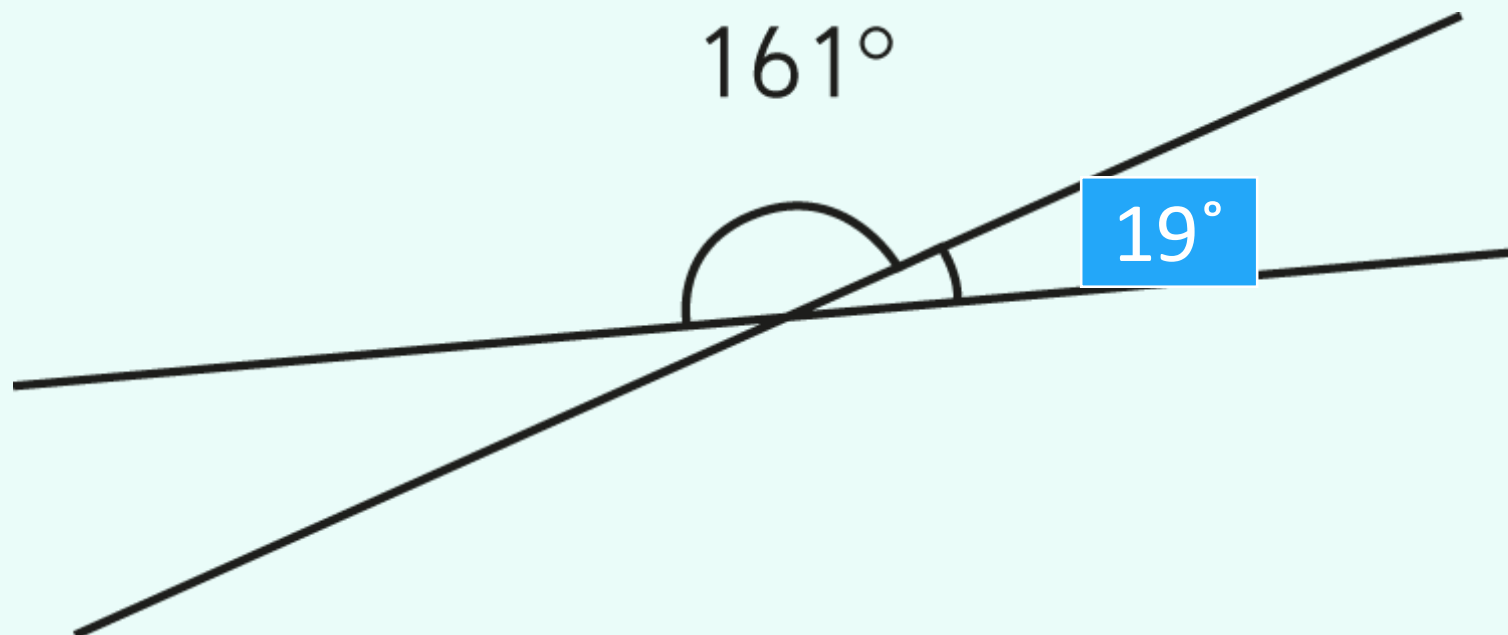


1

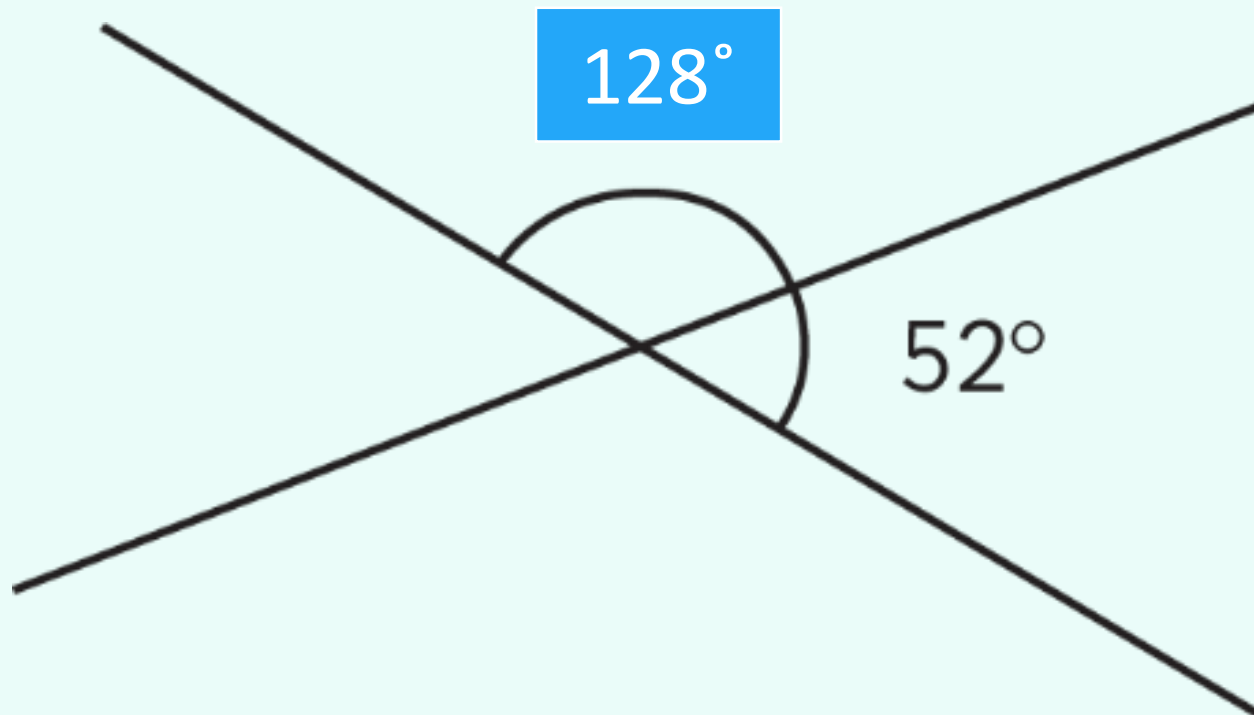
Calculate the missing angle marked with a letter in each of the following:



2



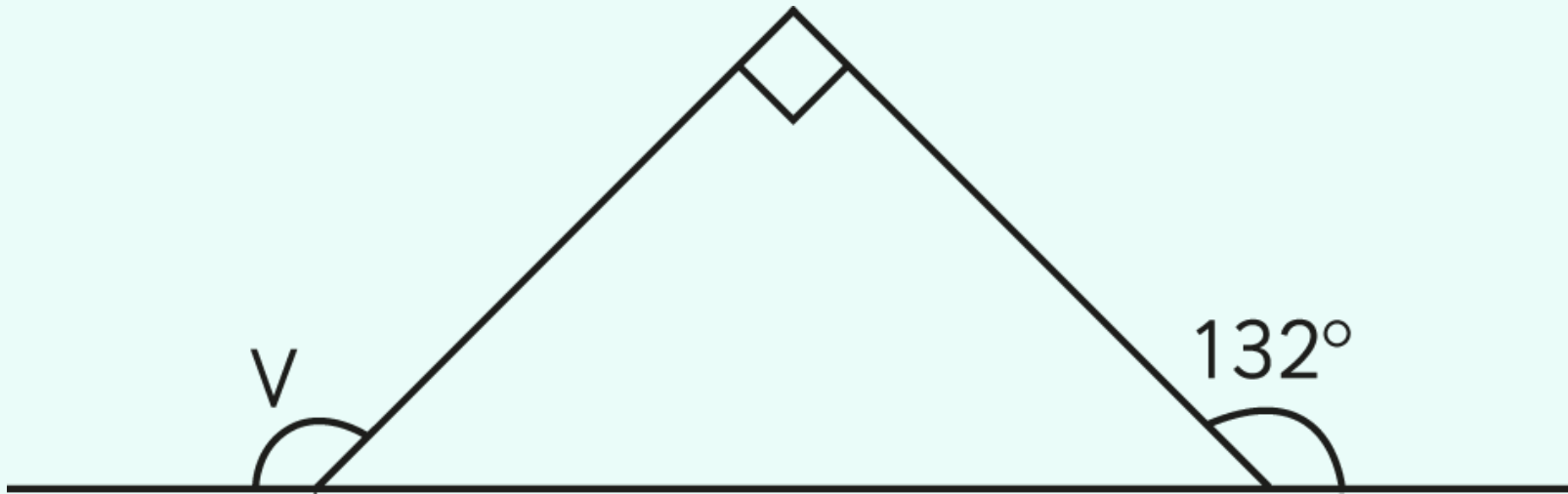
3



21

Calculate the angle in the following drawings:

$$U = 138^\circ$$

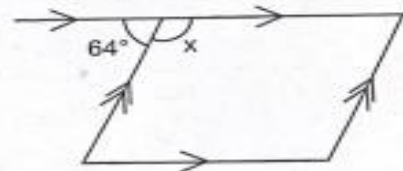




Angle Calculations

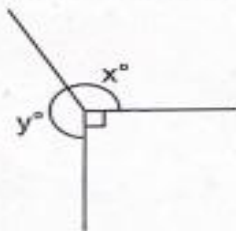
5. Work out the size of angle x in the parallelogram shown below.
Show your working in the box.

The diagram is not to scale.



$x = \dots\dots\dots^\circ$

6. Callum measures angle x to be 120° . Work out the size of angle y without measuring.
Show your working in the box.

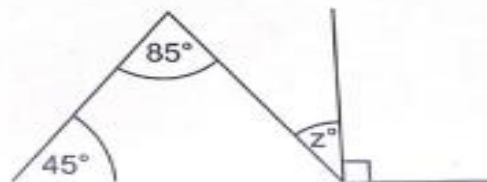


$y = \dots\dots\dots^\circ$

7. Look at this diagram.

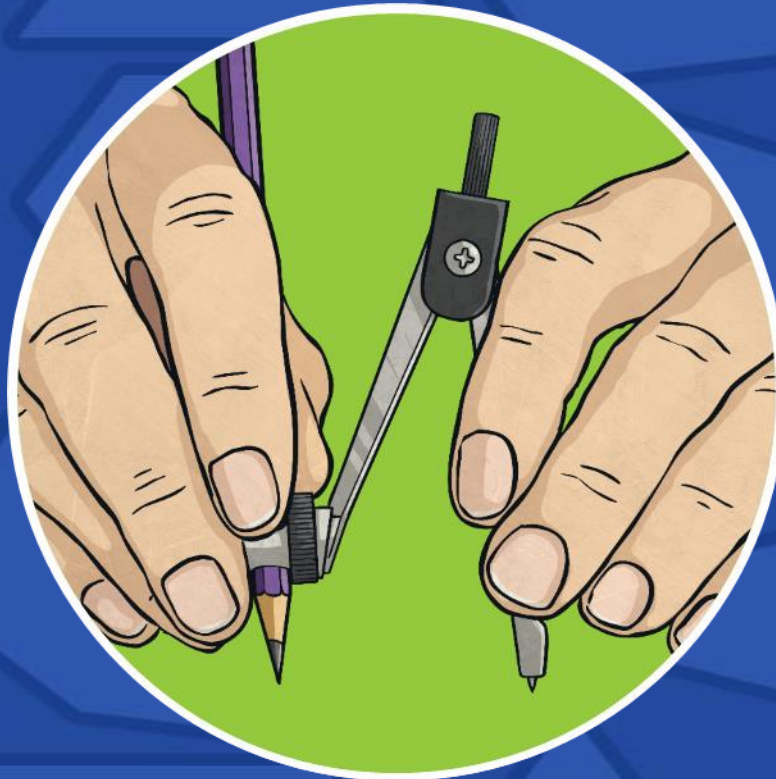
It is not to scale.

Work out the value of angle z .



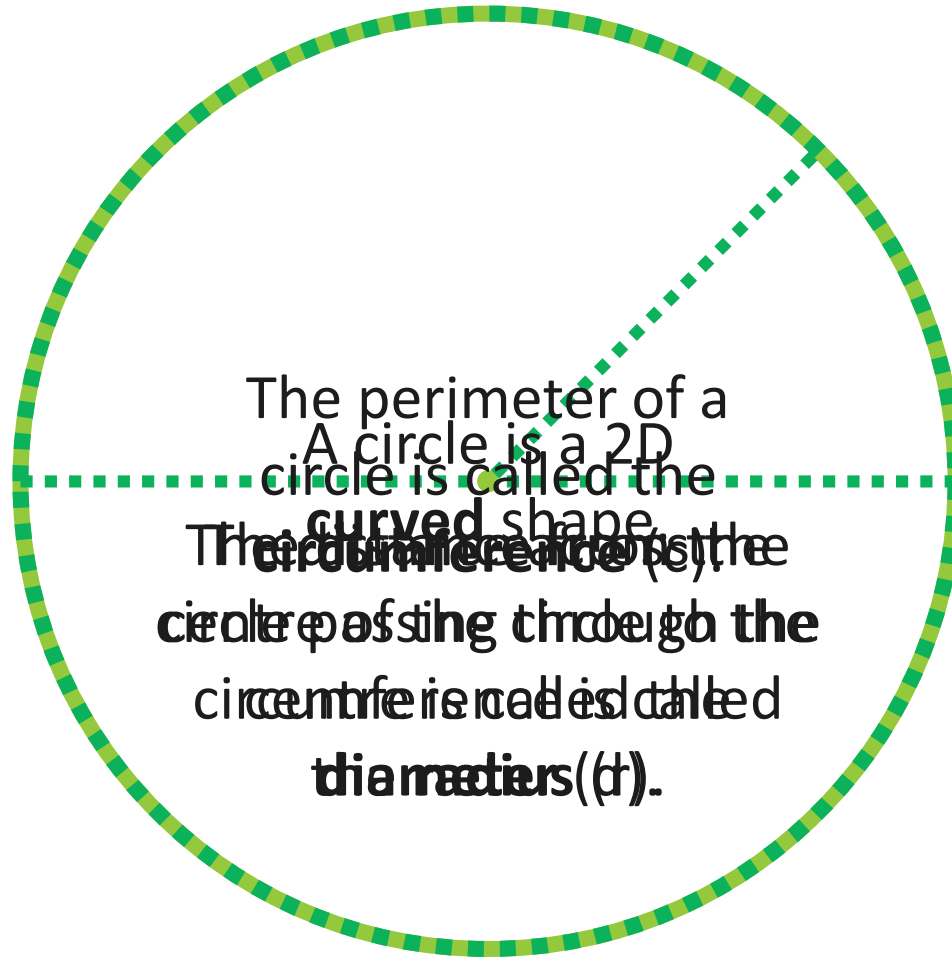
26.4.22 Mrs Lund

LO: To identify and label the parts of a circle.



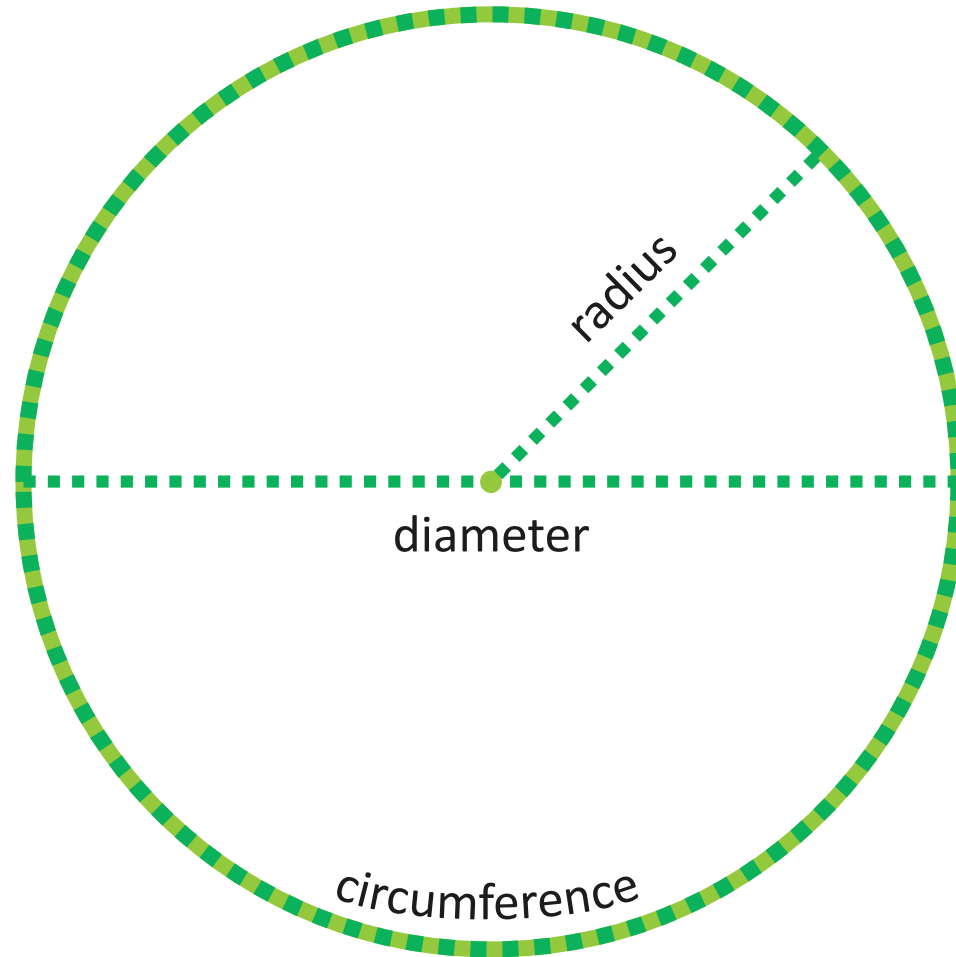
New learning!

All About the Circle



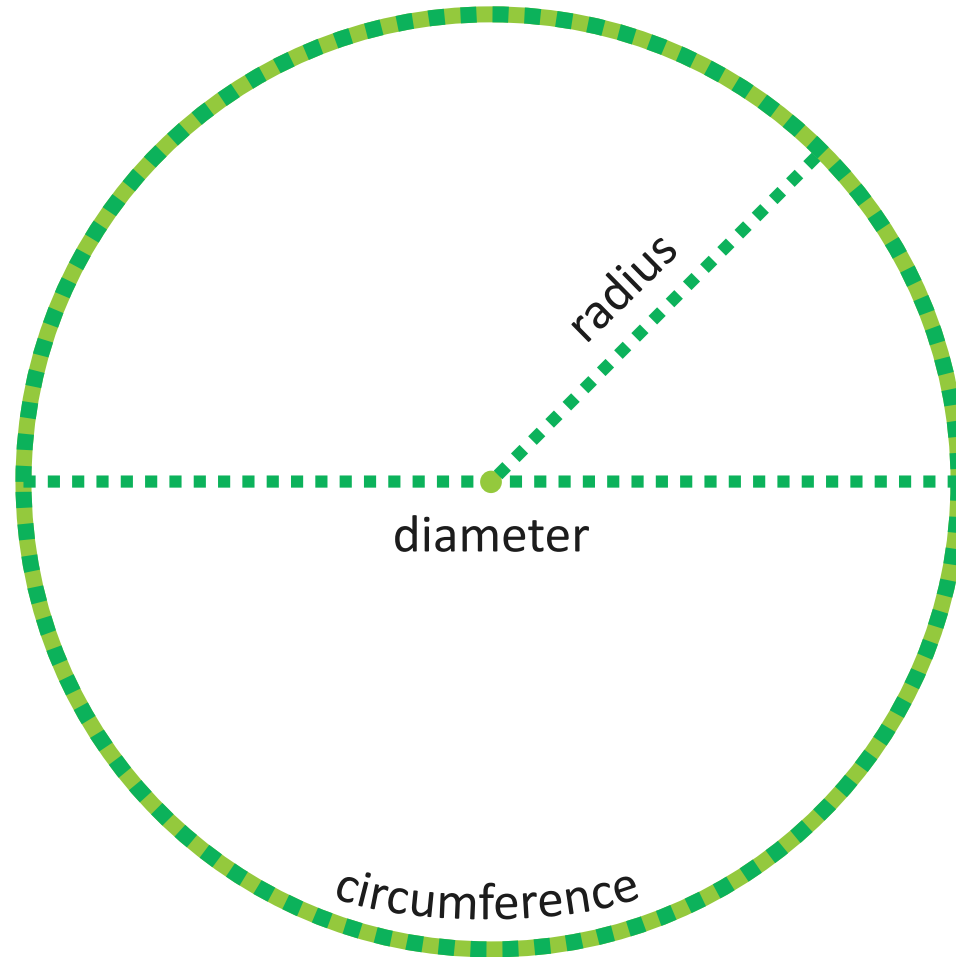
New learning! All About the Circle

Here are the **circumference** (c), **radius** (r) and **diameter** (d) labelled on the same circle.



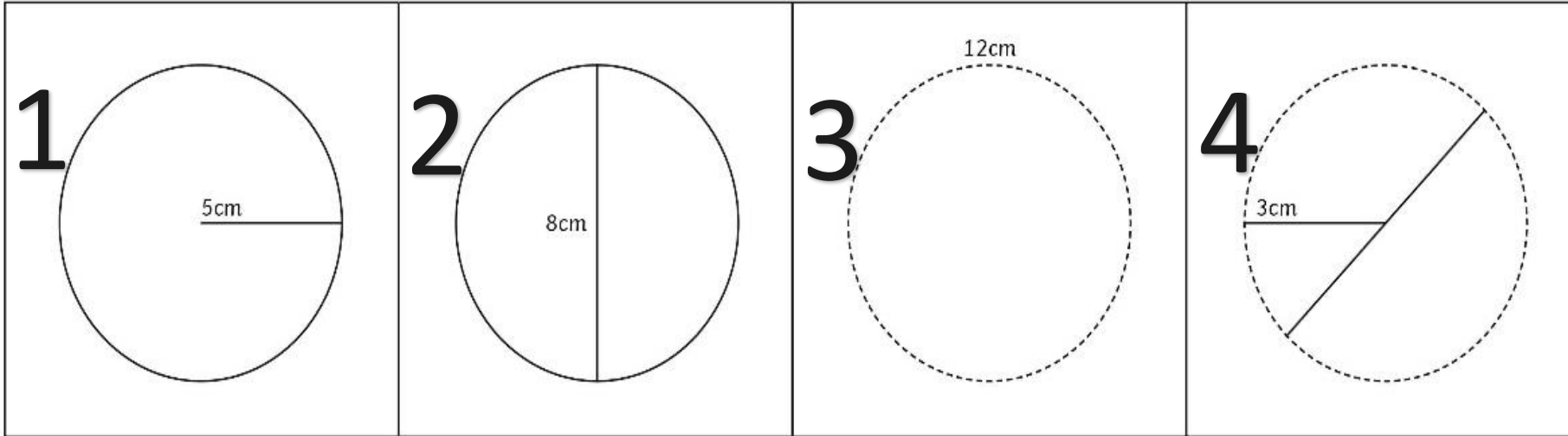
New learning! All About the Circle

Here are the **circumference** (c), **radius** (r) and **diameter** (d) labelled on the same circle.



Circle Riddles

Work with your partner to match the riddle descriptions to the correct labelled circle.

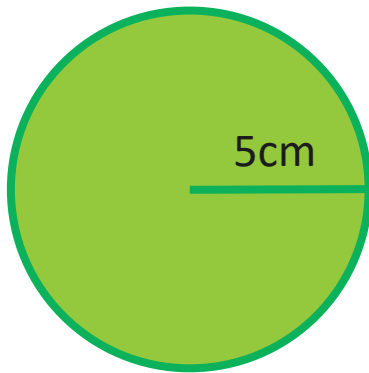


A My radius is 3cm Which circle am I?	B My diameter is 10cm. Which circle am I?	C My diameter is 8cm Which circle am I?	D My circumference is 12cm. Which circle am I?
---	---	---	--

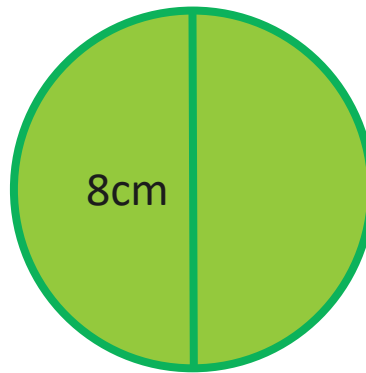
Circle Riddles



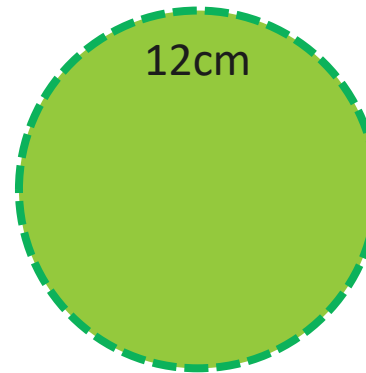
Did you match the riddle descriptions to the correct labelled circle?



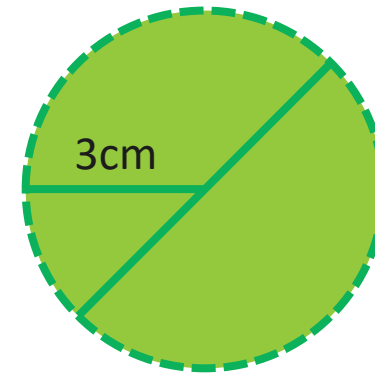
**My
diameter
is 10cm.**



**My
diameter
is 8cm.**



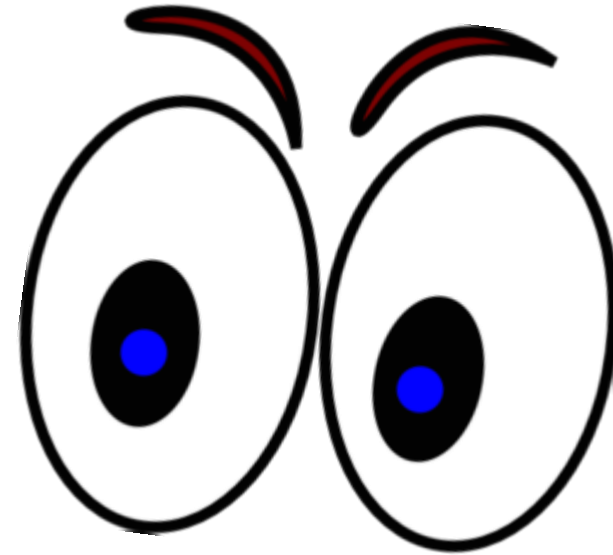
**My
circumference
is 12cm.**



**My radius
is 3cm.**

<https://corbettmathsprimary.com/2018/06/01/parts-of-the-circle-video/>

Useful video to watch!



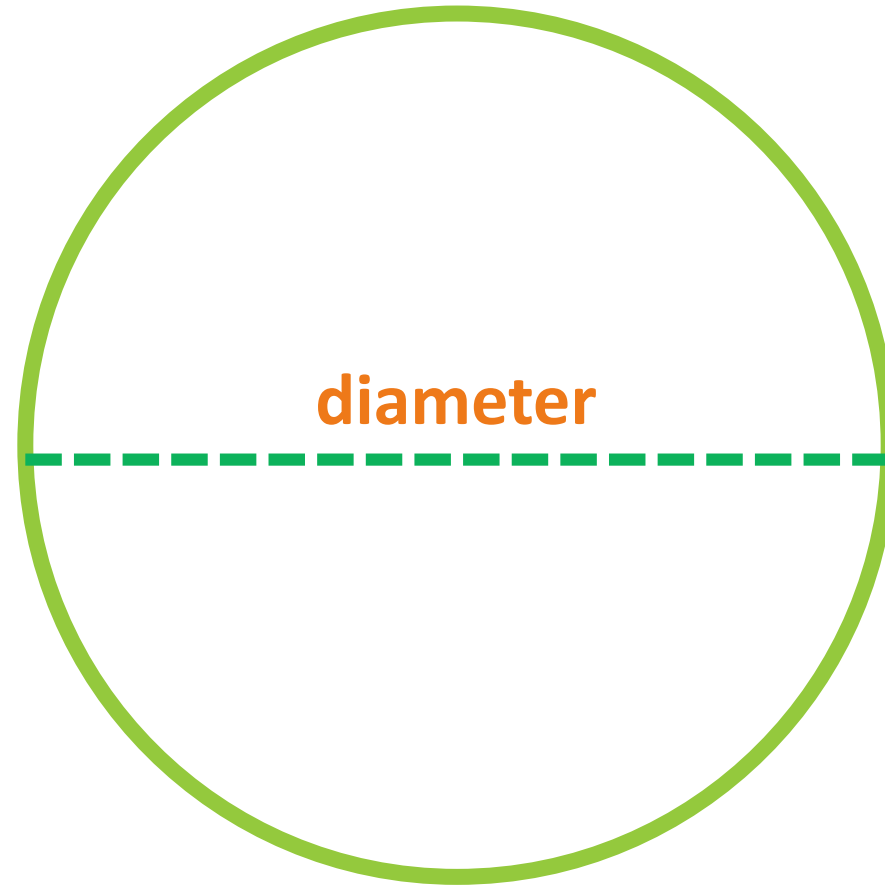
Over to you questions...

RECAP!

Parts of a Circle



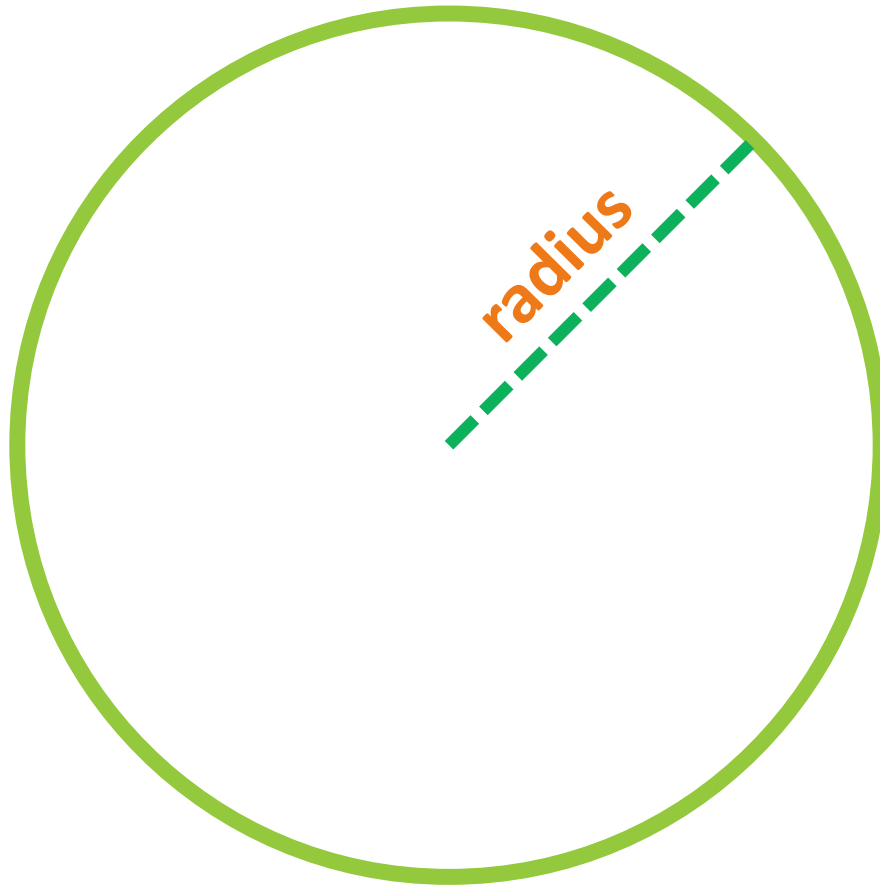
Which part of the circle is labelled?



Parts of a Circle

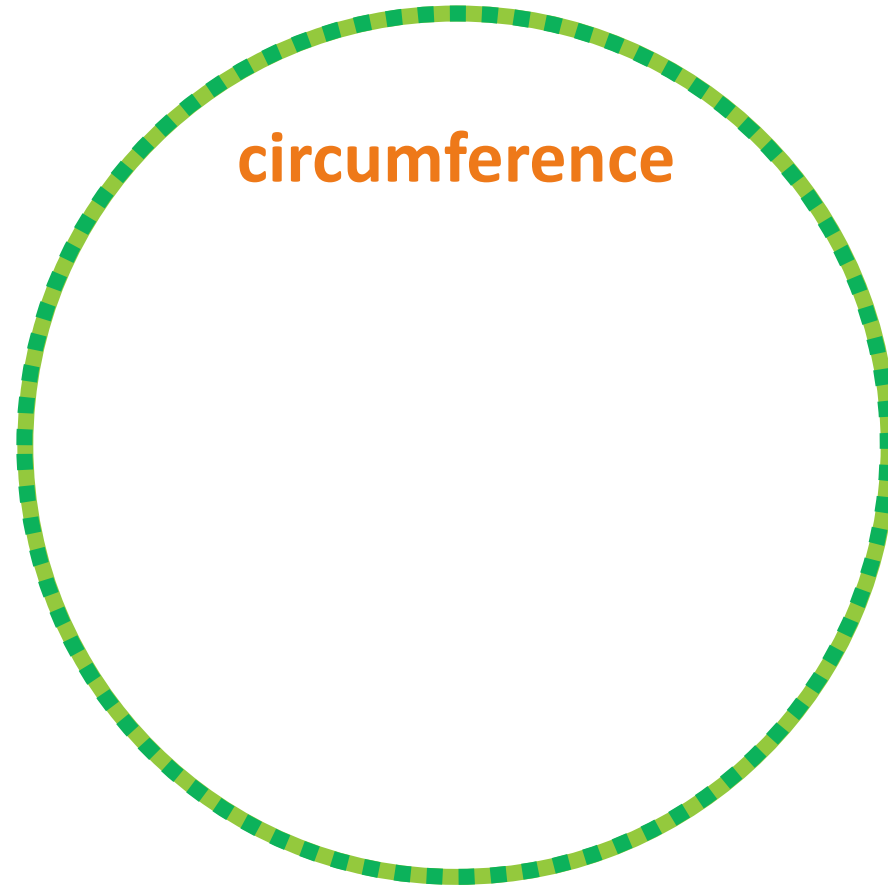


Which part of the circle is labelled?



Parts of a Circle

Which part of the circle is labelled?



Tuesday

Daily Maths Meeting



<https://www.bbc.co.uk/bitesize/topics/zm49q6f/articles/z99jpbk>

Mode

Median



What does 'Range' mean?



<https://www.mathsisfun.com/data/range.html>

The Mean

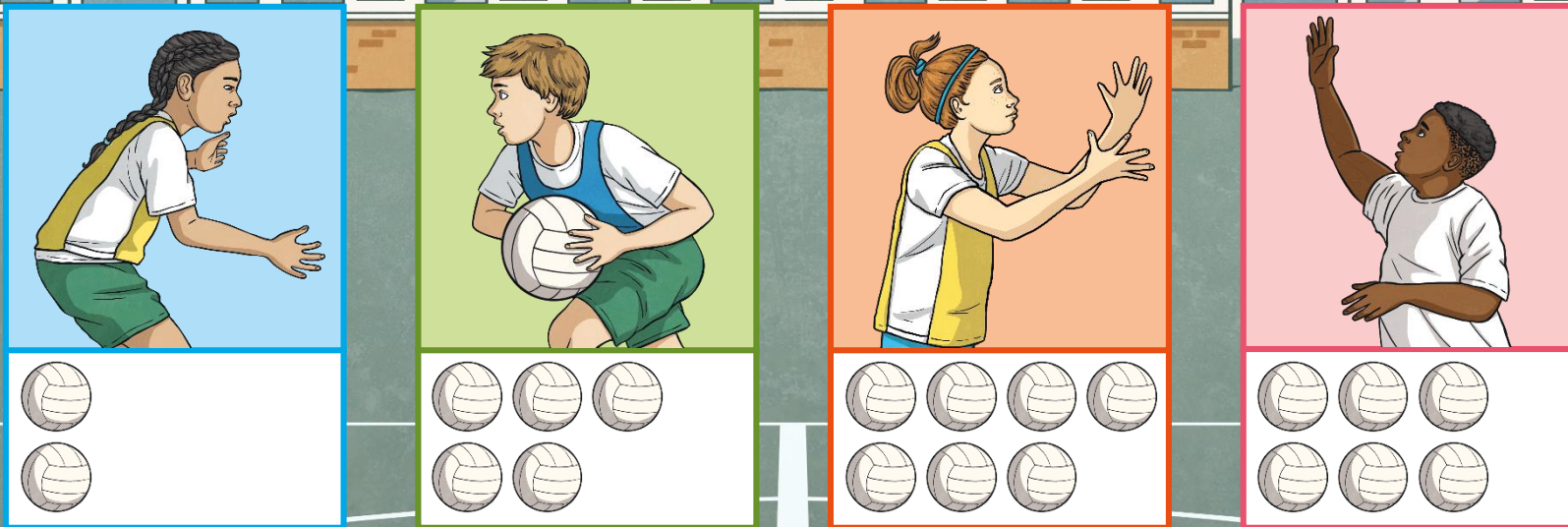
Diving

The mean is the size of each part when a quantity is shared equally.



mean = sum of numbers in the set $\div$ the number of values that make up the set.

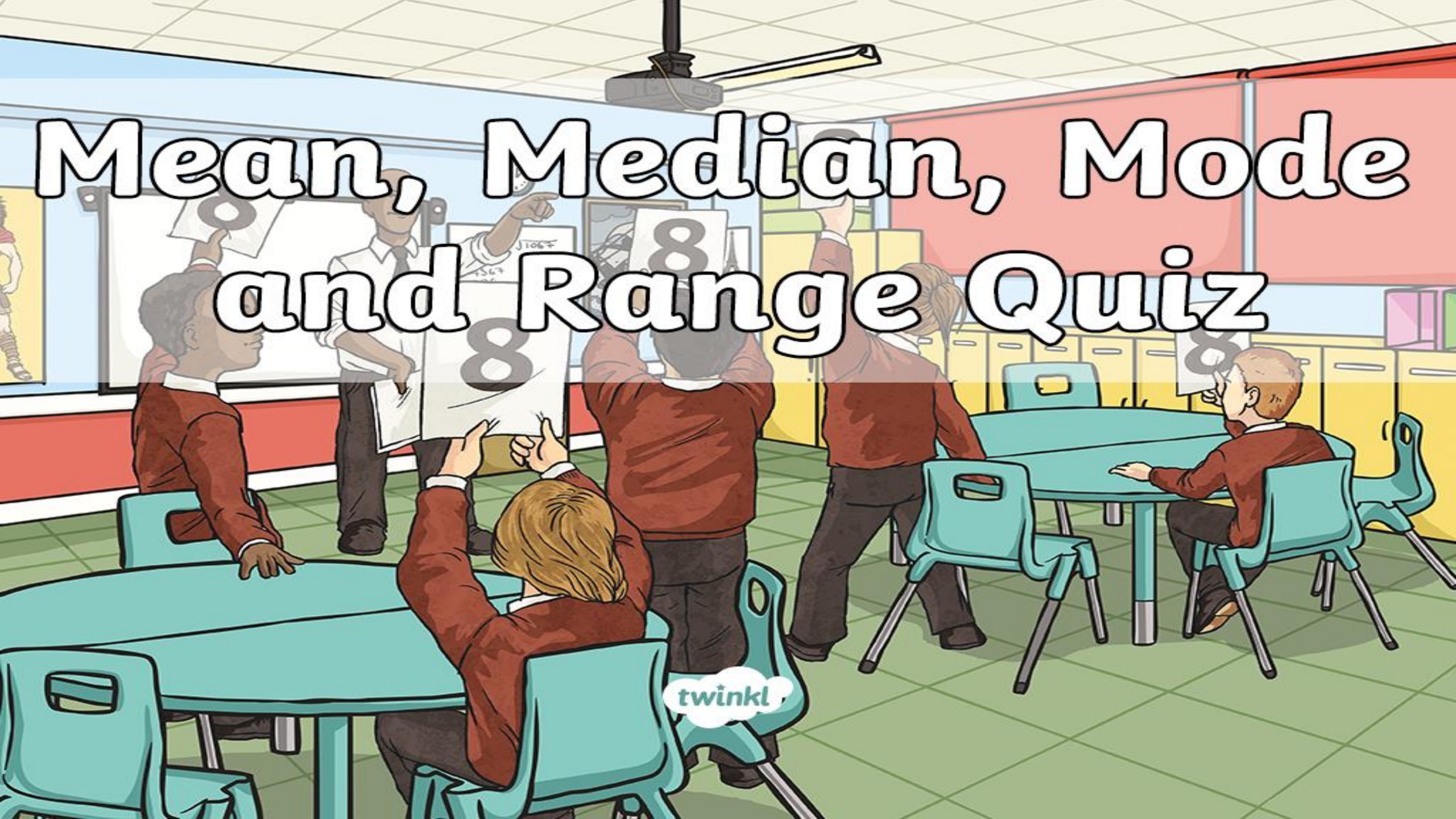
These pictures show the number of goals each child scored in a netball tournament.

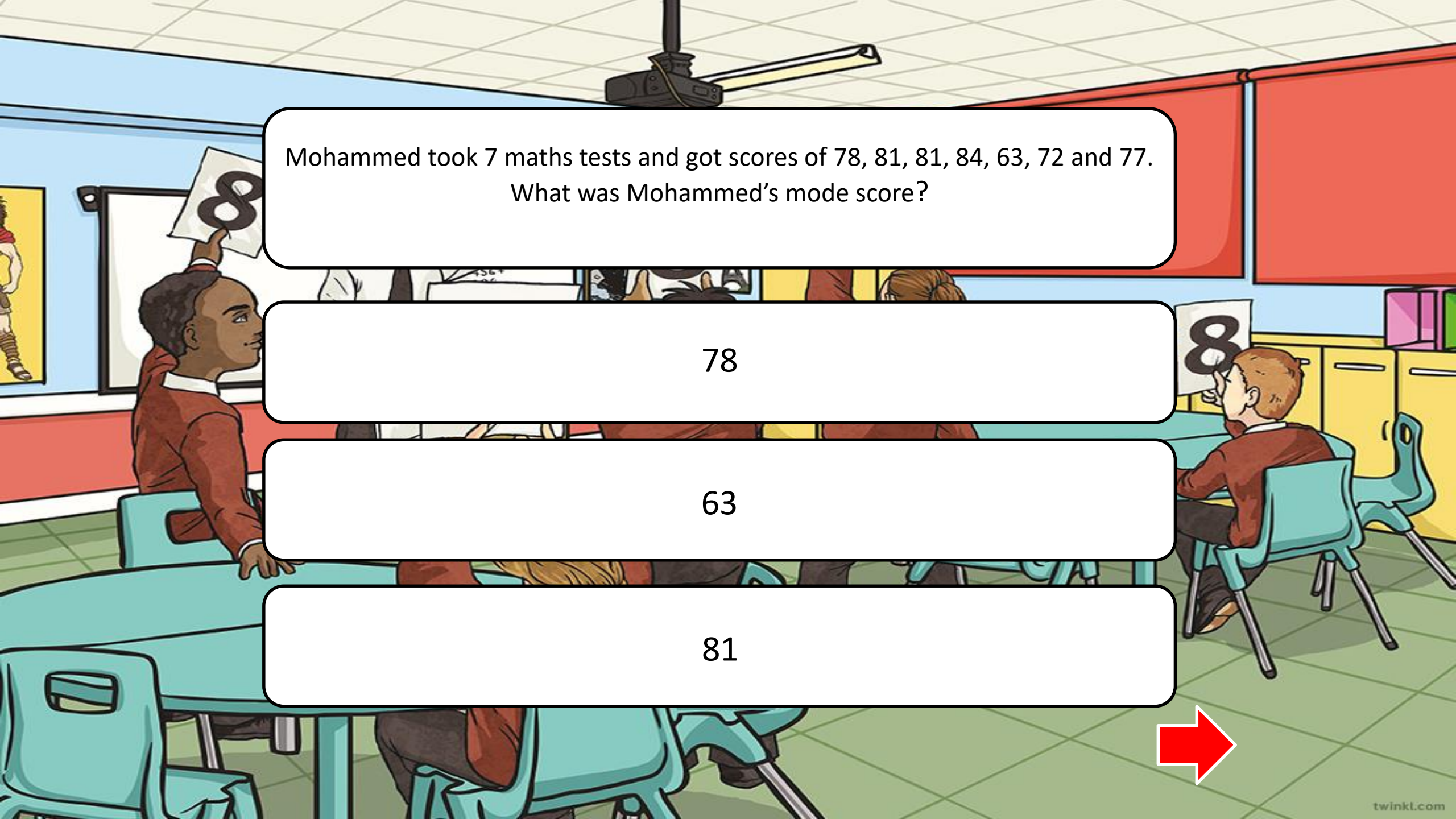


Find the mean number of goals scored.

$2 + 5 + 7 + 6 = 20$ $20 \div 4 = 5$
The mean number of goals scored was 5.

Mean, Median, Mode and Range Quiz

An illustration of a classroom scene. A teacher, a man in a white shirt and tie, stands at the front holding a paper with the number 8. Several students in brown school uniforms are seated at teal tables. Some students are holding up papers with the number 8. The background features a red wall, yellow lockers, and a whiteboard. The floor is green and checkered. A large title is overlaid on the scene.



Mohammed took 7 maths tests and got scores of 78, 81, 81, 84, 63, 72 and 77.
What was Mohammed's mode score?

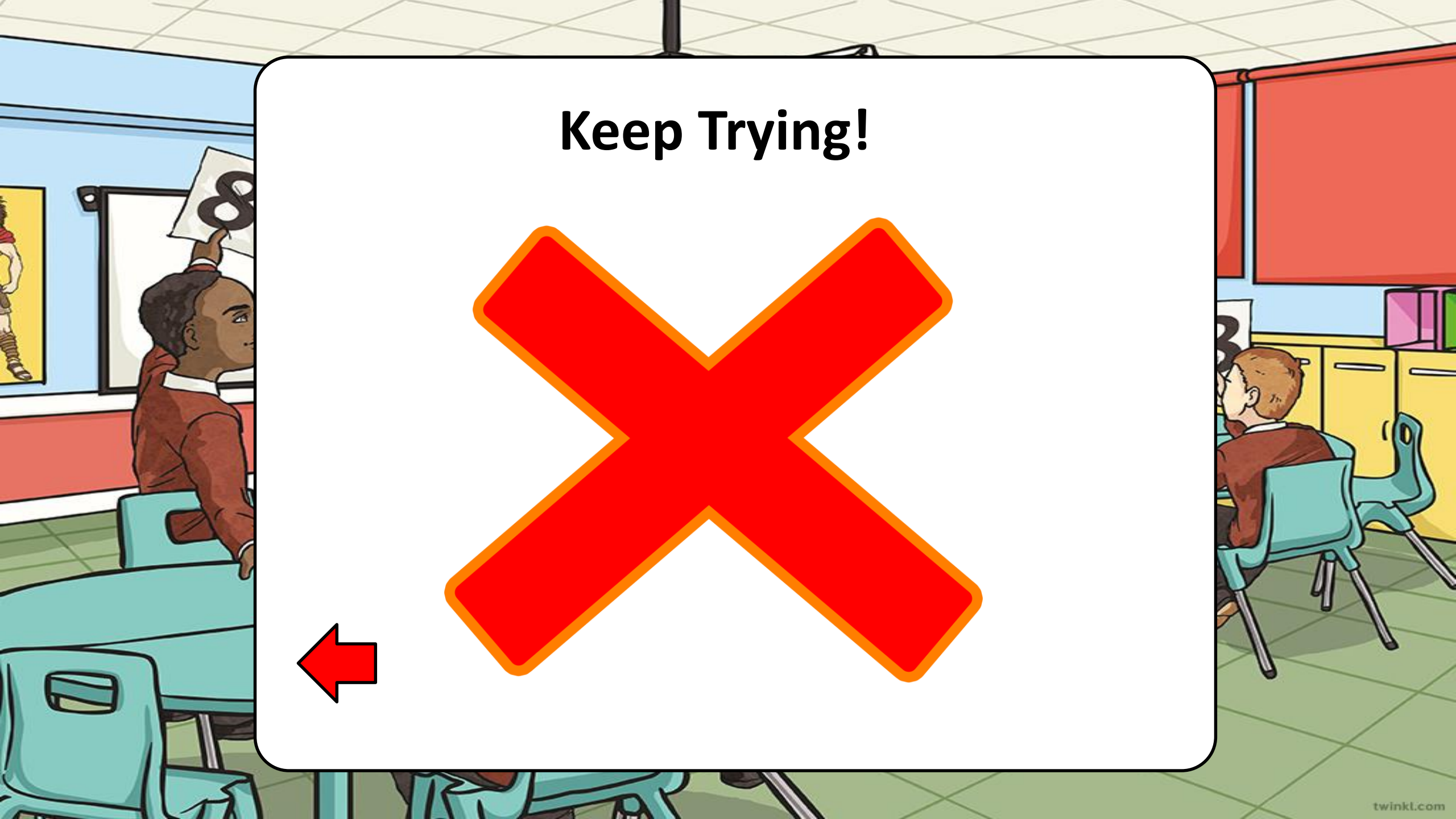
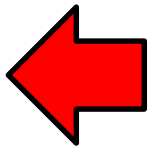
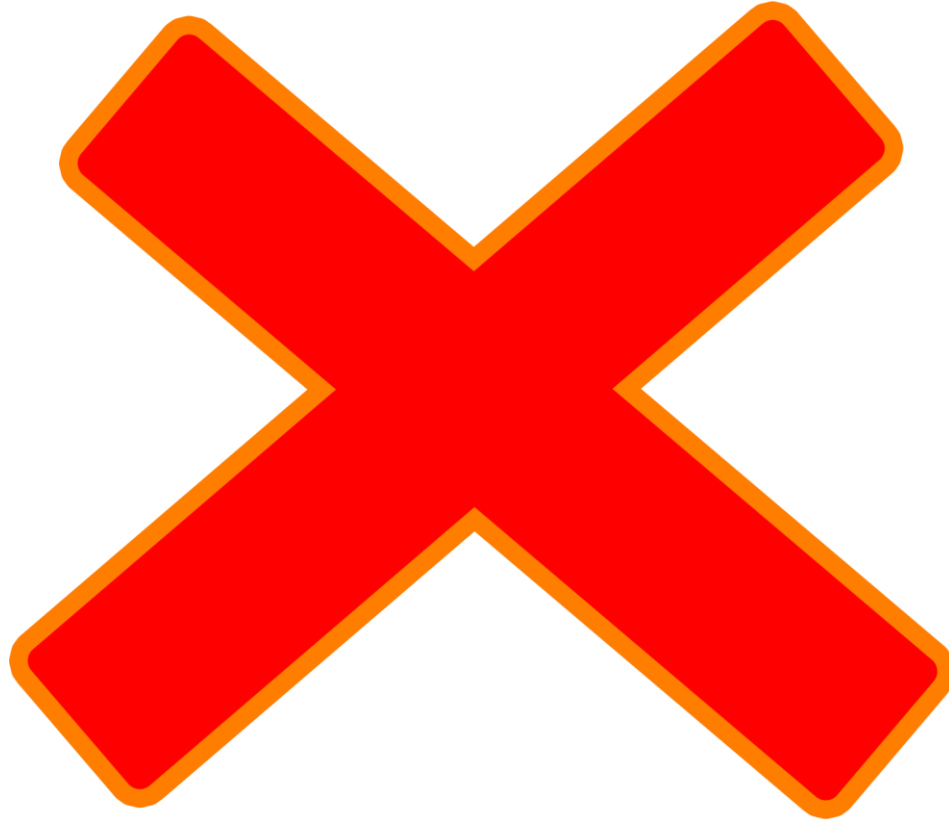
78

63

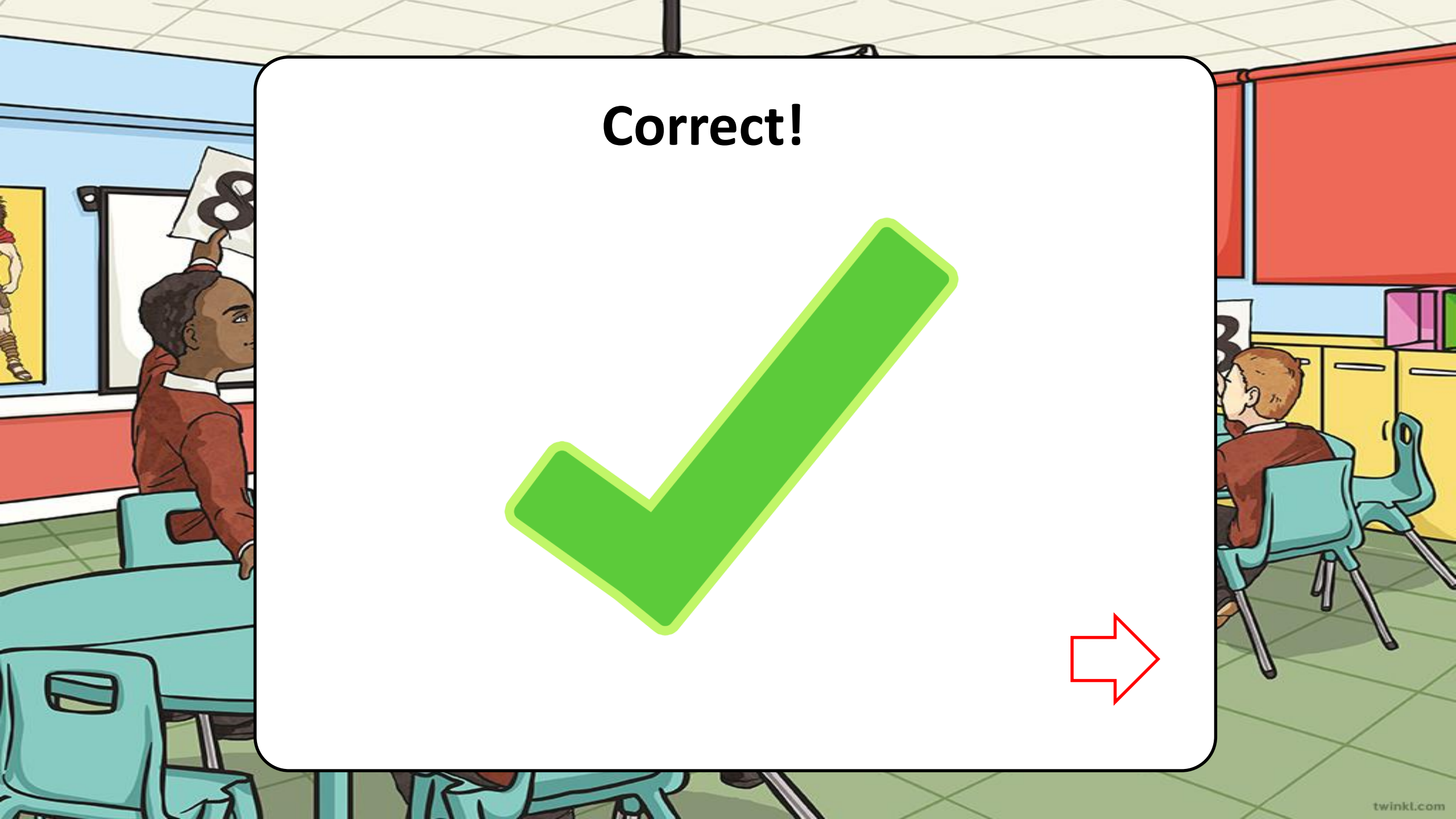
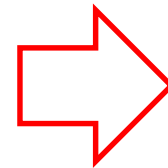
81

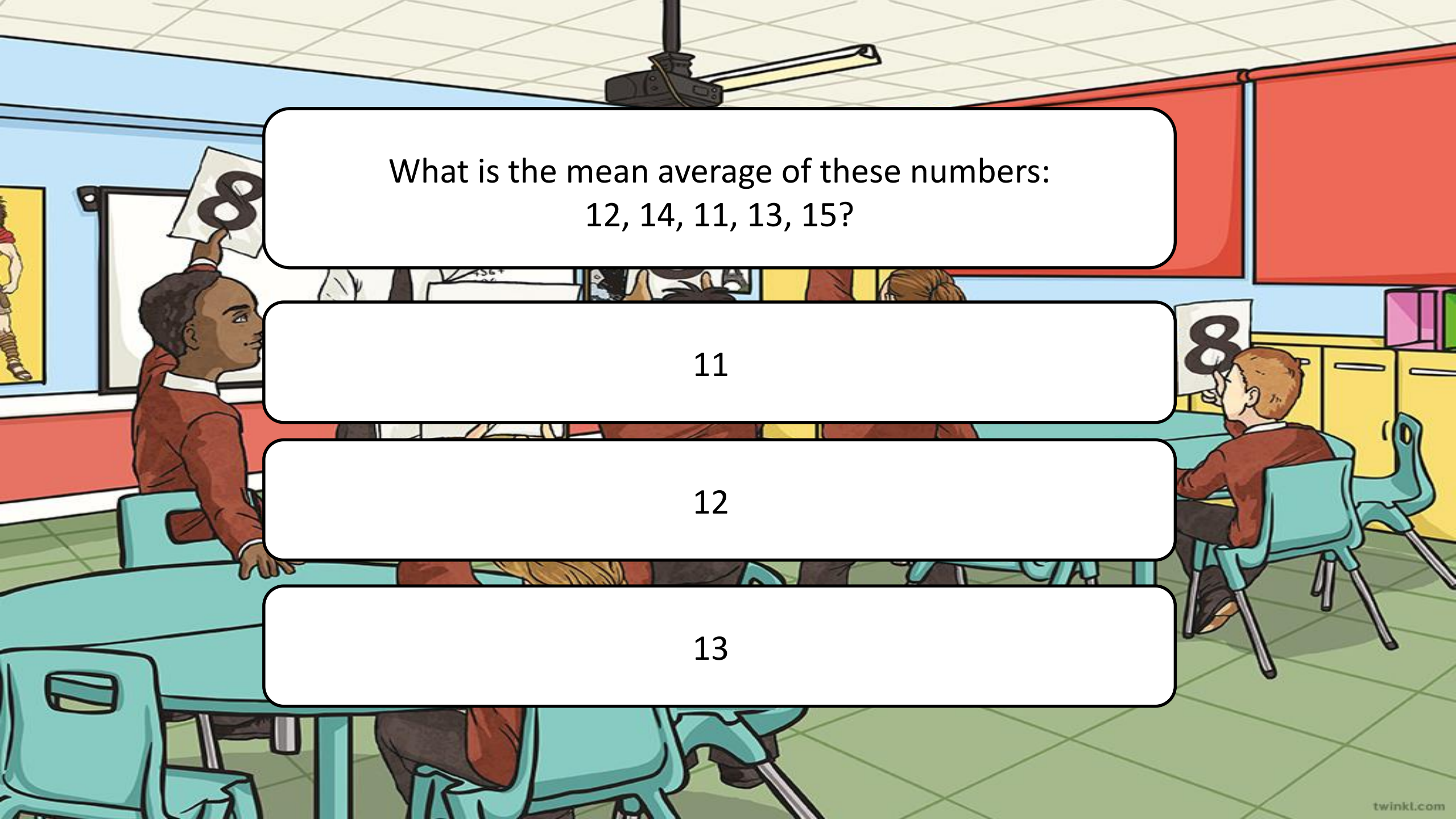


Keep Trying!



Correct!





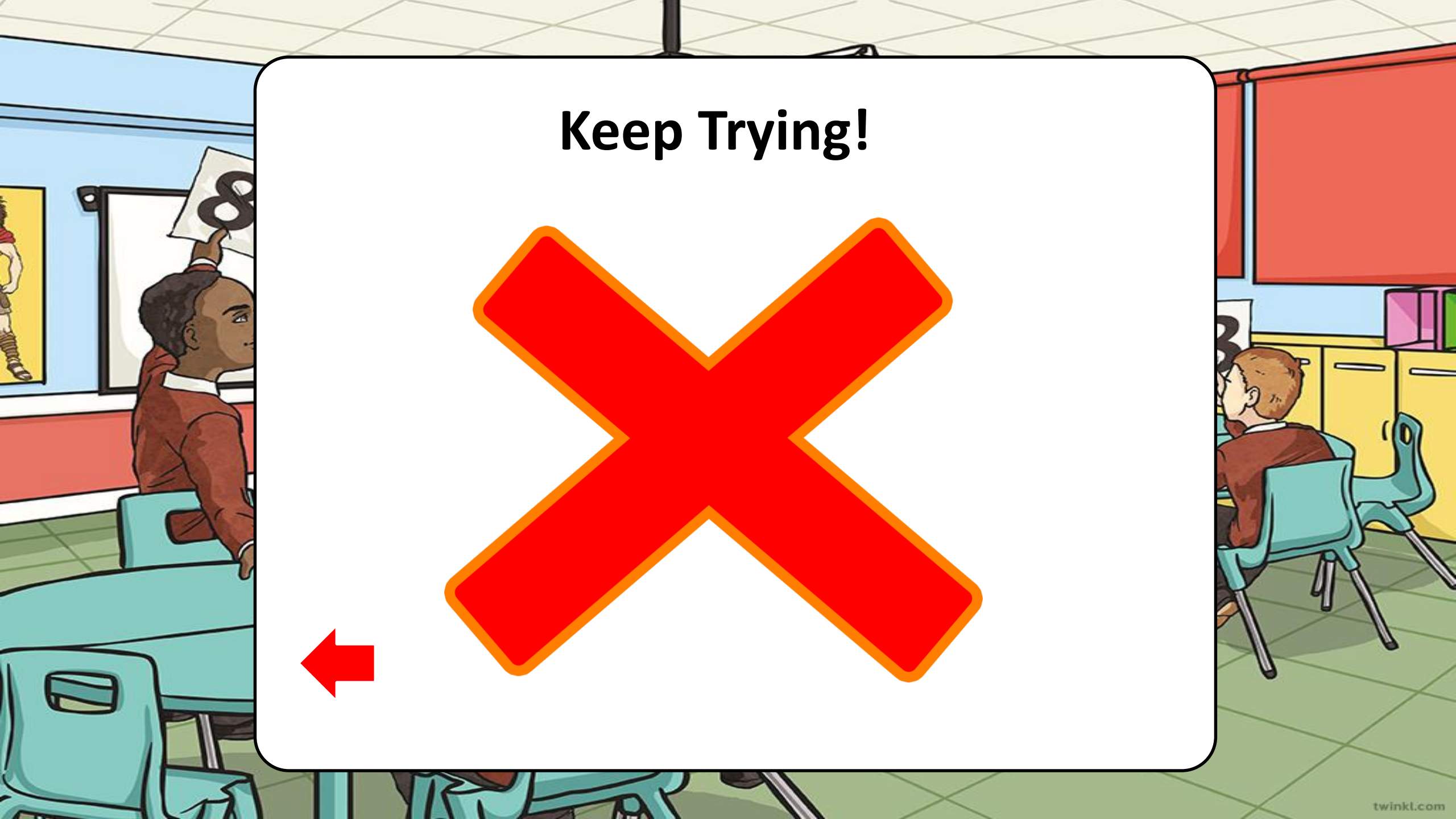
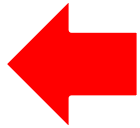
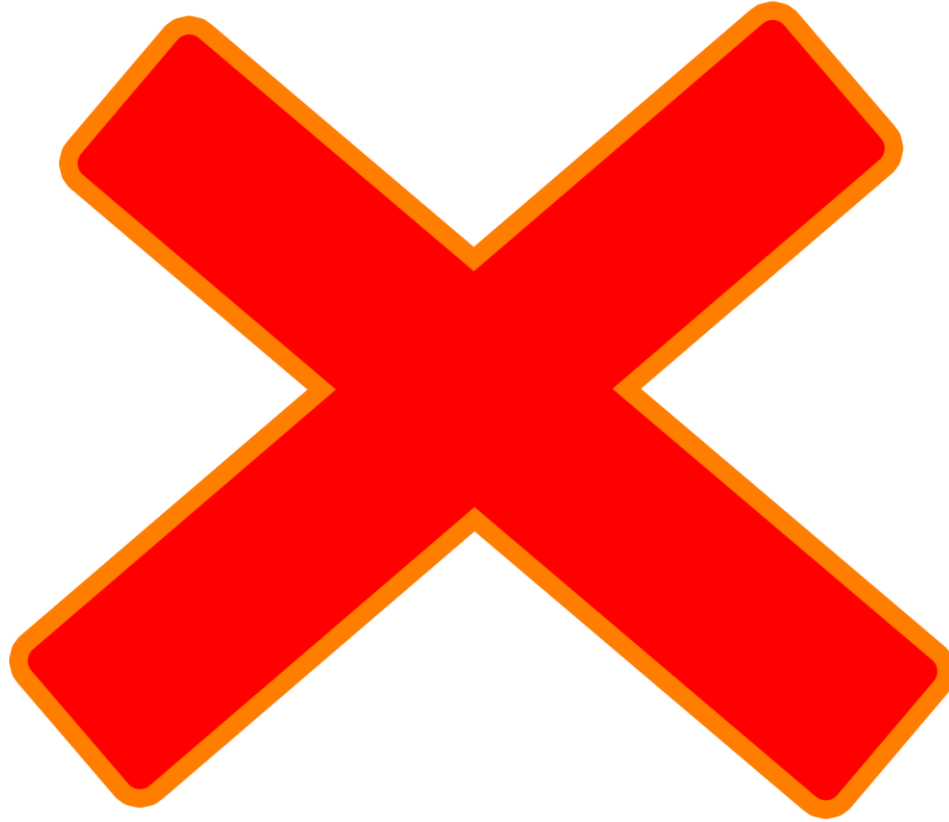
What is the mean average of these numbers:
12, 14, 11, 13, 15?

11

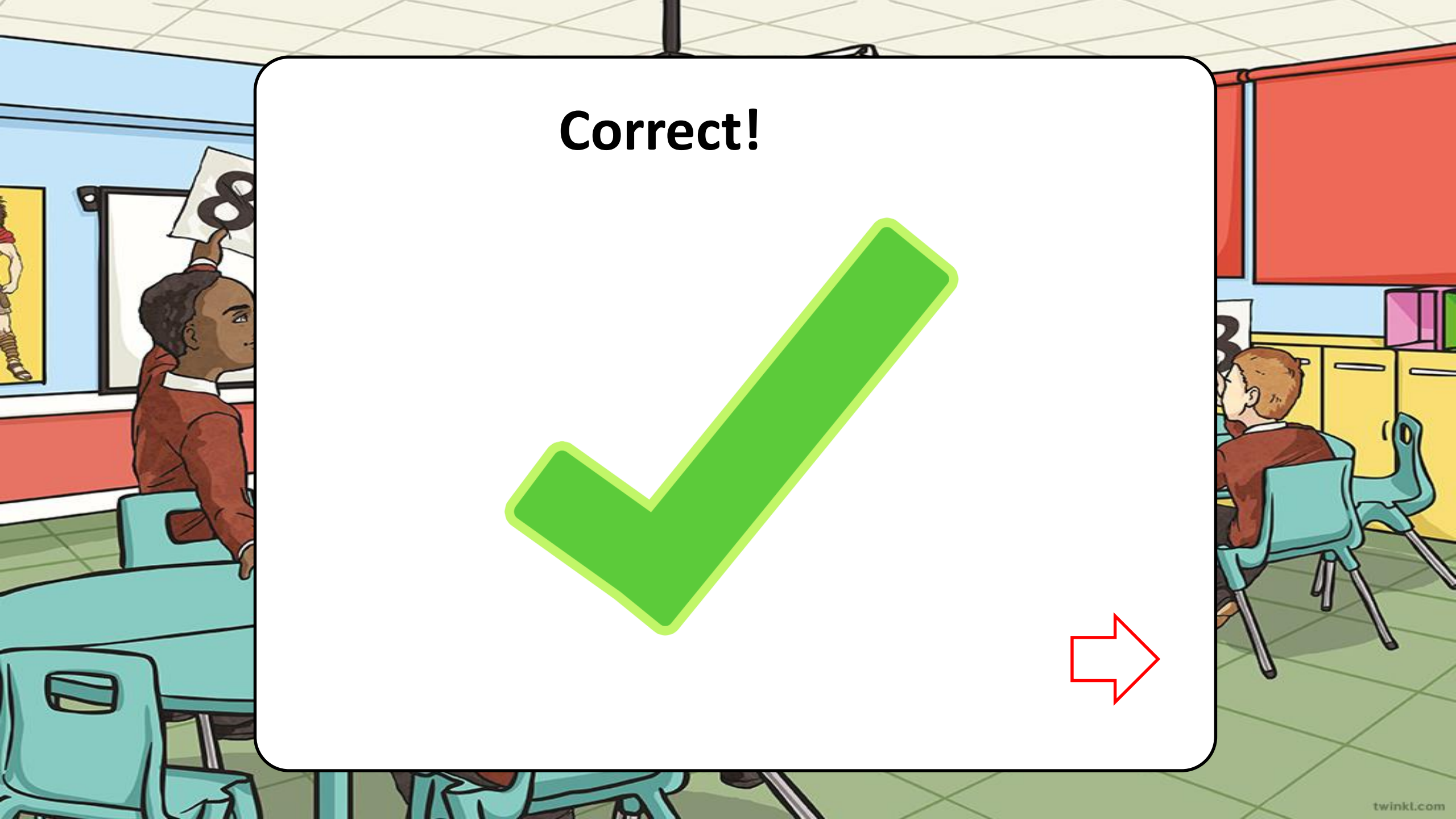
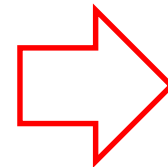
12

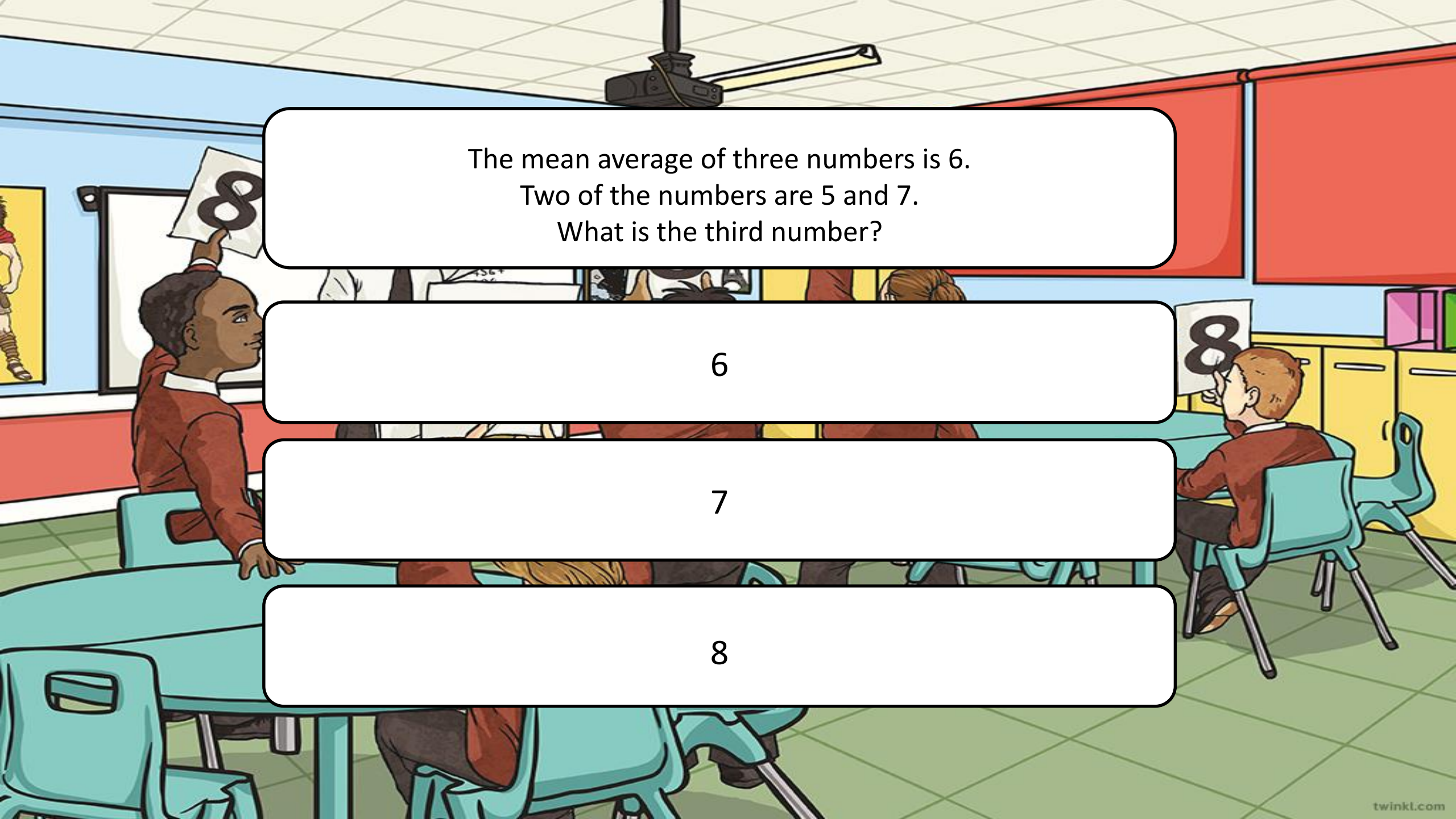
13

Keep Trying!



Correct!





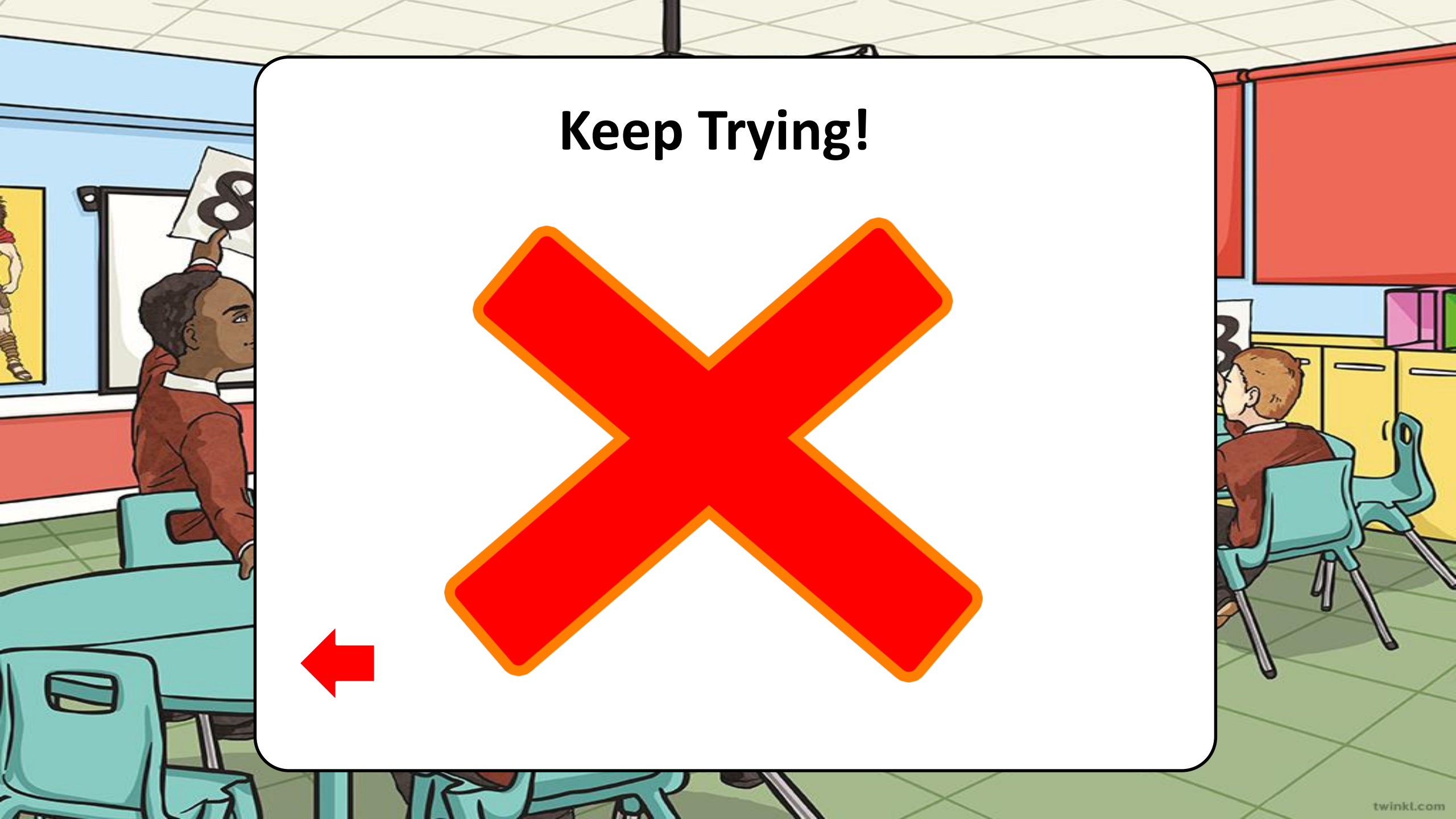
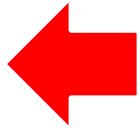
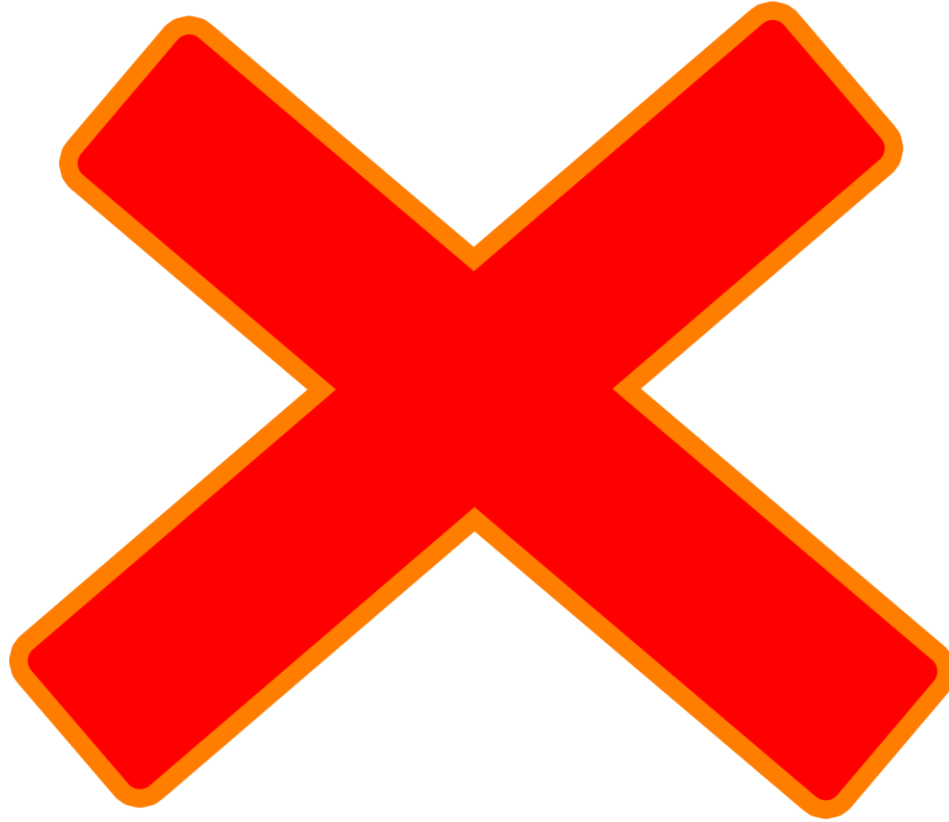
The mean average of three numbers is 6.
Two of the numbers are 5 and 7.
What is the third number?

6

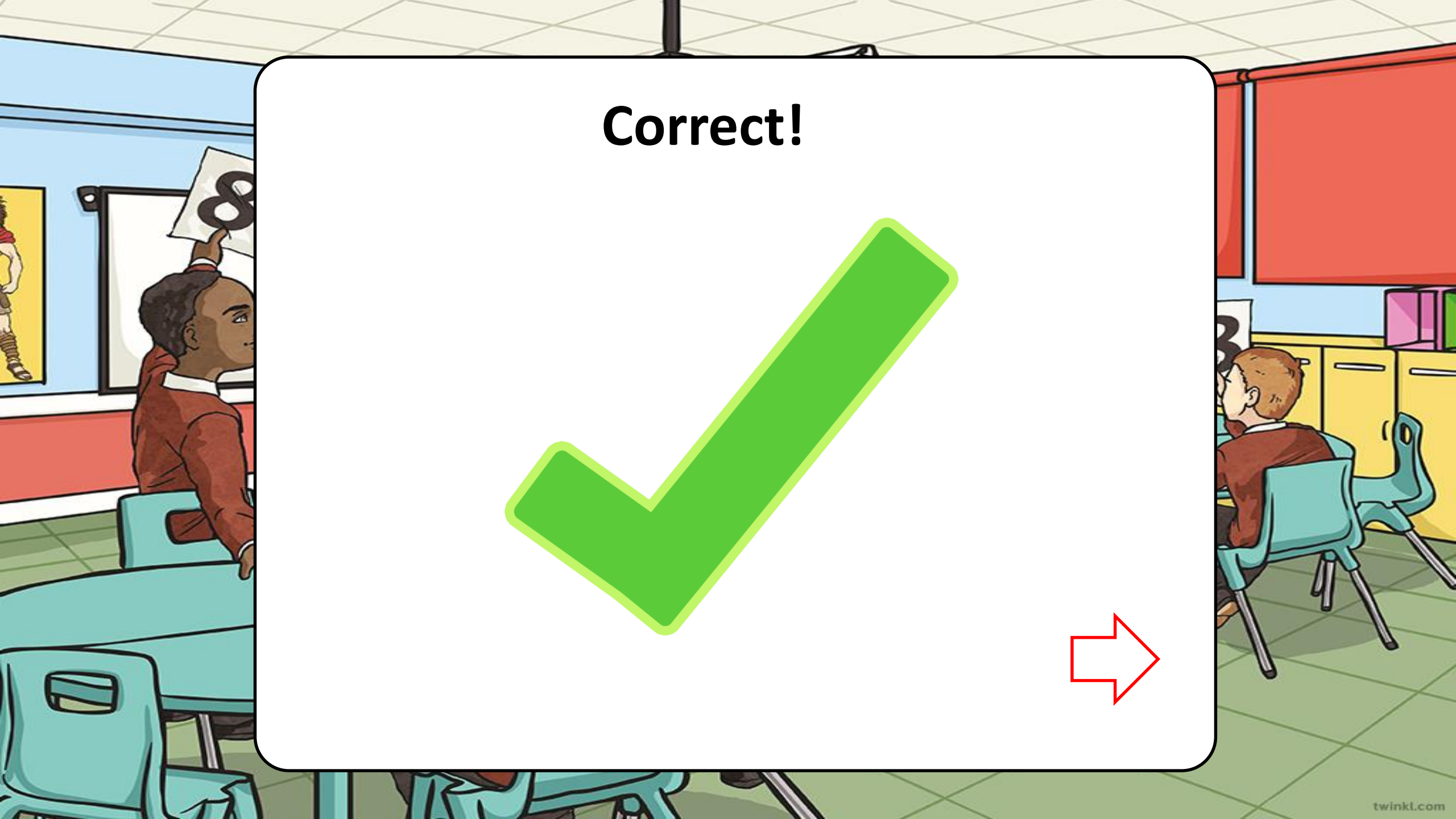
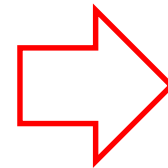
7

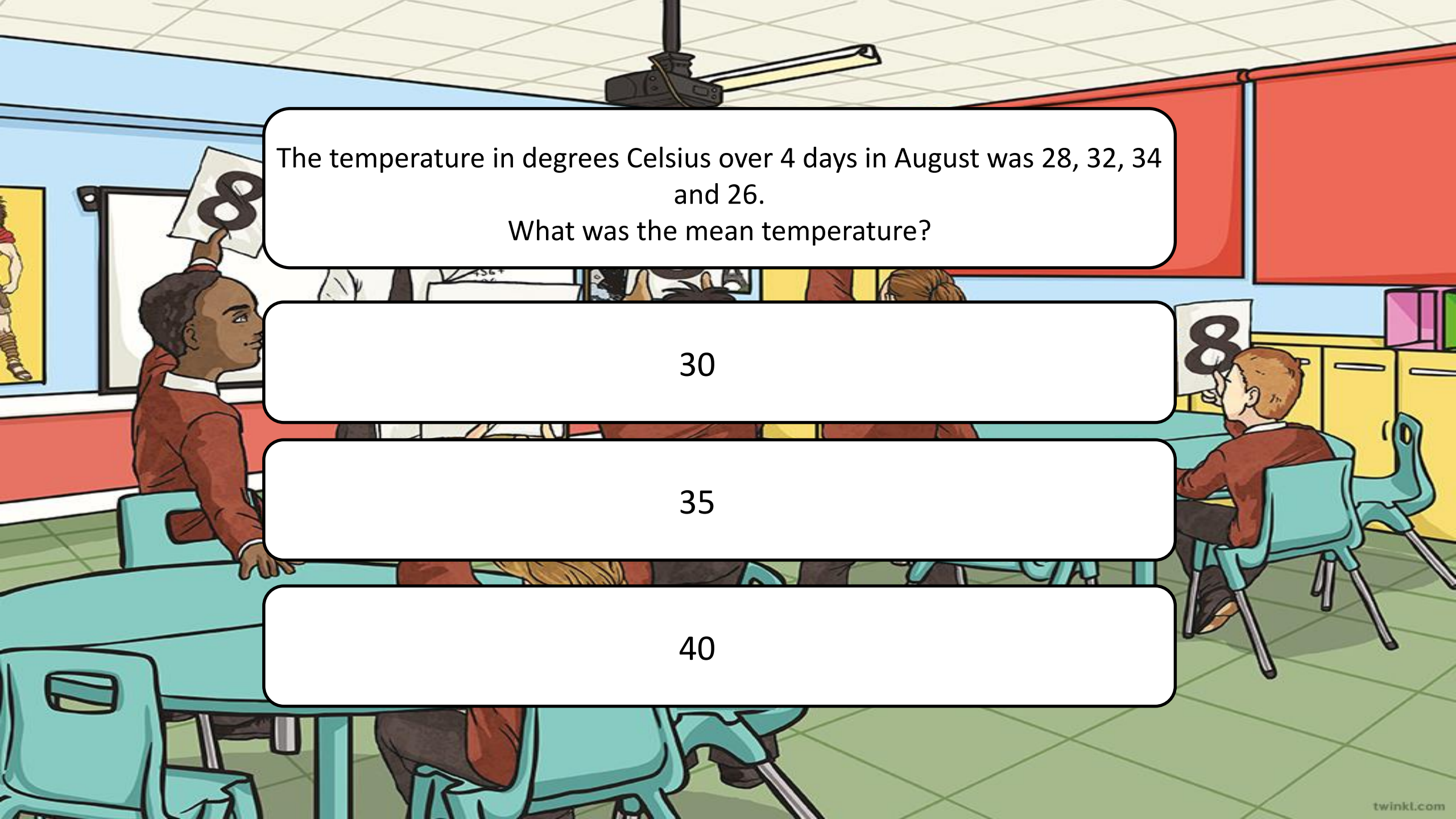
8

Keep Trying!



Correct!





The temperature in degrees Celsius over 4 days in August was 28, 32, 34 and 26.

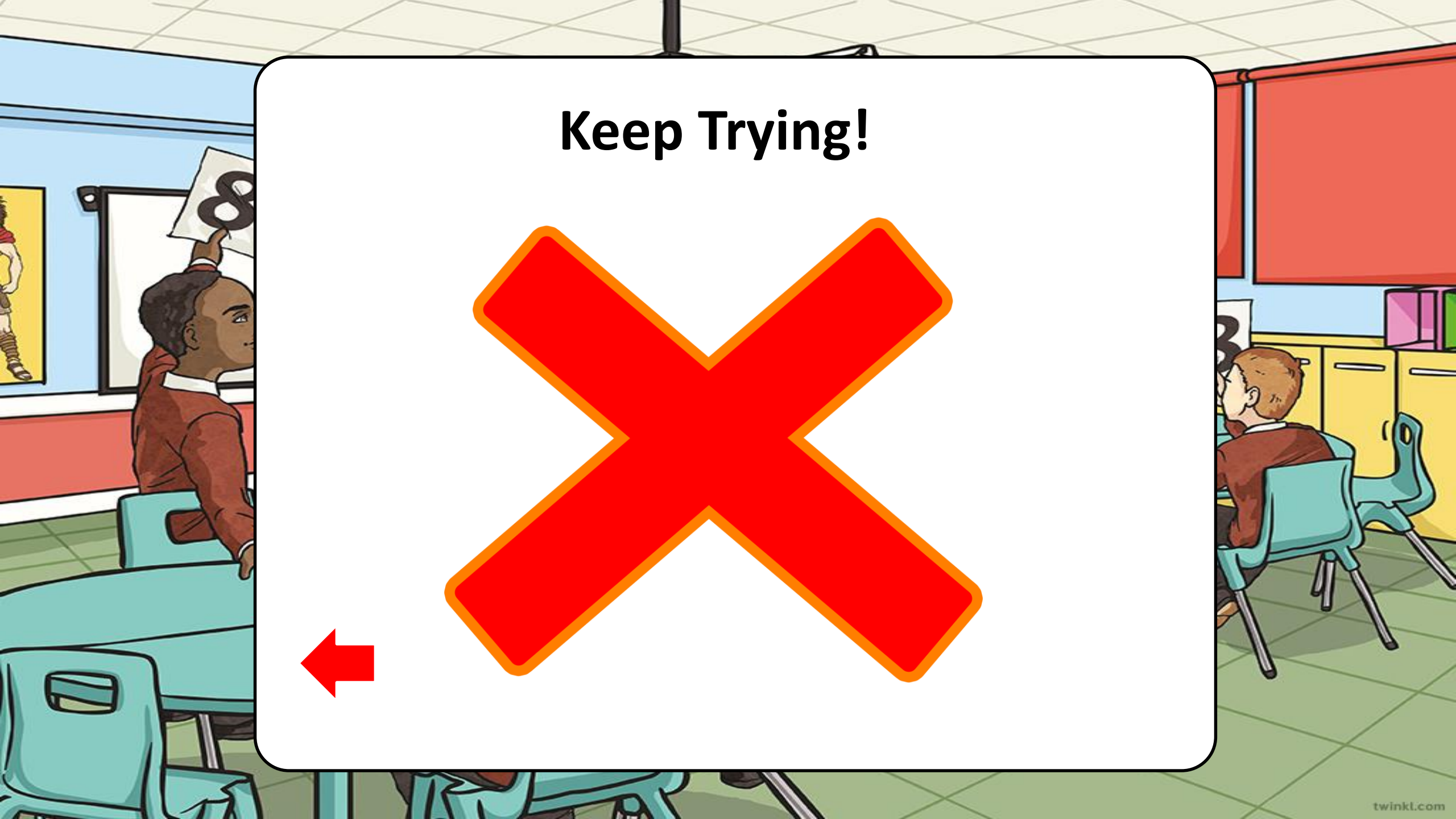
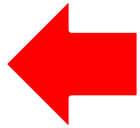
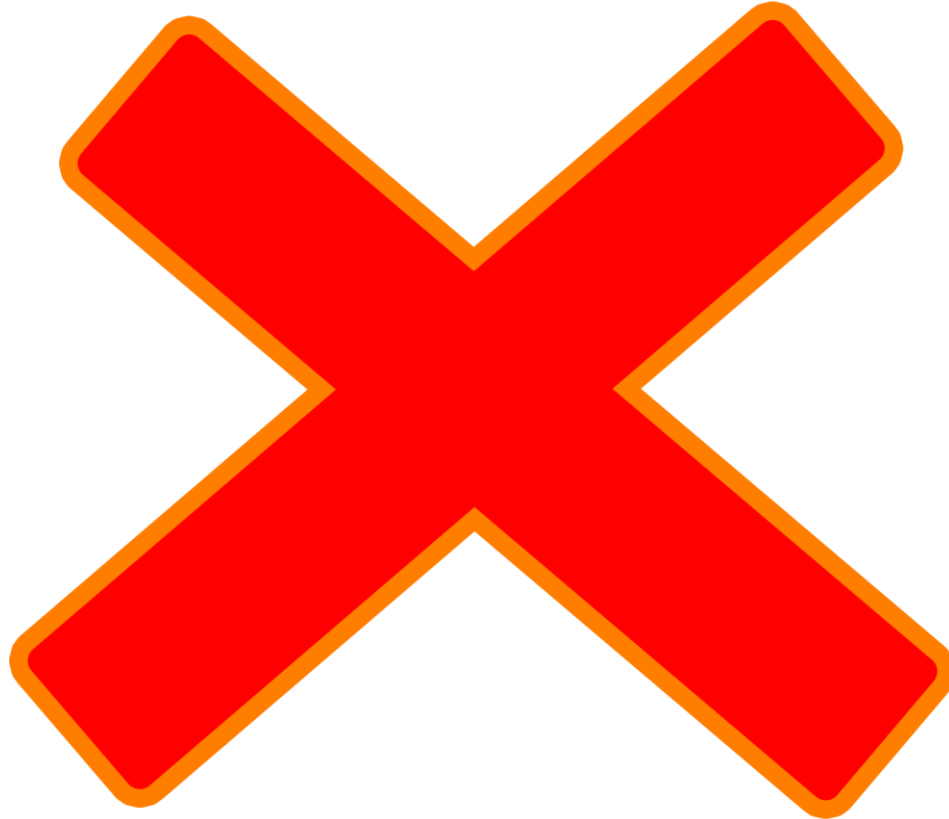
What was the mean temperature?

30

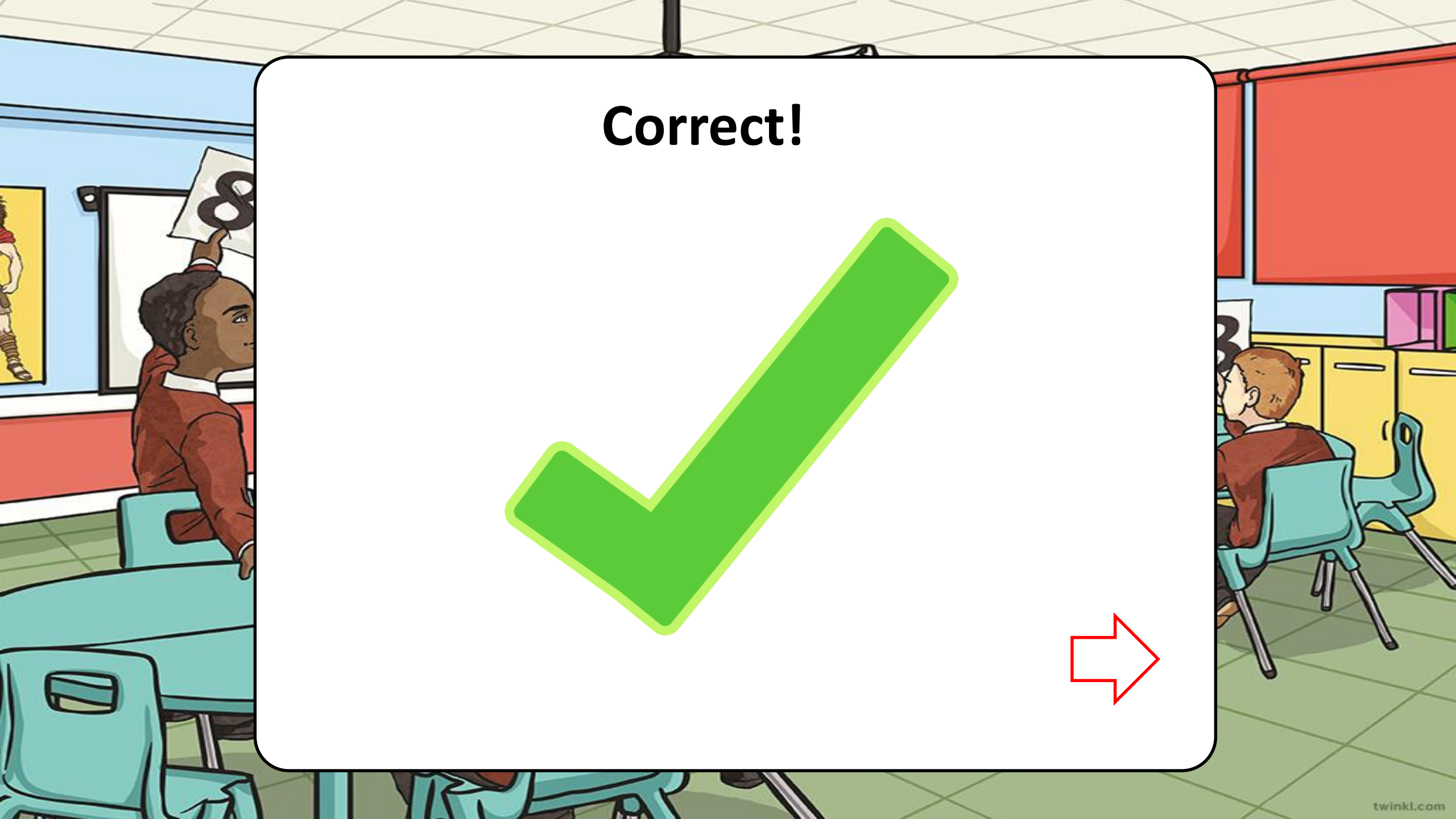
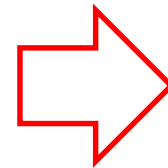
35

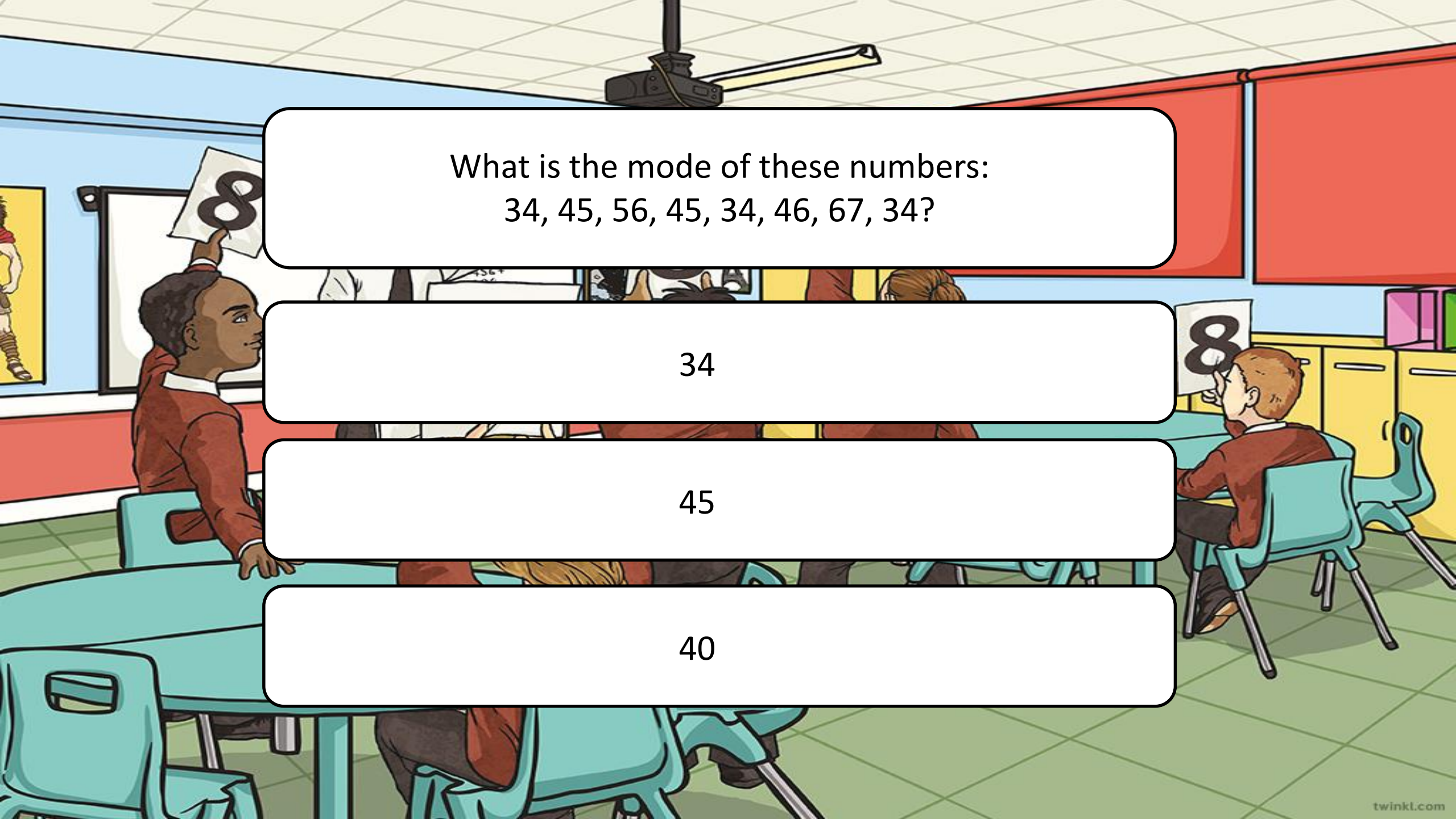
40

Keep Trying!



Correct!





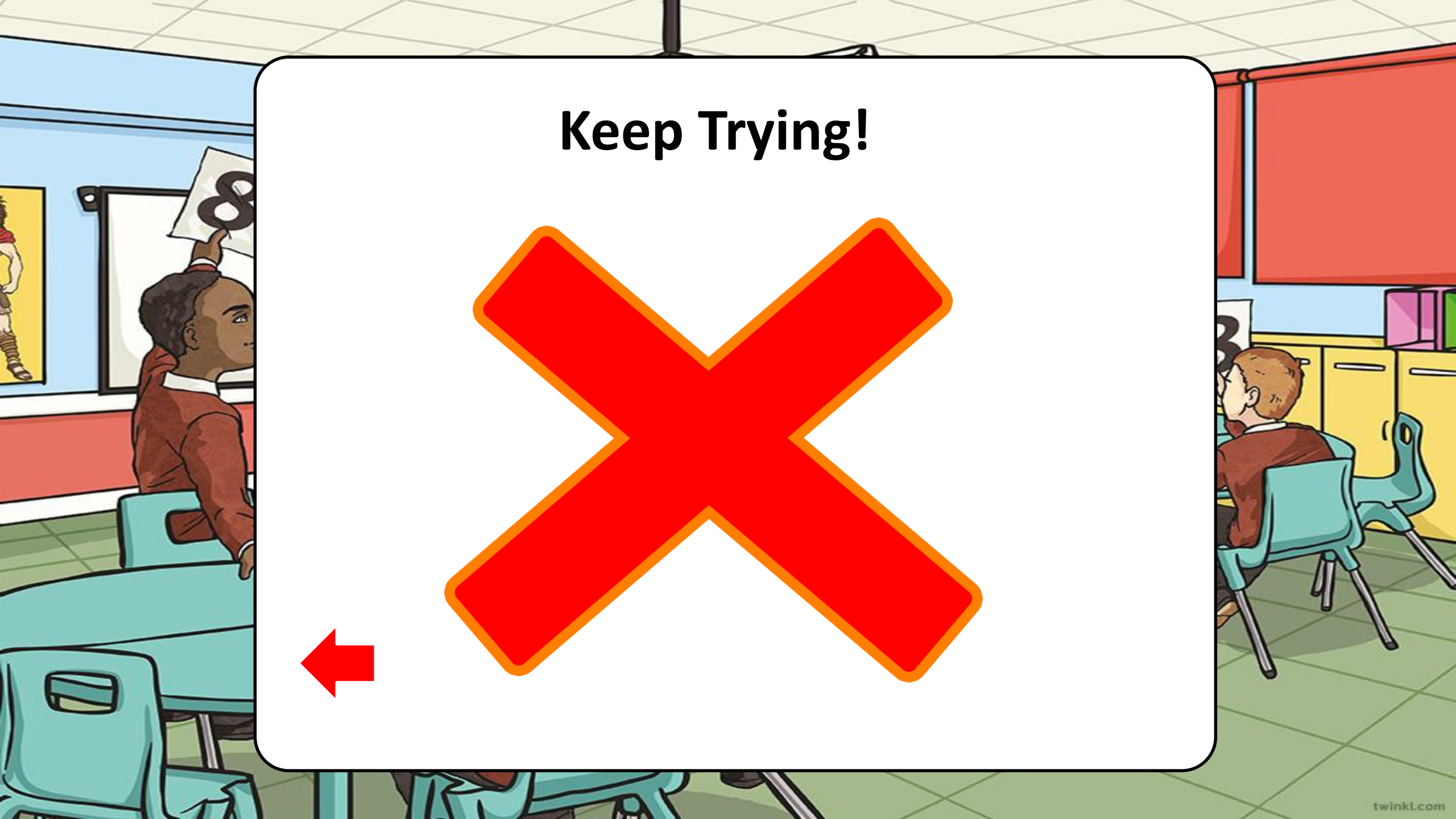
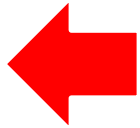
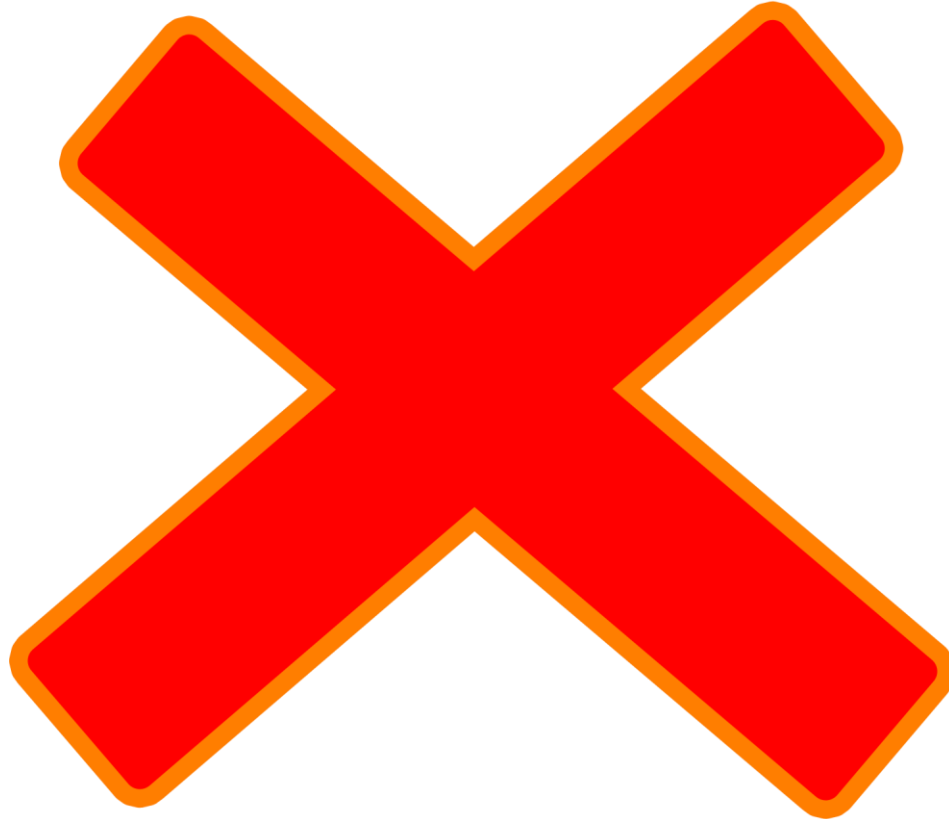
What is the mode of these numbers:
34, 45, 56, 45, 34, 46, 67, 34?

34

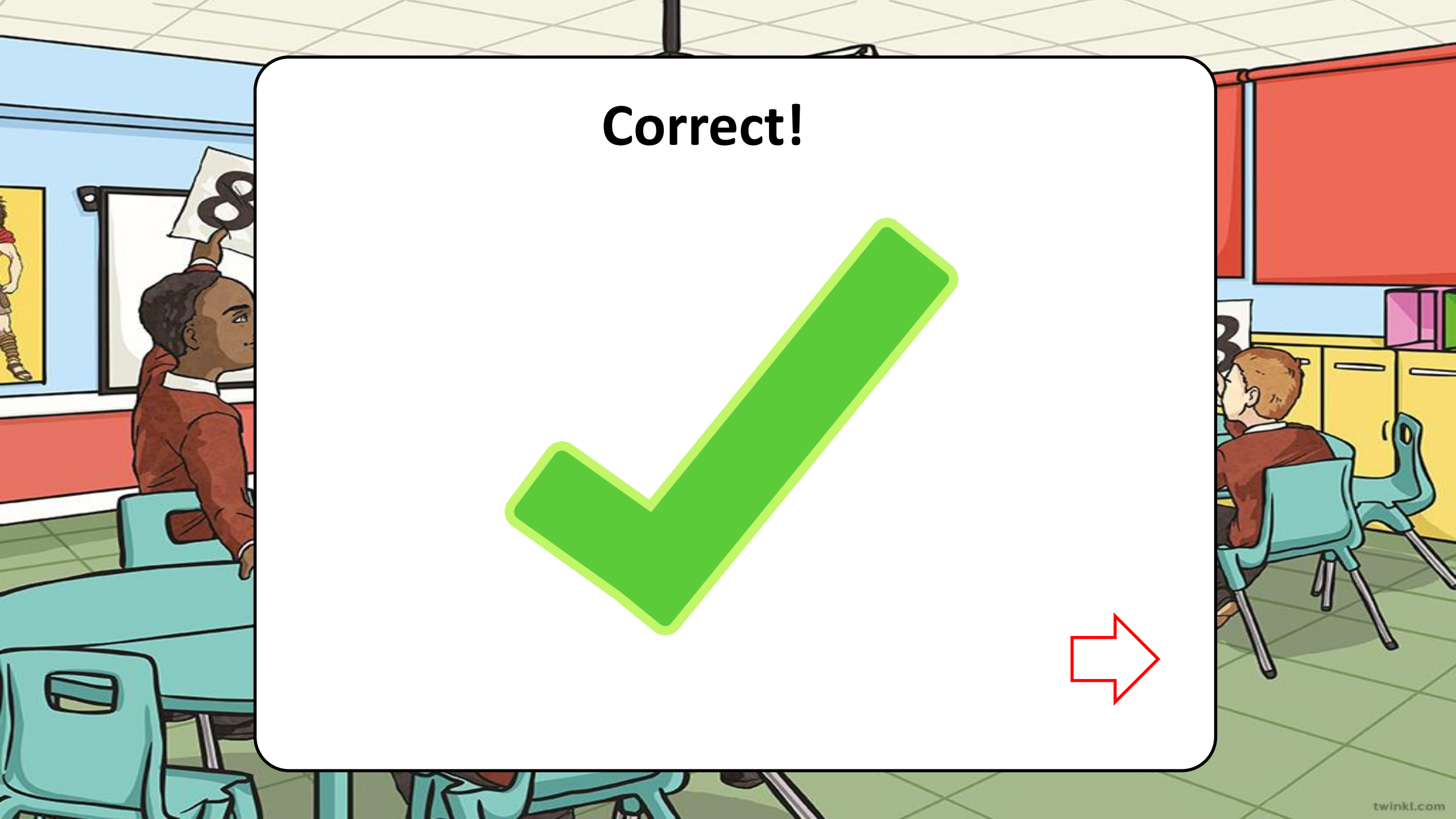
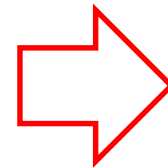
45

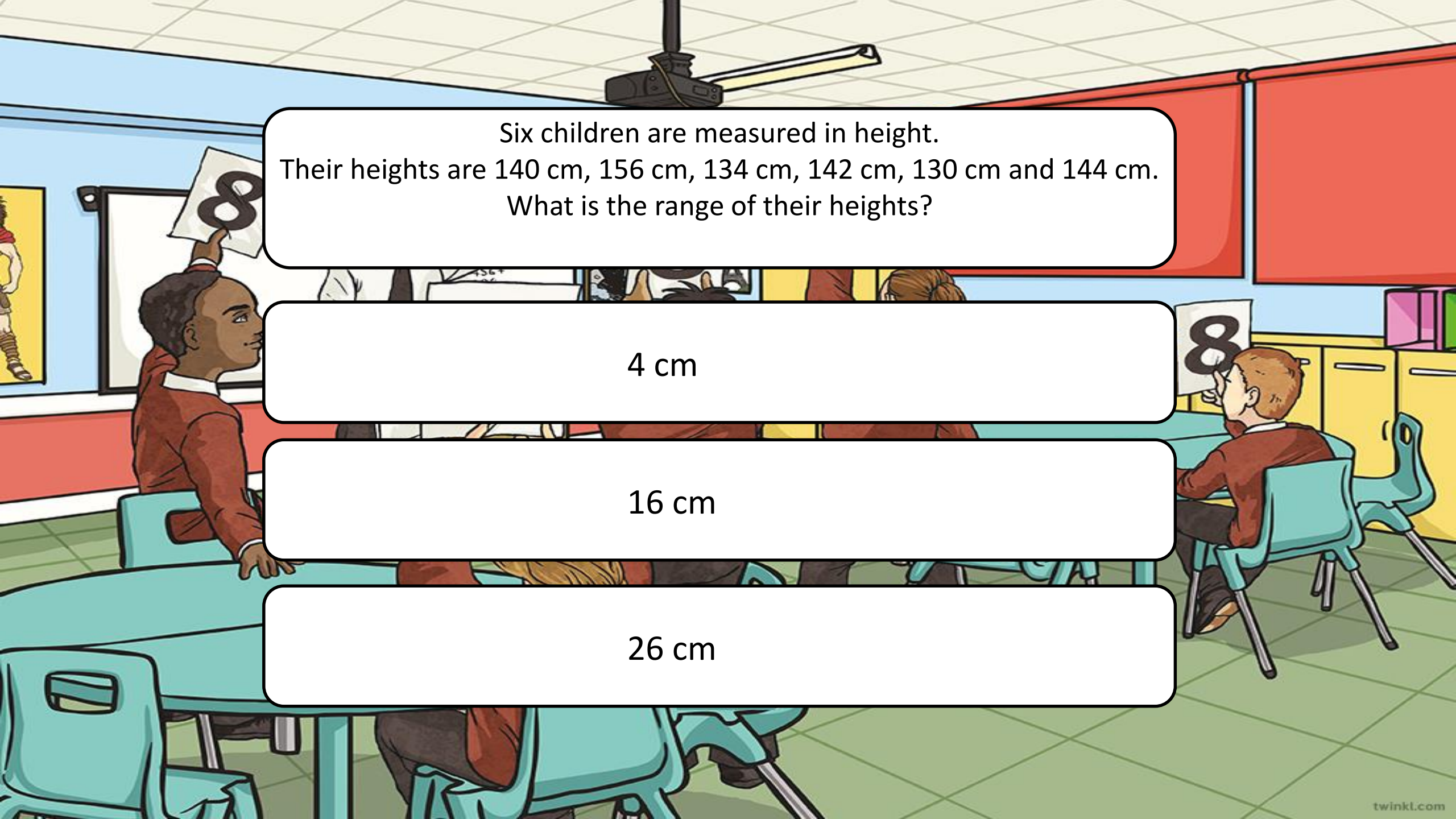
40

Keep Trying!



Correct!





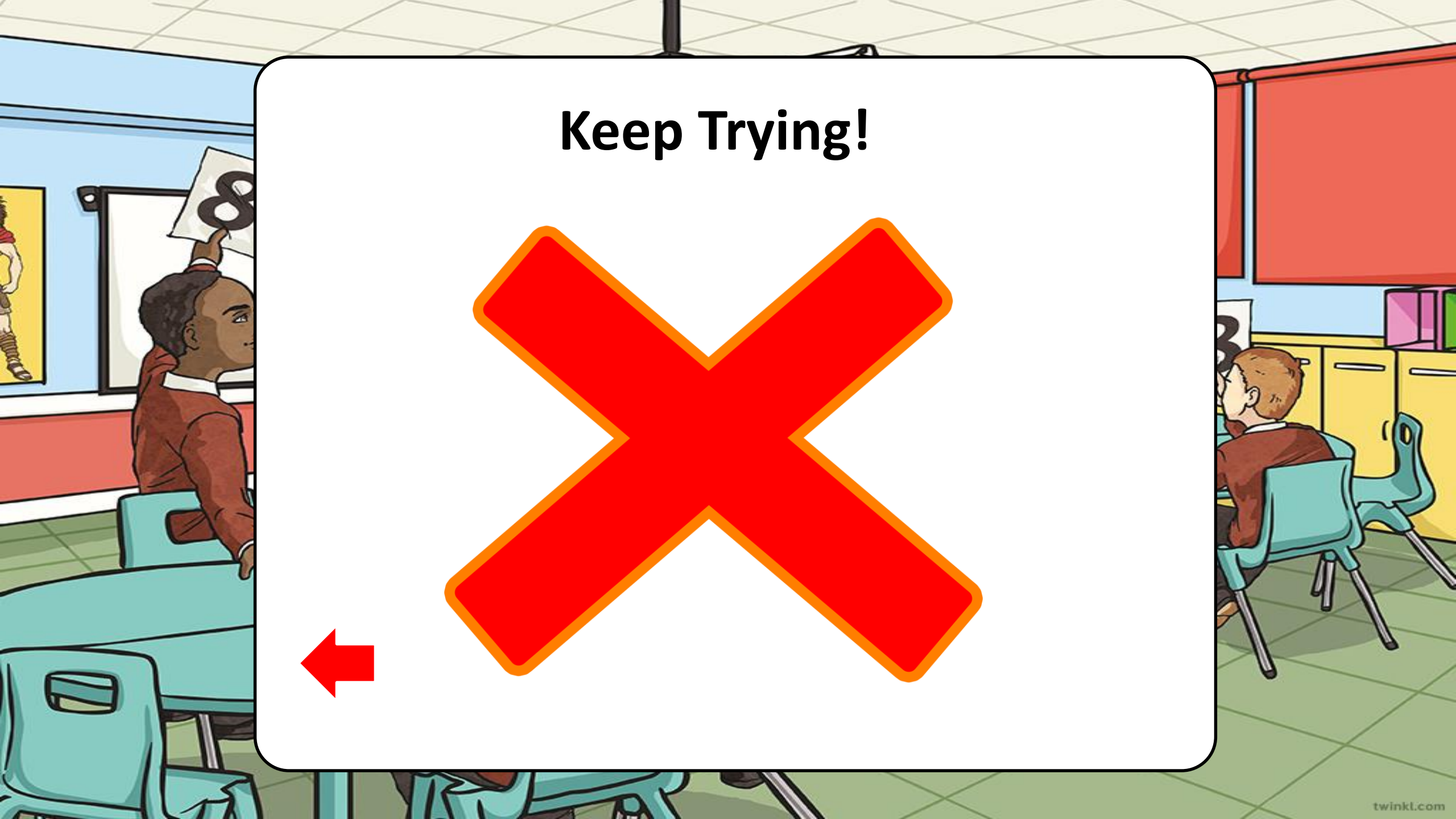
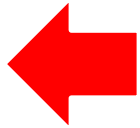
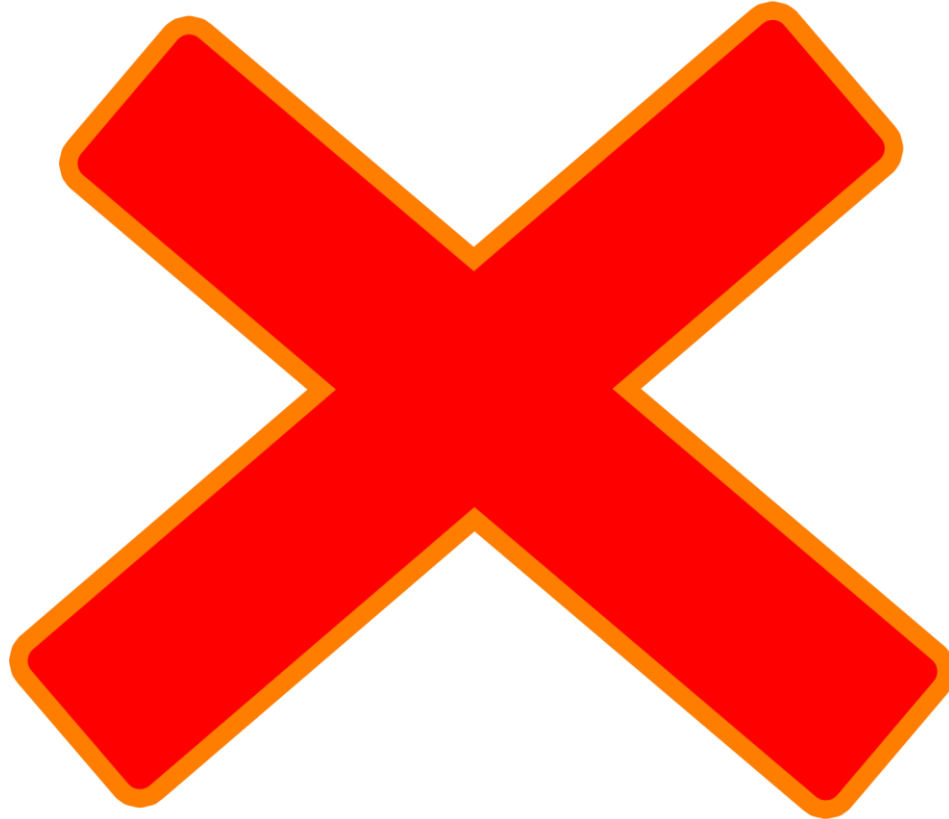
Six children are measured in height.
Their heights are 140 cm, 156 cm, 134 cm, 142 cm, 130 cm and 144 cm.
What is the range of their heights?

4 cm

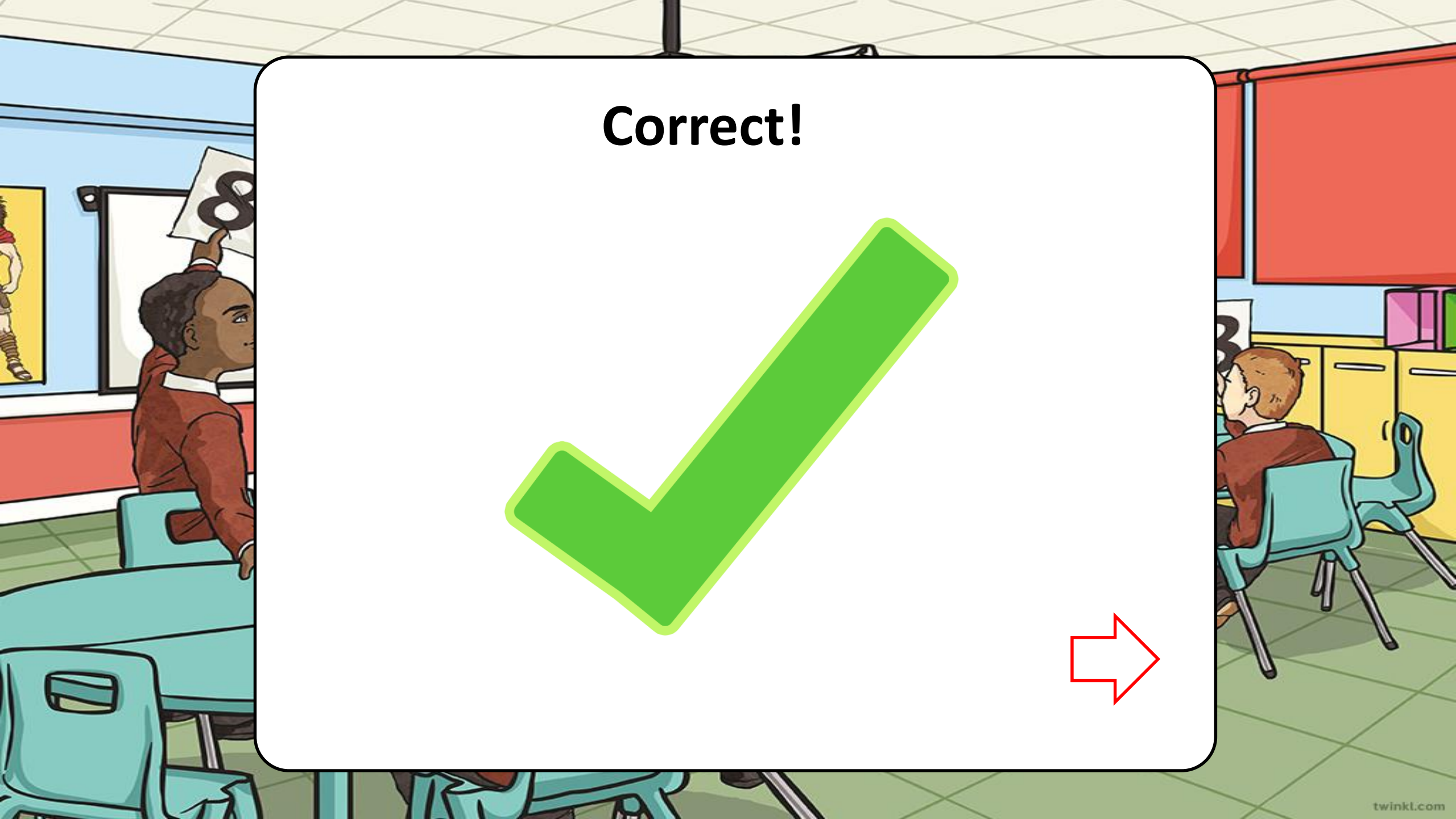
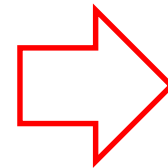
16 cm

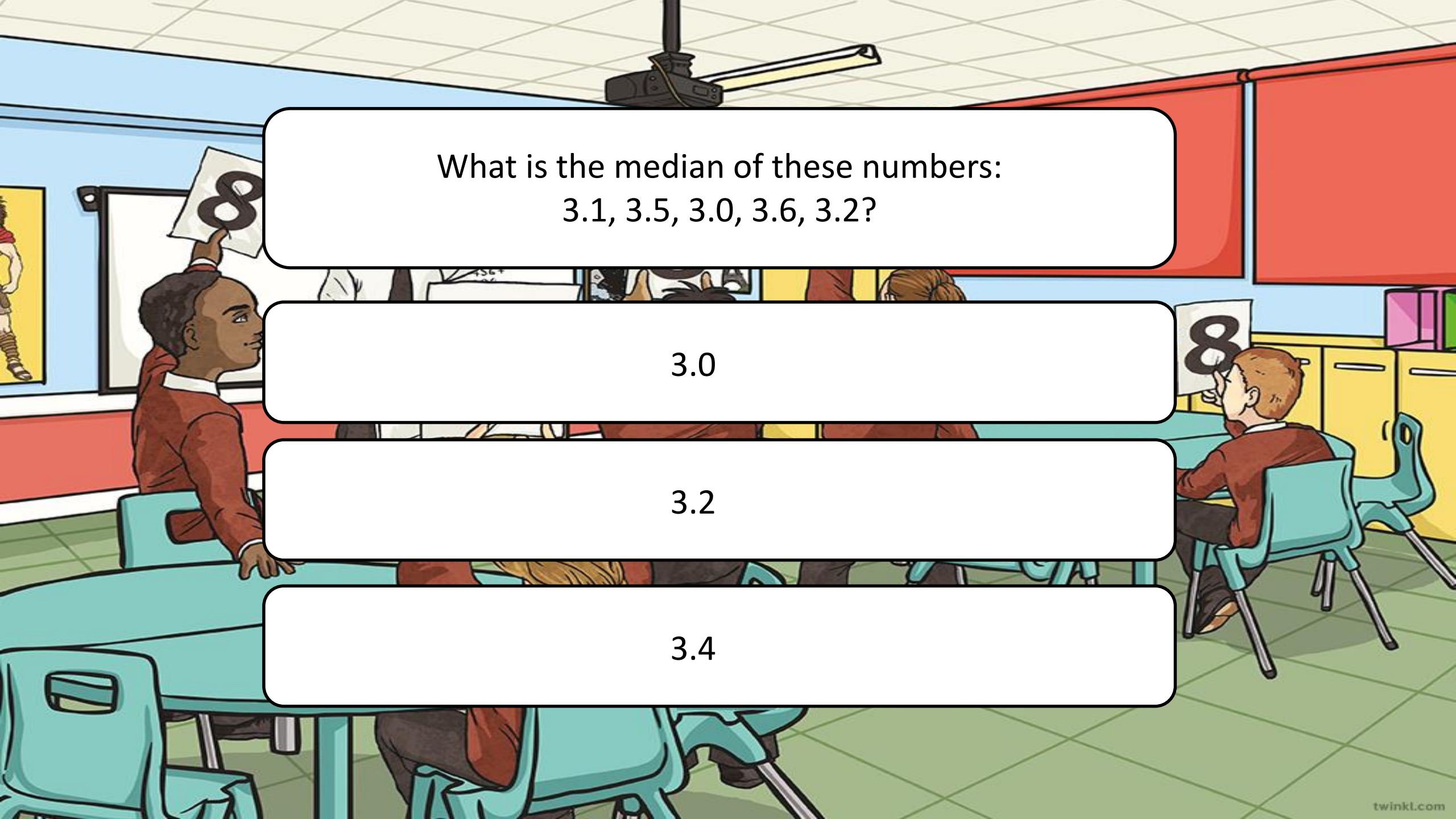
26 cm

Keep Trying!



Correct!



A colorful illustration of a classroom. In the foreground, a young boy with dark skin and short black hair, wearing a brown sweater, is sitting at a light blue desk and holding up a white card with the number 8 on it. To his right, another young boy with light skin and short brown hair, also in a brown sweater, is sitting at a desk and looking towards the first boy. In the background, a teacher with blonde hair tied back is standing near a whiteboard. The classroom has blue walls, a red bulletin board, and yellow storage cabinets. A ceiling fan is visible at the top.

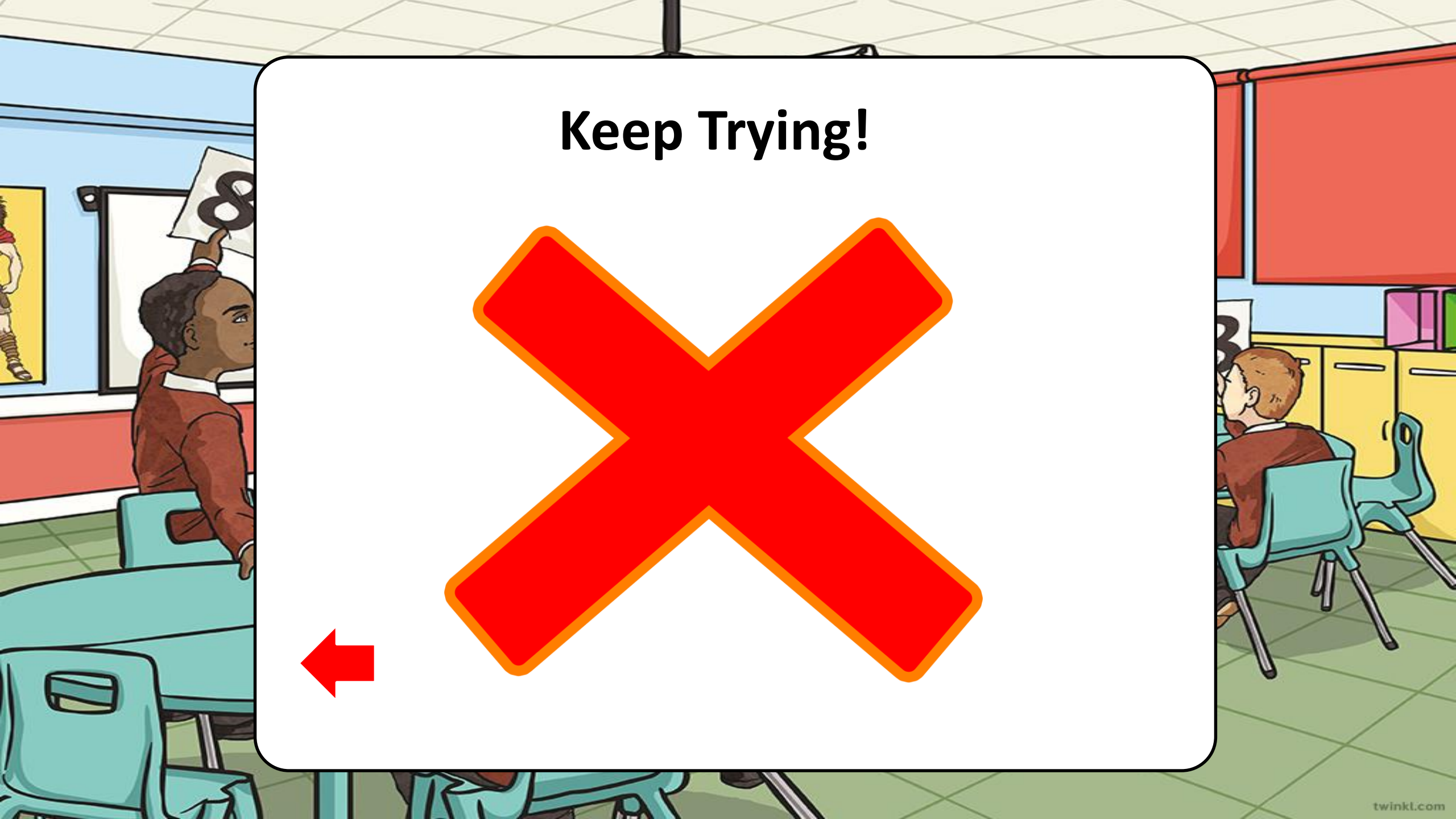
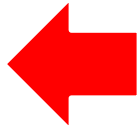
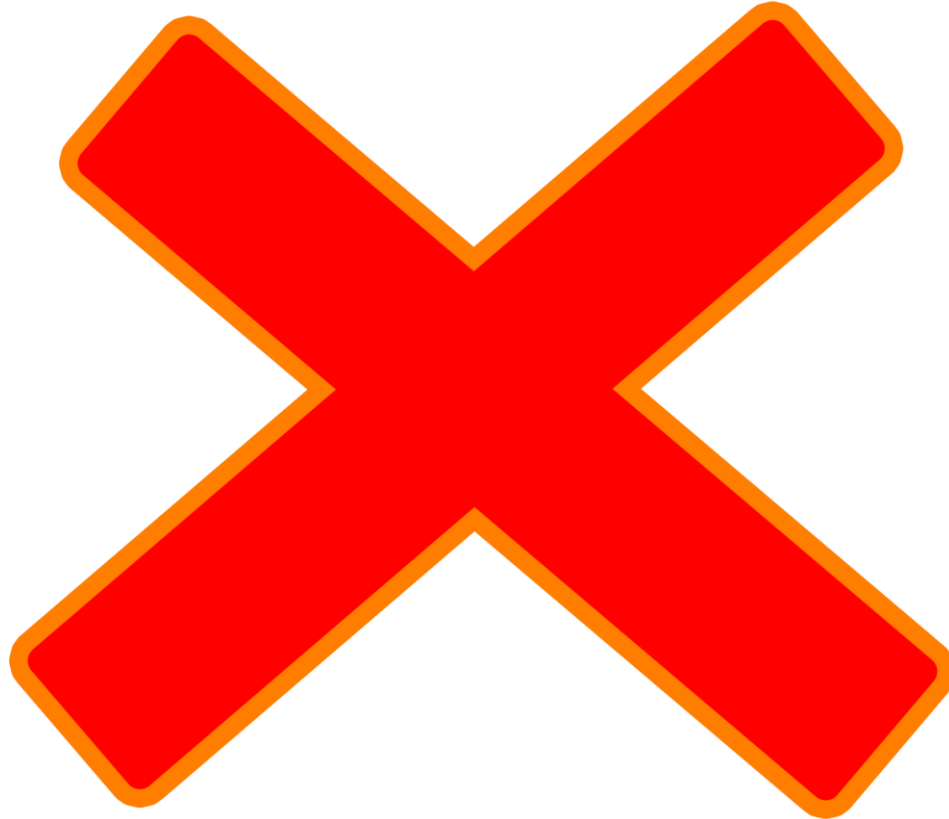
What is the median of these numbers:
3.1, 3.5, 3.0, 3.6, 3.2?

3.0

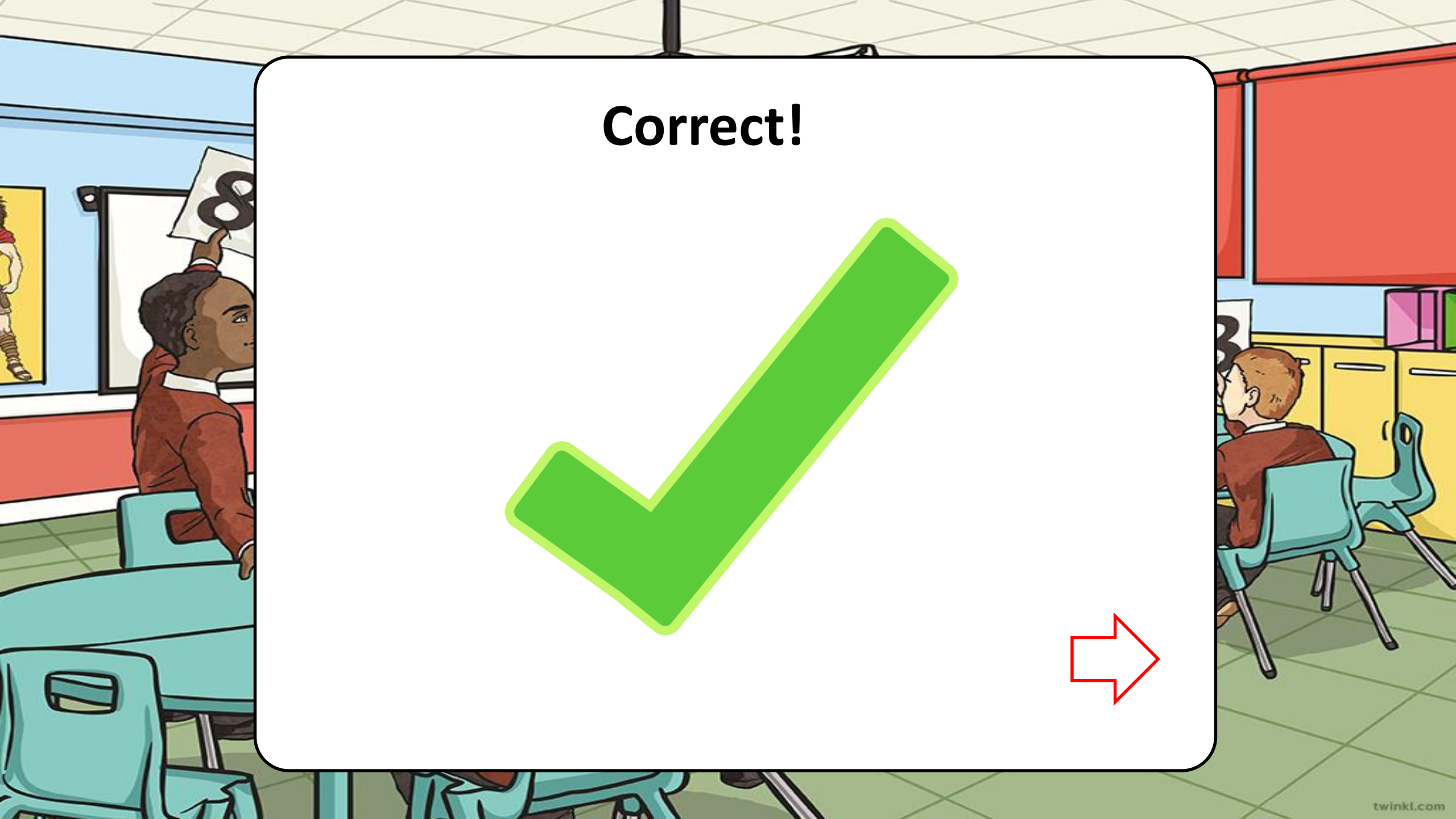
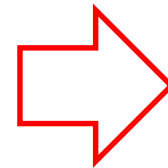
3.2

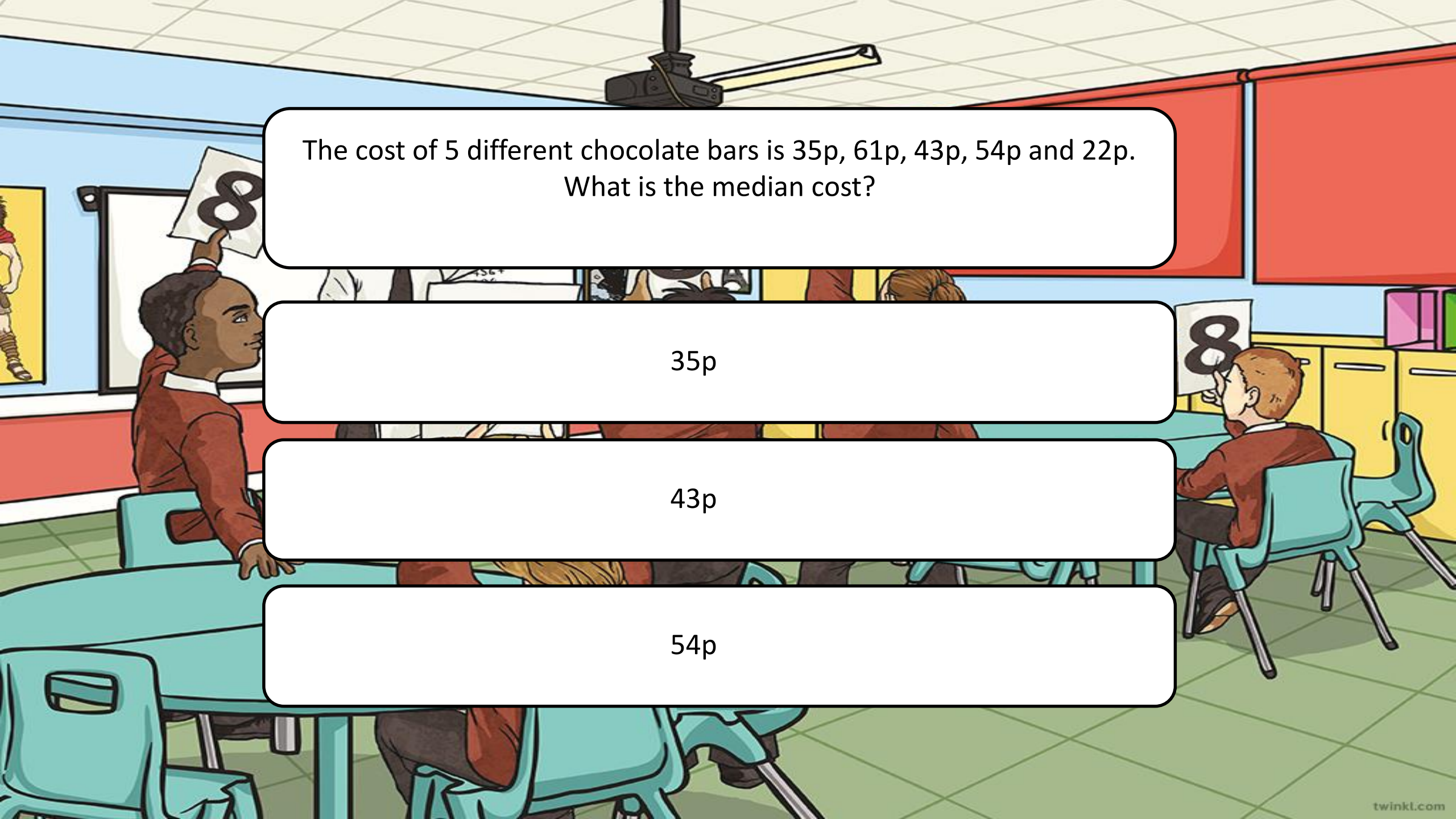
3.4

Keep Trying!



Correct!





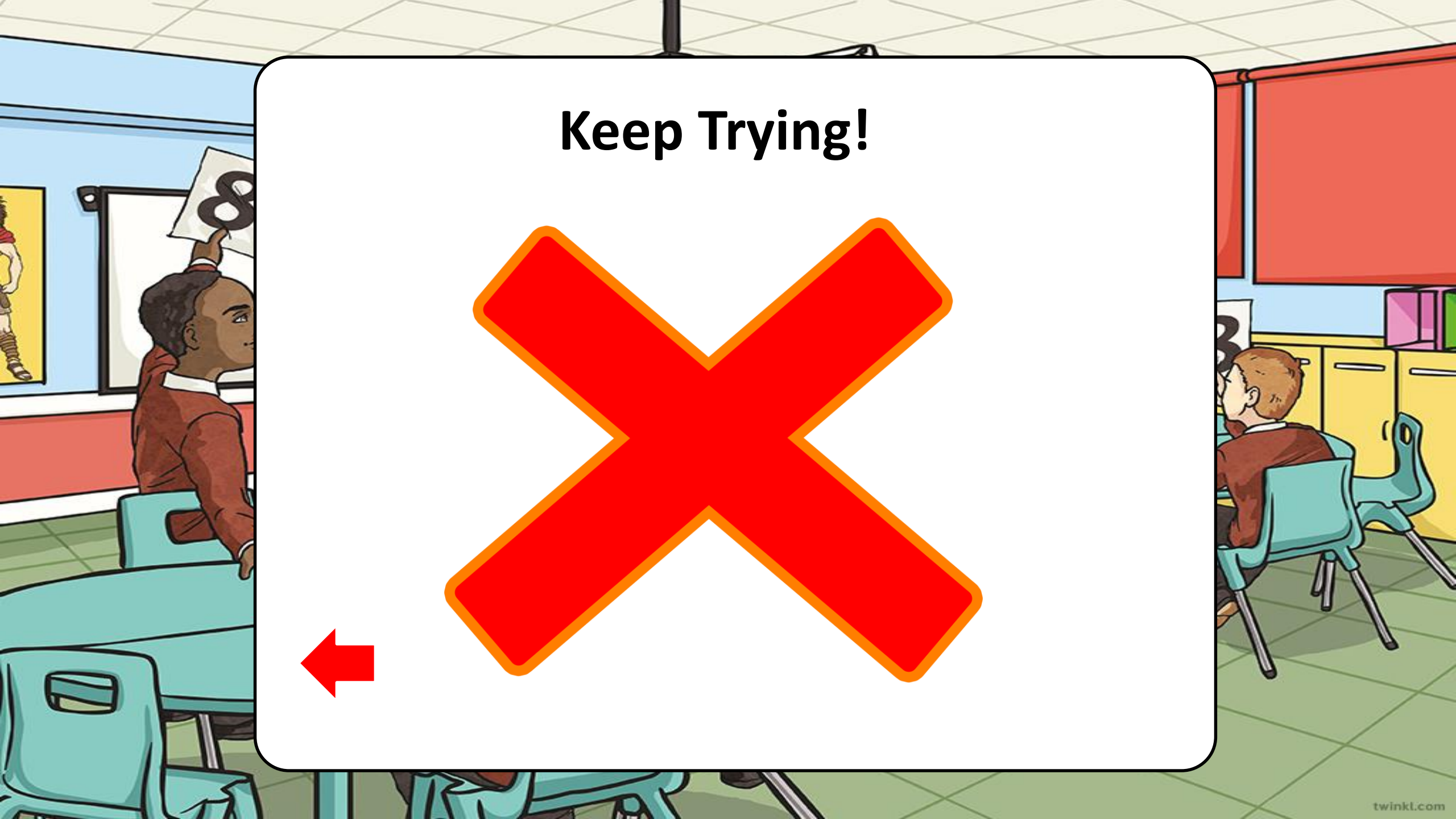
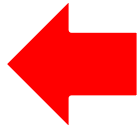
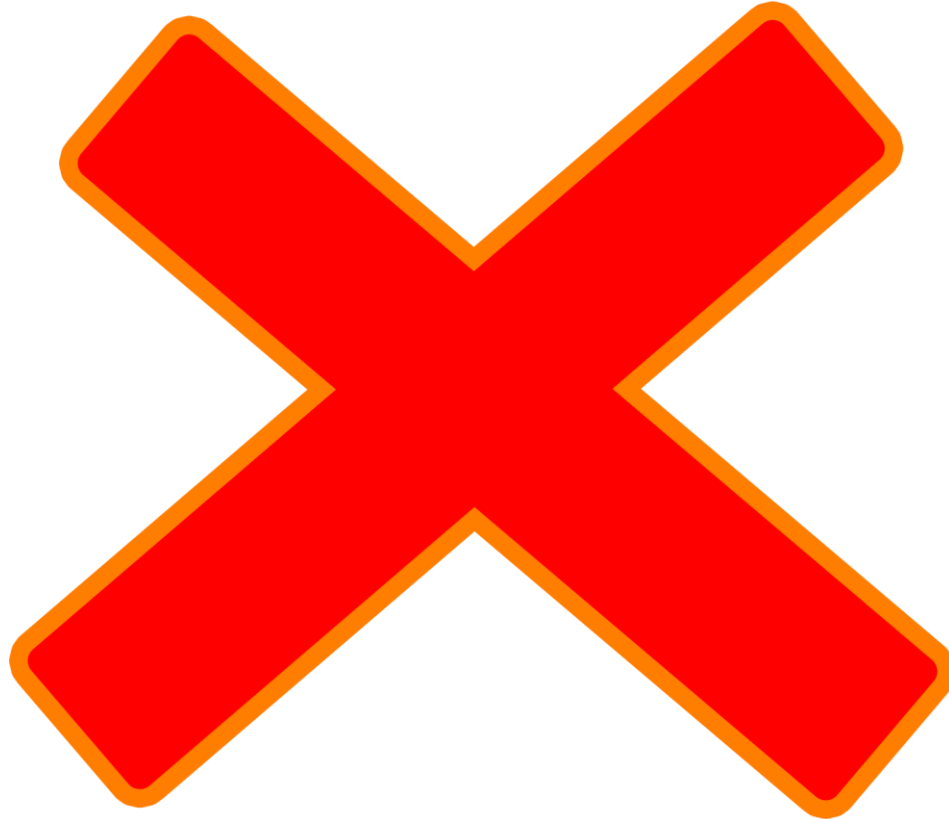
The cost of 5 different chocolate bars is 35p, 61p, 43p, 54p and 22p.
What is the median cost?

35p

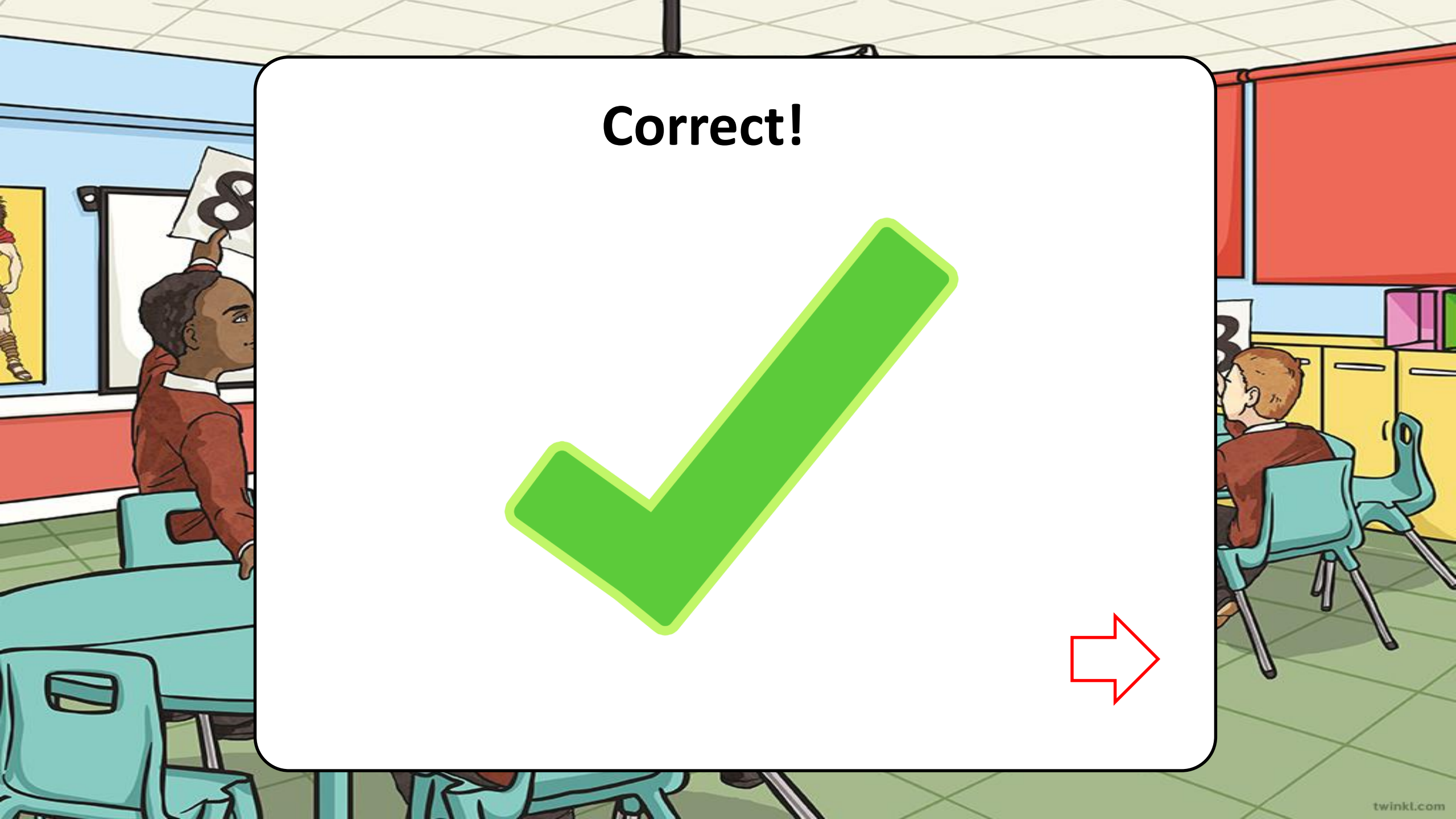
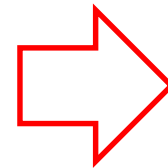
43p

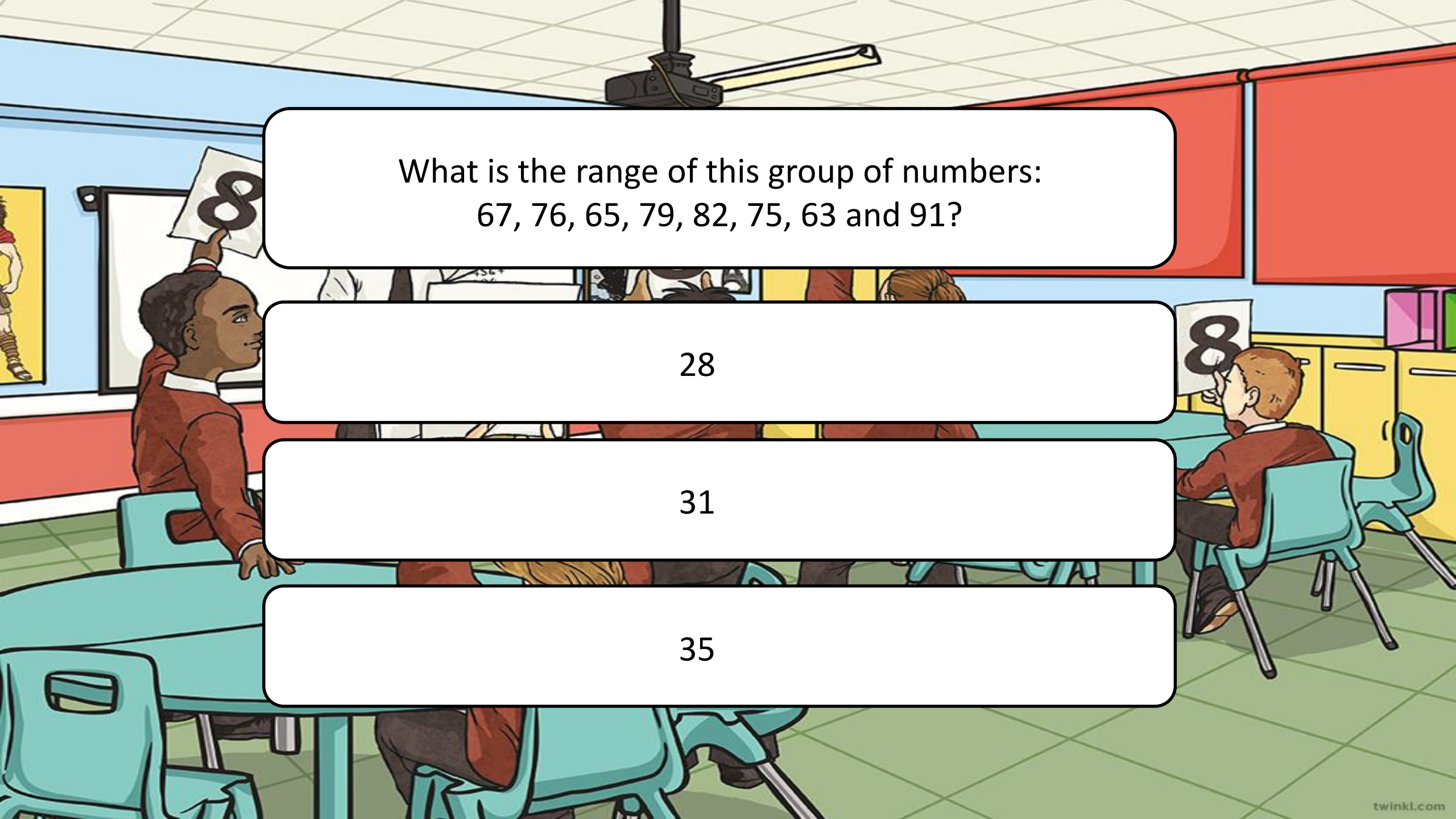
54p

Keep Trying!



Correct!



A colorful illustration of a classroom. In the foreground, a young boy with dark skin and short black hair, wearing a brown sweater, is sitting at a light blue desk and holding up a white card with the number 8 on it. To his right, another young boy with light skin and short brown hair, also in a brown sweater, is sitting at a desk and looking towards the first boy. In the background, a teacher with blonde hair, wearing a white shirt and a dark tie, is standing and looking at the students. The classroom has a green tiled floor, a whiteboard, and a red bulletin board. A ceiling fan is visible above the students.

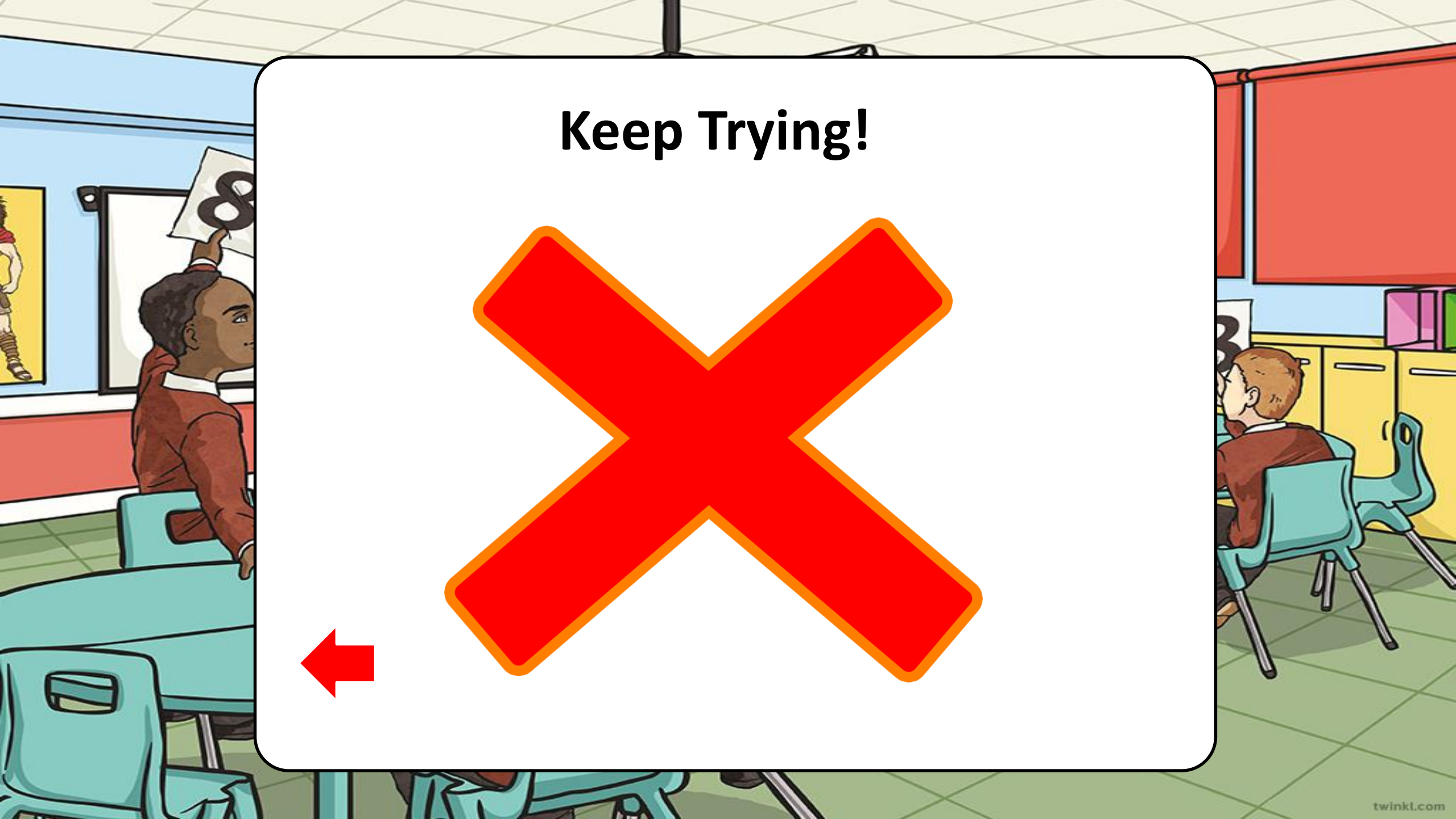
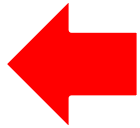
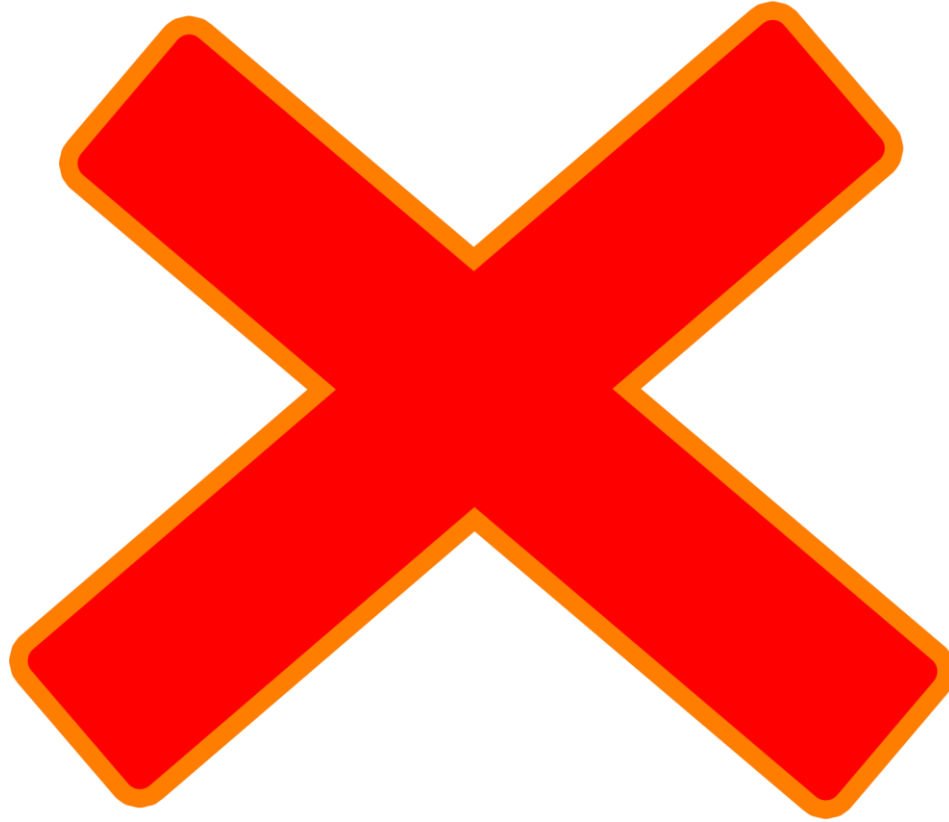
What is the range of this group of numbers:
67, 76, 65, 79, 82, 75, 63 and 91?

28

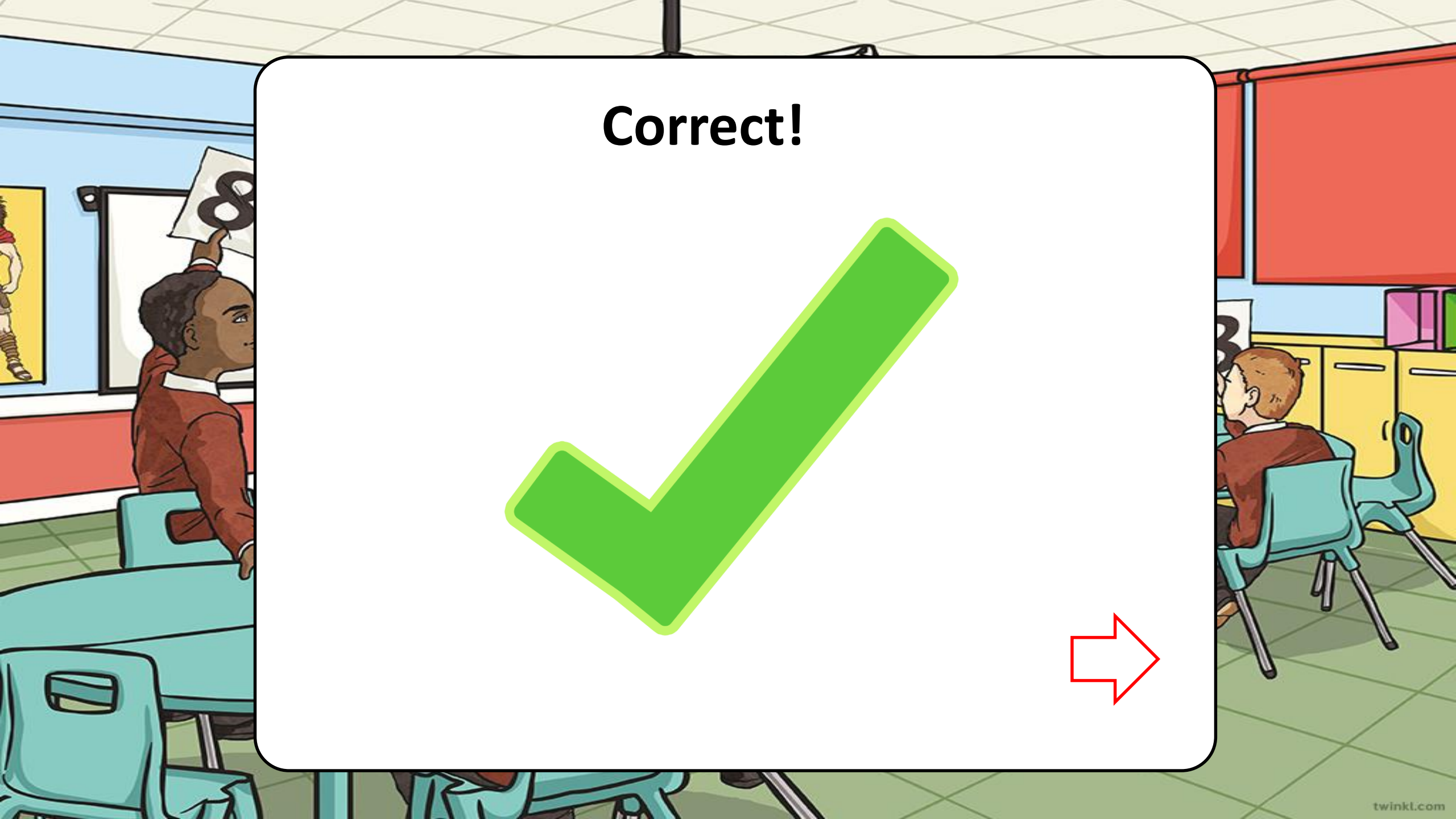
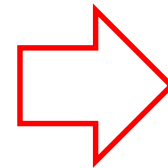
31

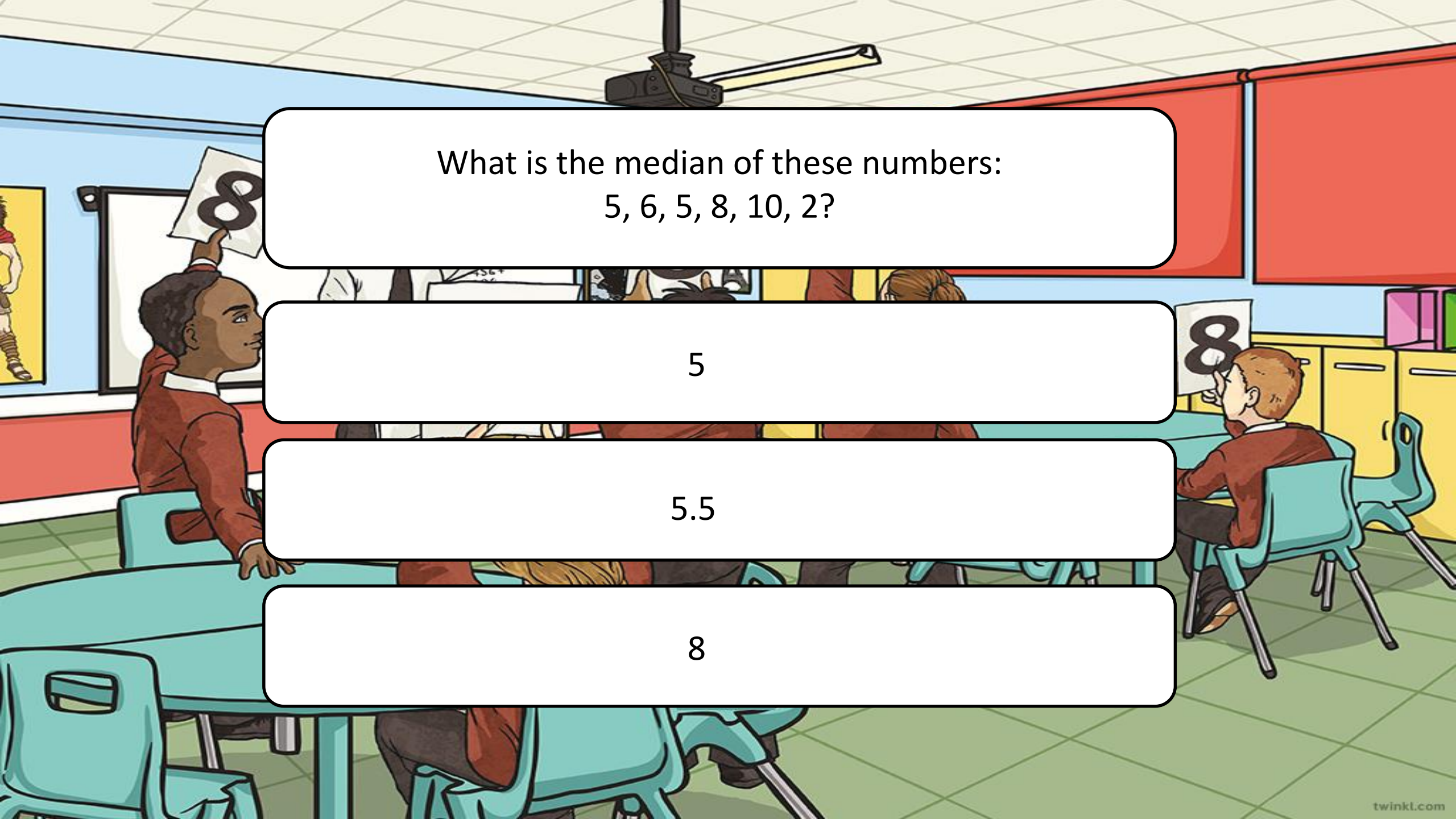
35

Keep Trying!



Correct!





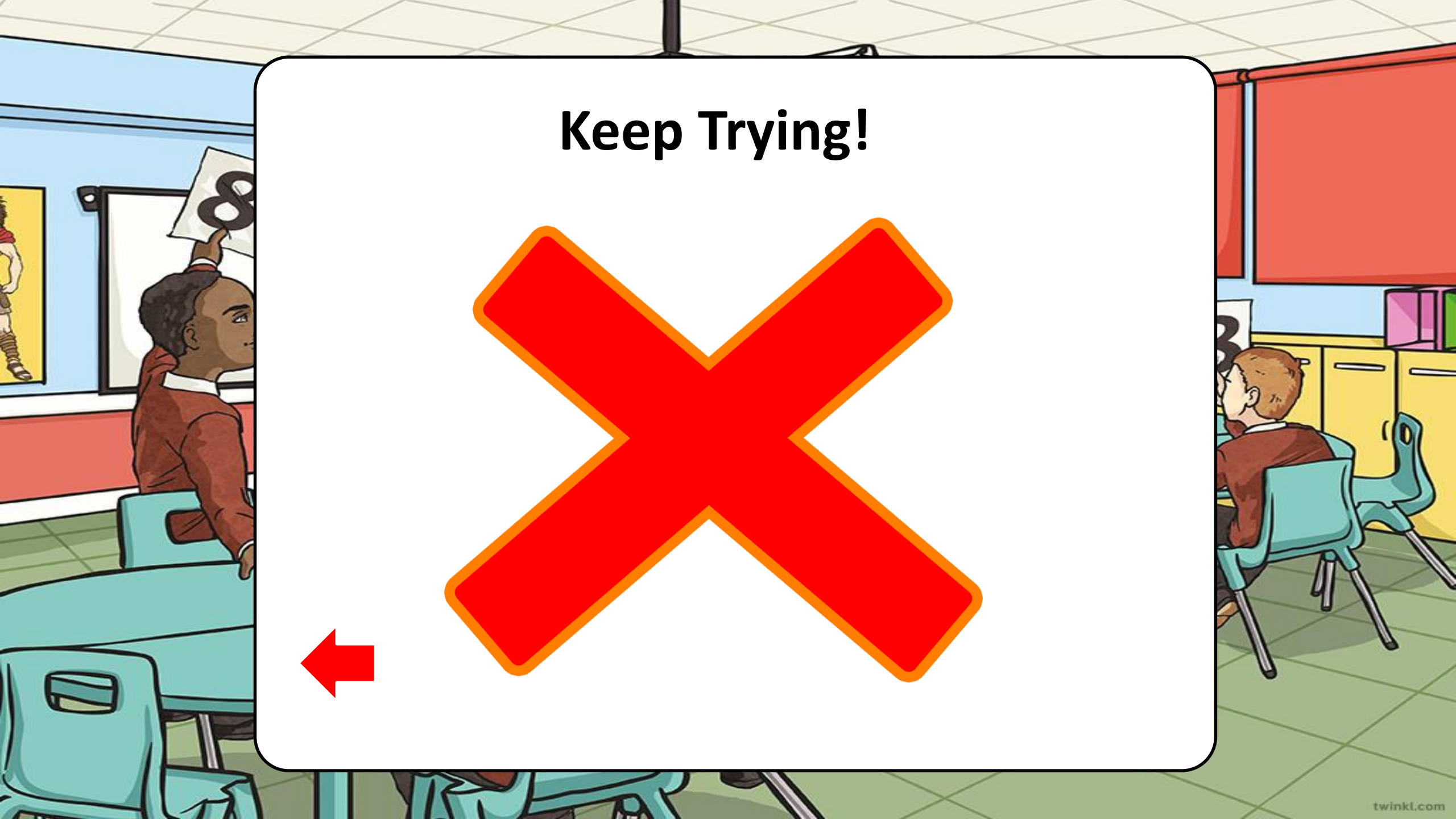
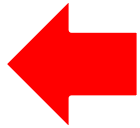
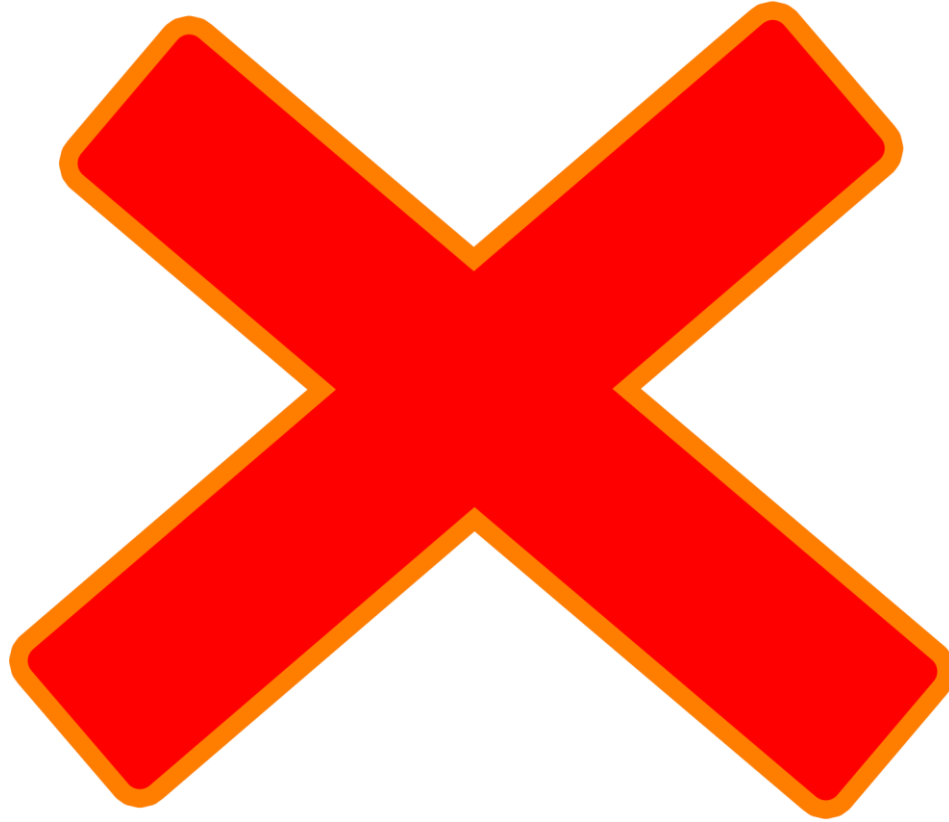
What is the median of these numbers:
5, 6, 5, 8, 10, 2?

5

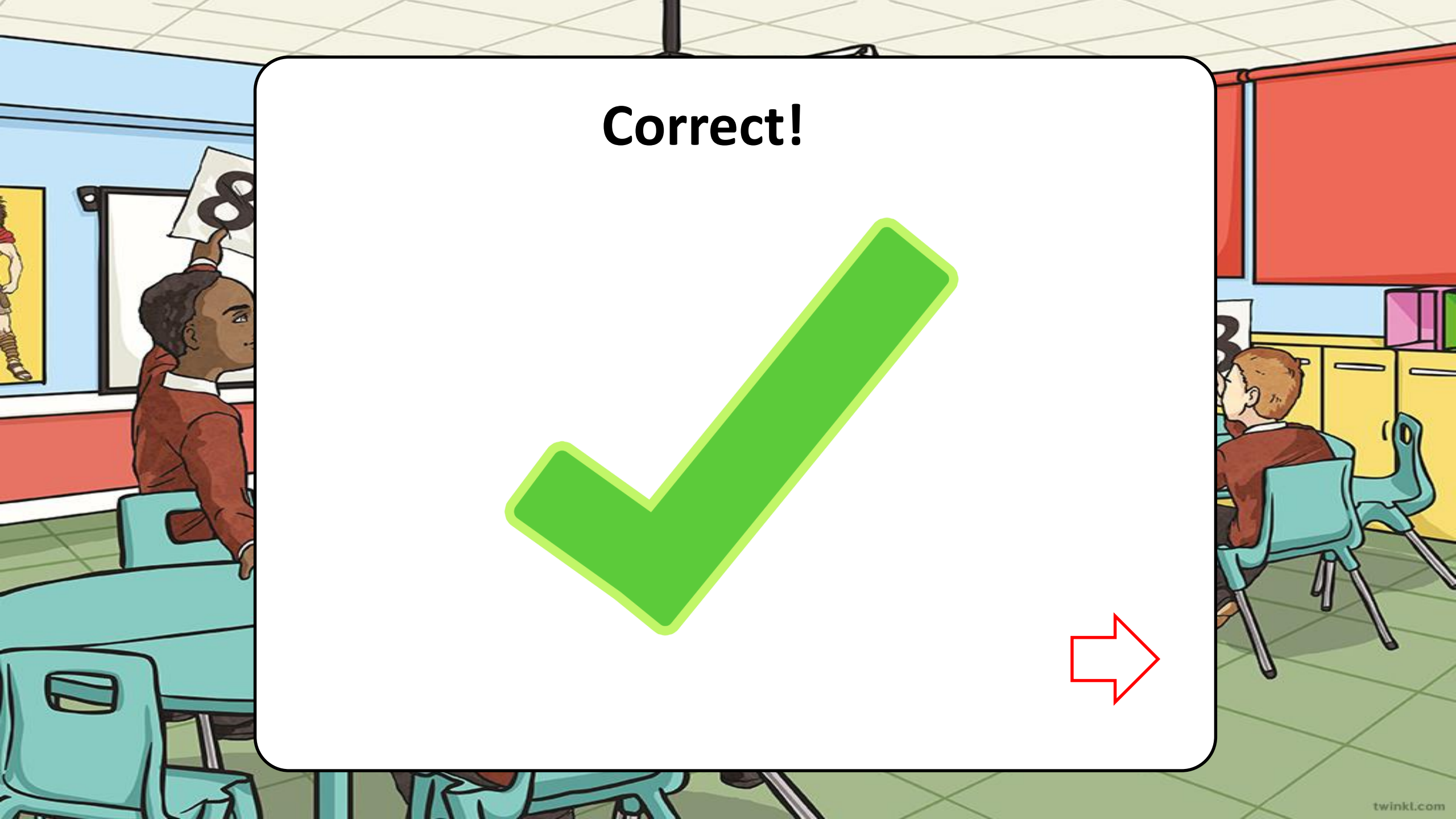
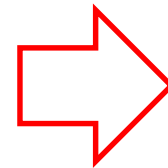
5.5

8

Keep Trying!



Correct!



Weds 27.4.22

EW plan Oct

LO: To revise
translation

Write the type of angle:

1.



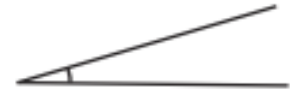
2.



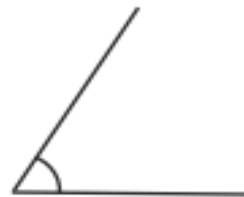
3.



4.



5.



6.



**DO NOW! Name
the angles! Estimate
size**

1.



3.



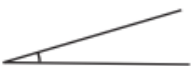
5.



2.



4.



6.



1.



3.



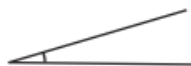
5.



2.



4.



6.



1.



3.



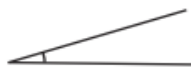
5.



2.



4.



6.



1.



3.



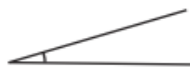
5.



2.

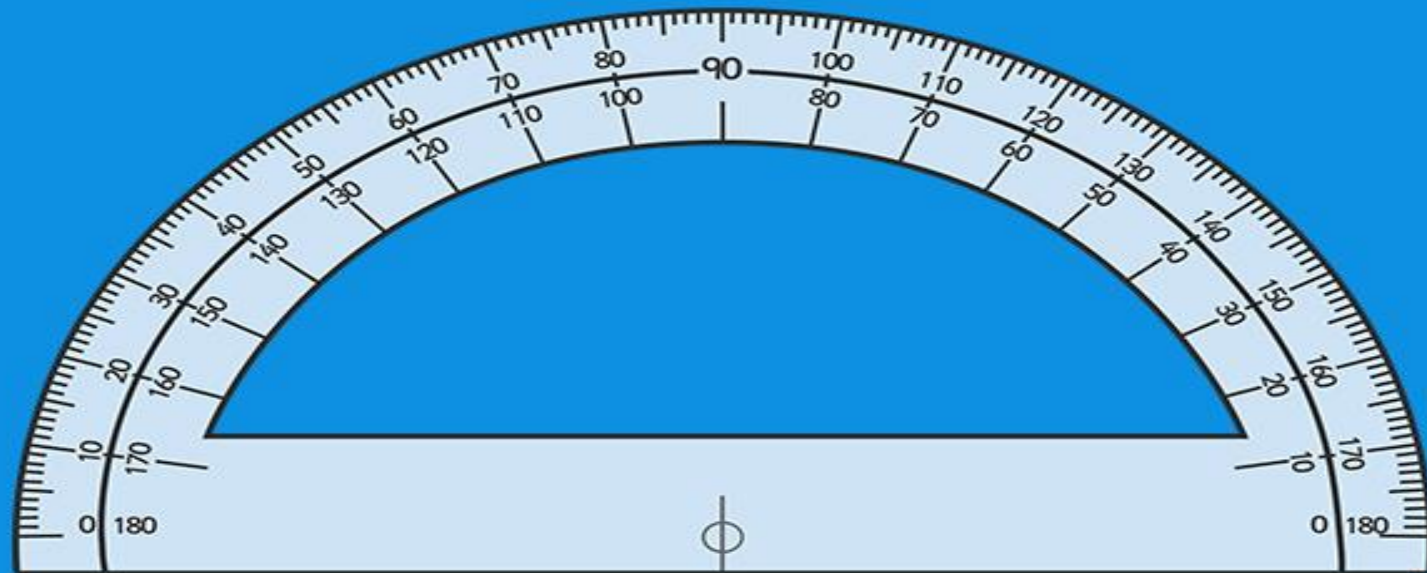


4.

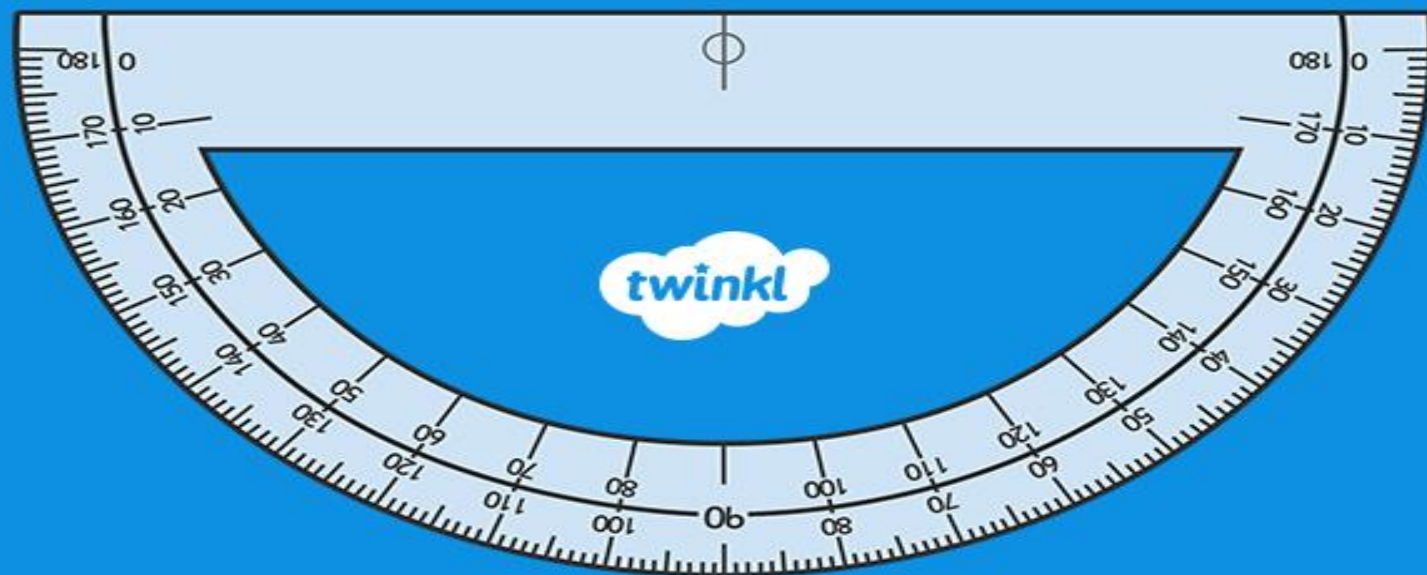


6.



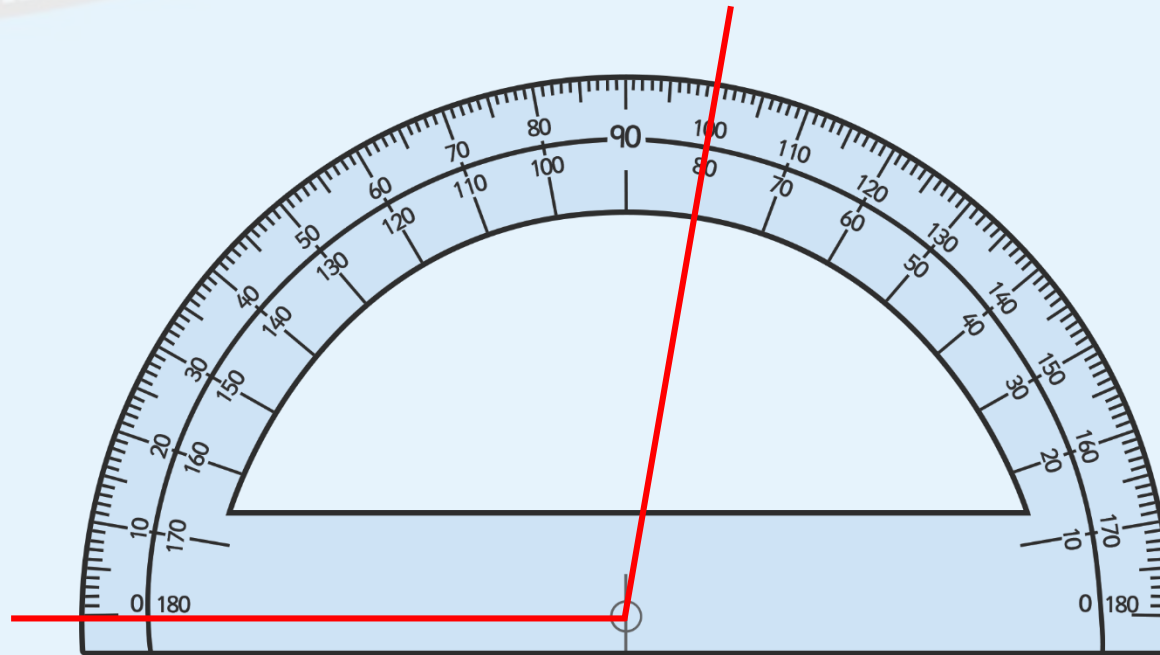


How to use a Protractor



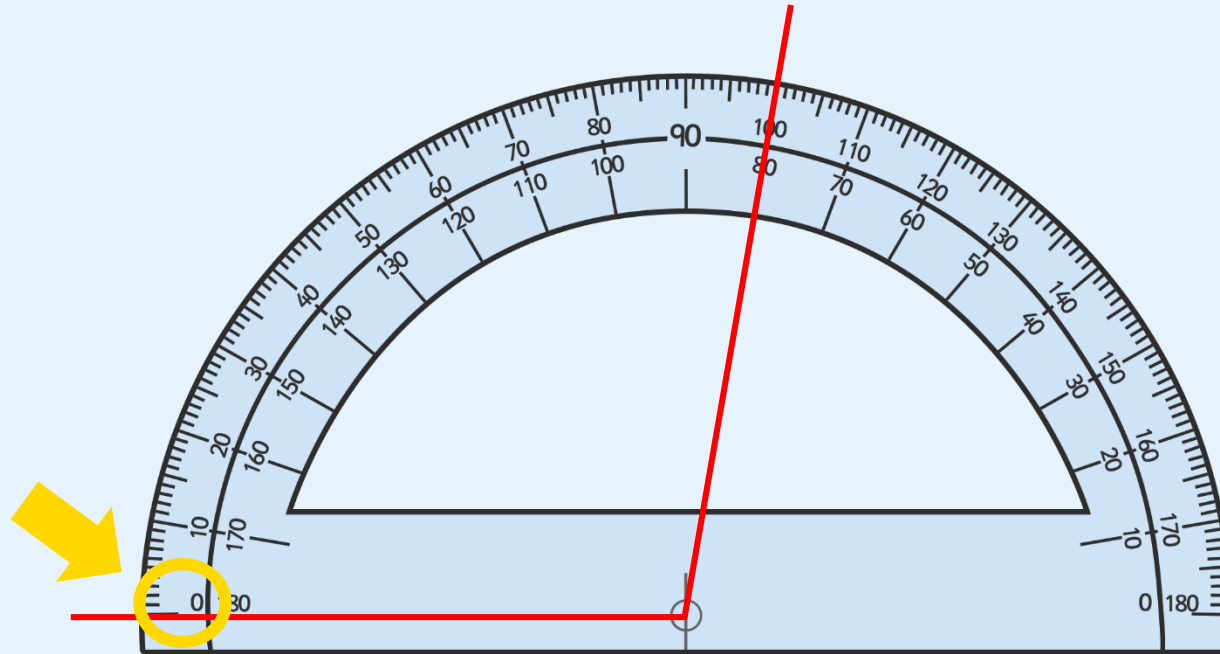
1

Place the cross or circle at the point (vertex)
of the angle that you are measuring.



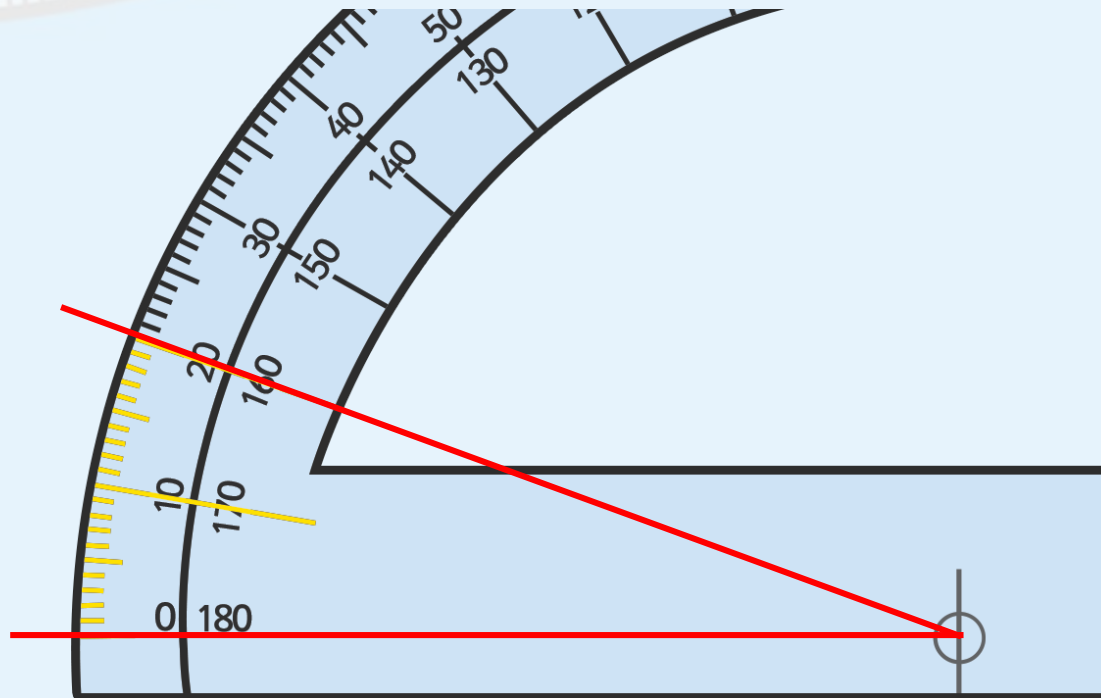
2

Read from the zero on the outer scale of your protractor.



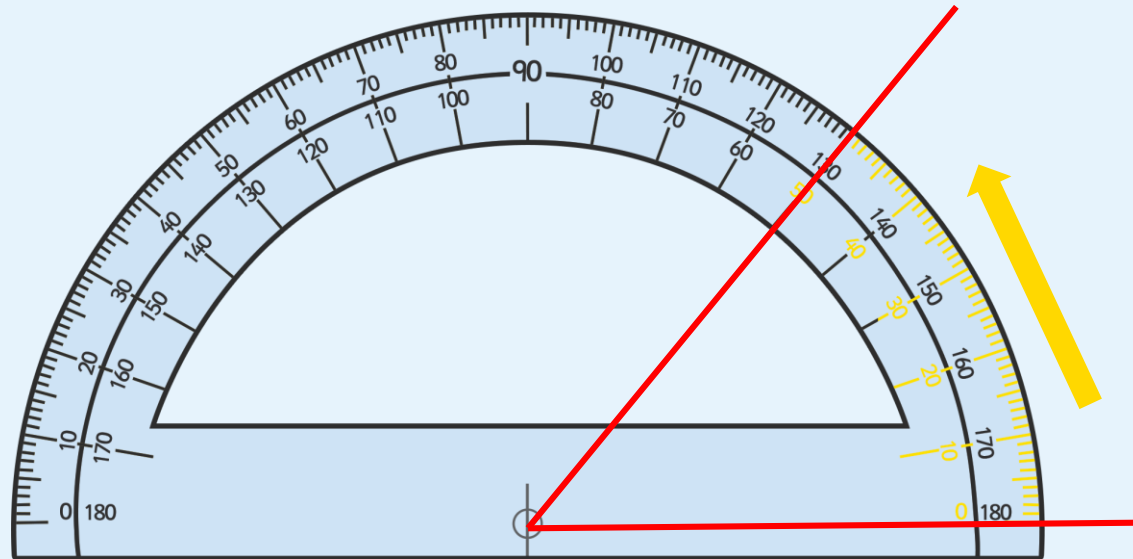
3

Count the degree lines carefully.



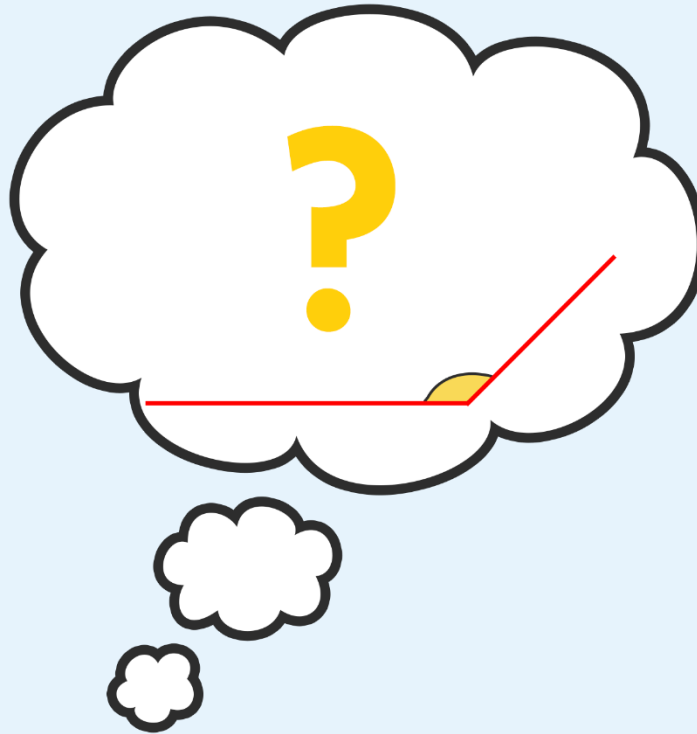
4

If the angle that you are measuring turns in an anti-clockwise direction, you will need to use the inner scale of your protractor.



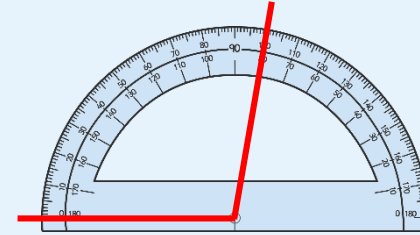
Tip!

It is a good idea to estimate the angle before measuring.



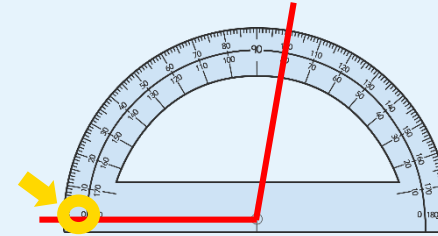
1

Place the cross or circle at the point (vertex) of the angle that you are measuring.



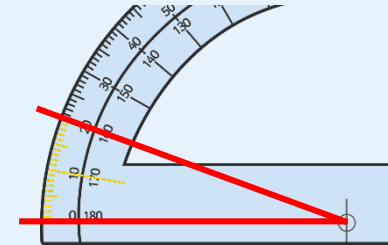
2

Read from the zero on the outer scale of your protractor.



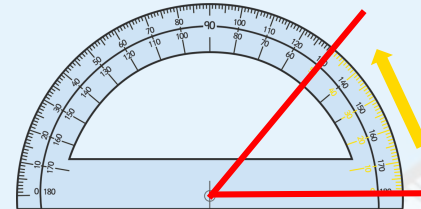
3

Count the degree lines carefully.



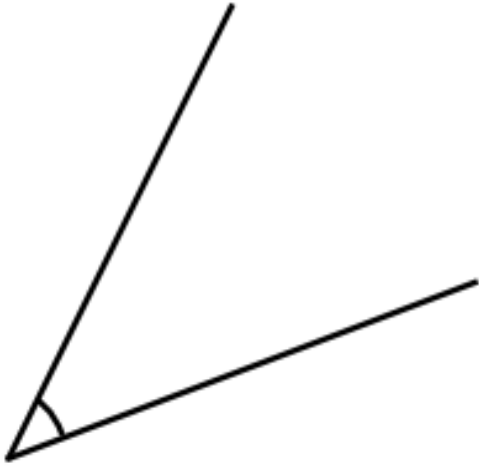
4

Use the inner scale of your protractor if the angle turns in an anti-clockwise direction..

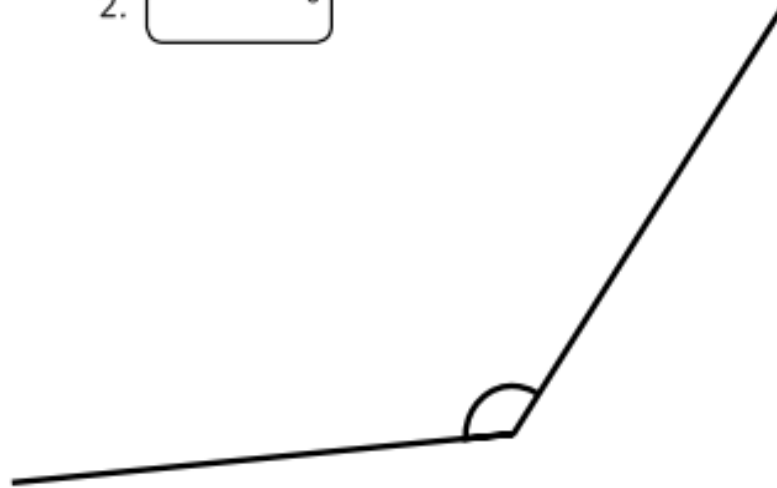


Measure the following angles:

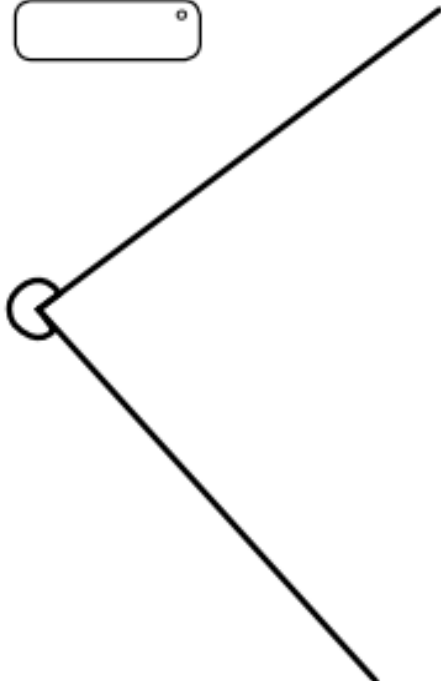
1. °



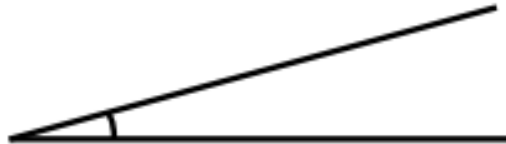
2. °



3. °



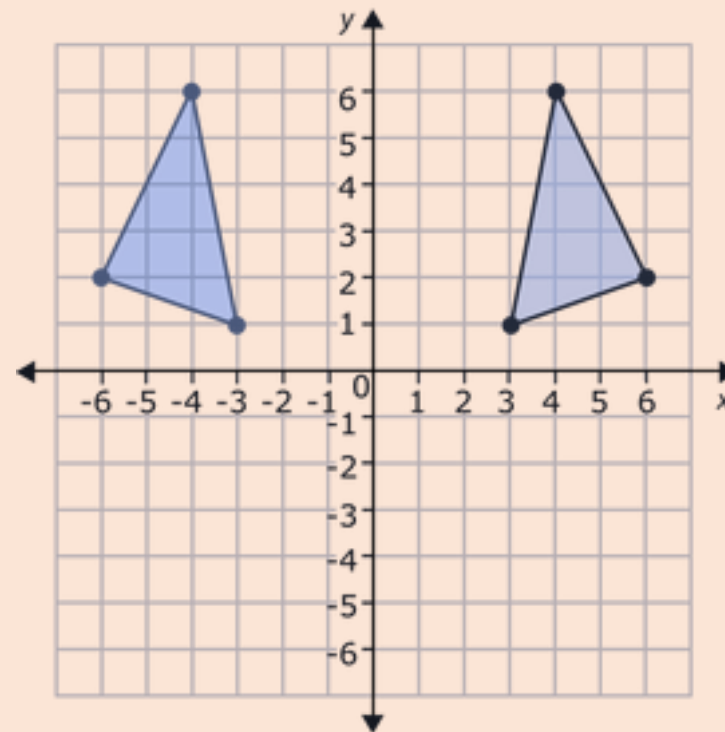
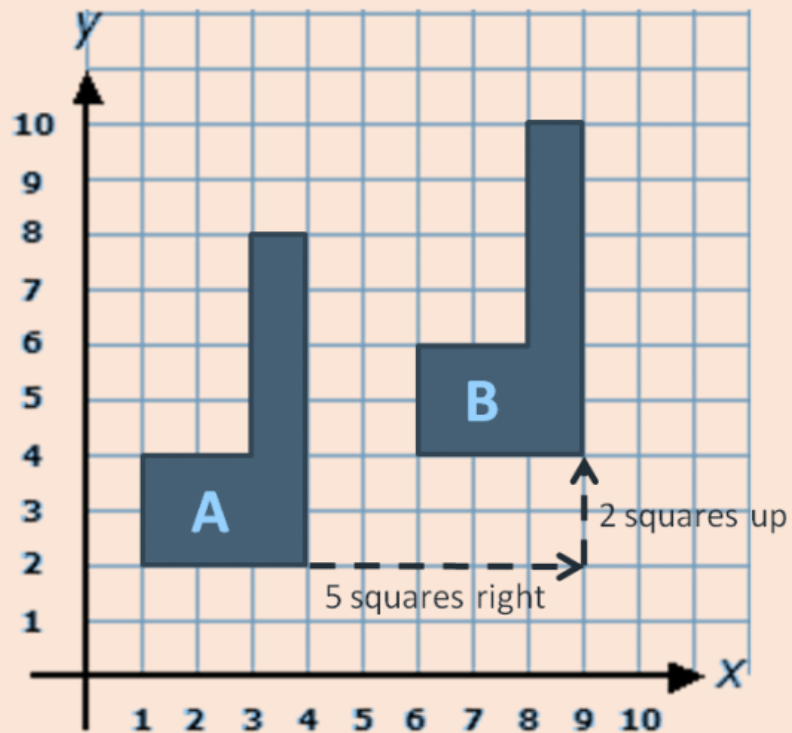
4. °



Measure the angles activity



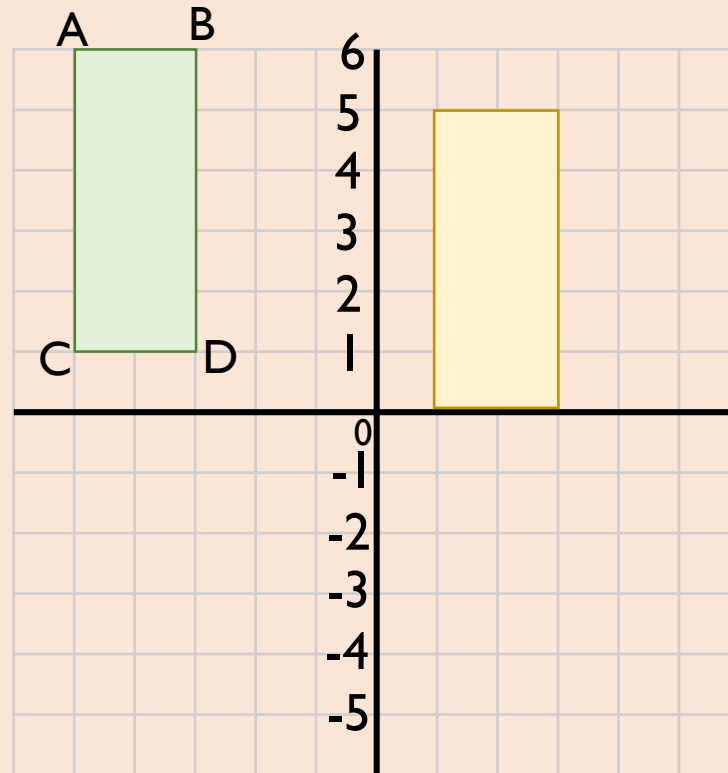
Translation and reflection



Translation

True or False?

The rectangle ABCD has been translated 6 units down and 1 unit to the right to get to the yellow rectangle.

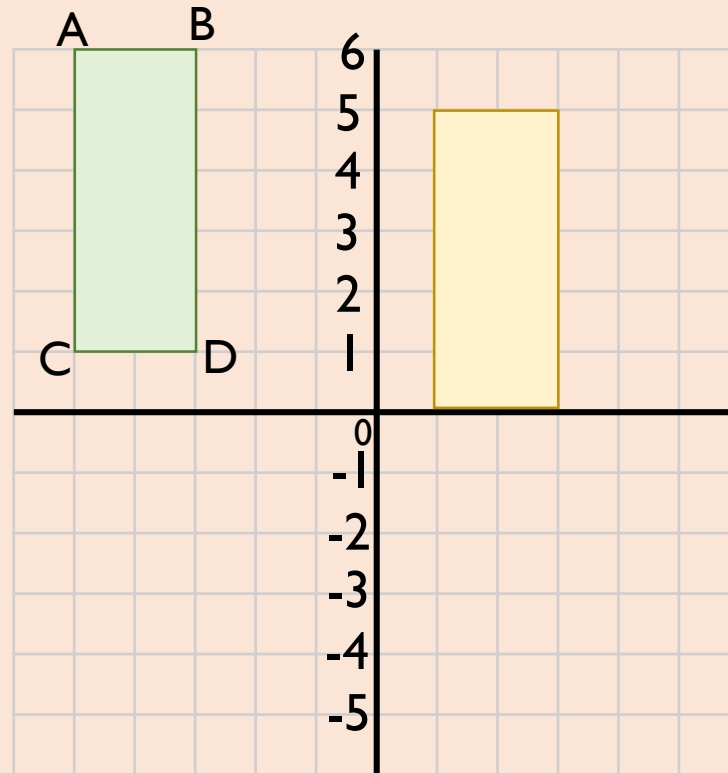


Explain your reasoning.

Translation

True or False?

The rectangle ABCD has been translated 6 units down and 1 unit to the right to get to the yellow rectangle.

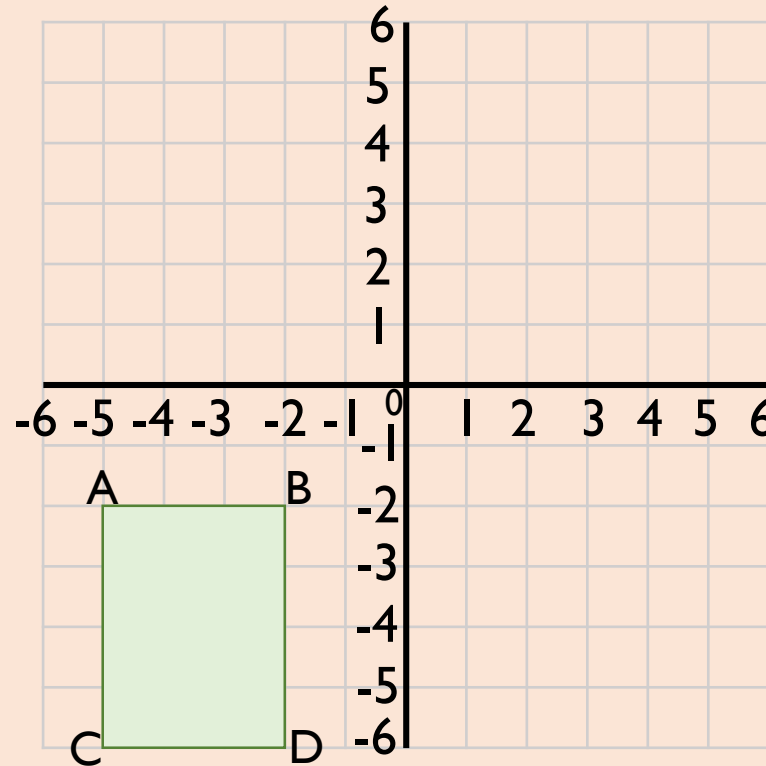


Explain your reasoning.

Translation

Rectangle ABCD is the result of a rectangle being reflected in either the x - or the y -axis.

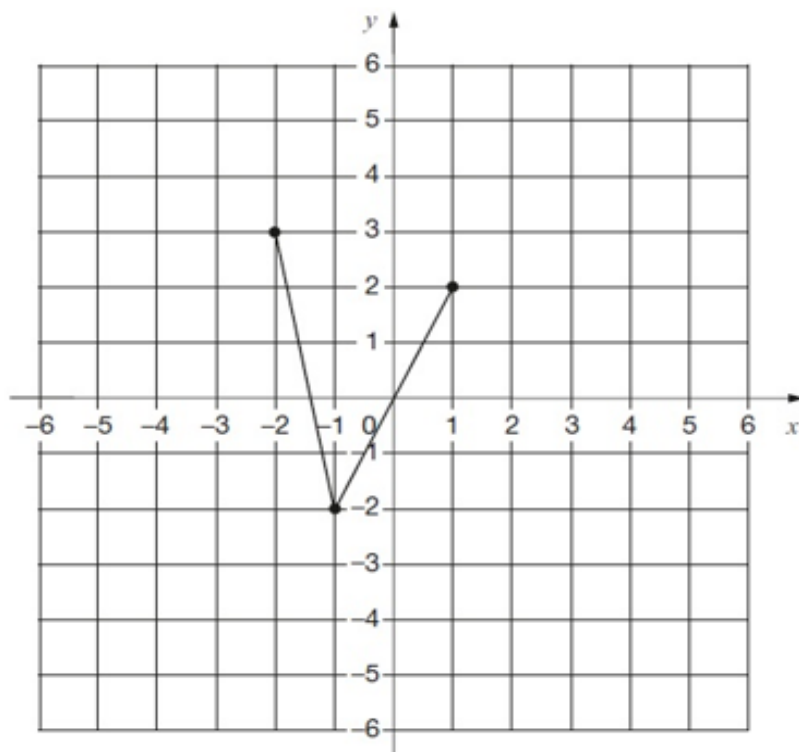
Where could the original rectangle have been? Draw the possible original rectangles on the coordinate grid, and label the coordinates of each vertex.



Your turn!

Translation

Q1. On the grid there are three points joined by two lines.



Lara plots **another point** on the grid at $(-1, 2)$.

She joins the points to make a quadrilateral.

Complete Lara's quadrilateral on the grid.
Use a ruler.

1 mark

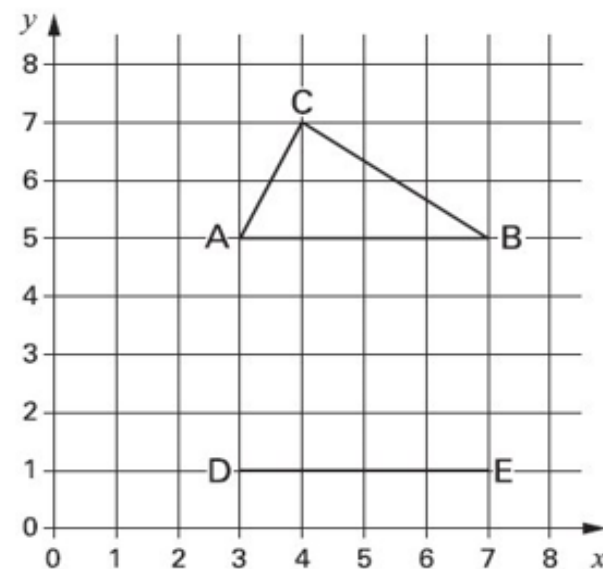
Then Lara translates the quadrilateral **4 squares to the right**.

Draw the quadrilateral in its new position on the grid.

1 mark

Q2.

Kyle has drawn triangle ABC on this grid.



Holly has started to draw an identical triangle DEF.

What will be the coordinates of point F?

(,)

1 mark

Q3.

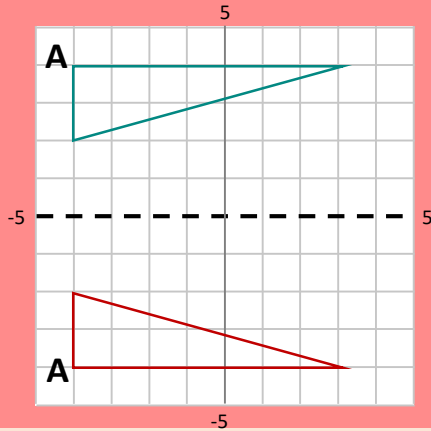
Here is a shape on a grid.

The shape is translated so that point A moves to $(7, 8)$.

Draw the shape in its new position.

Use a ruler.

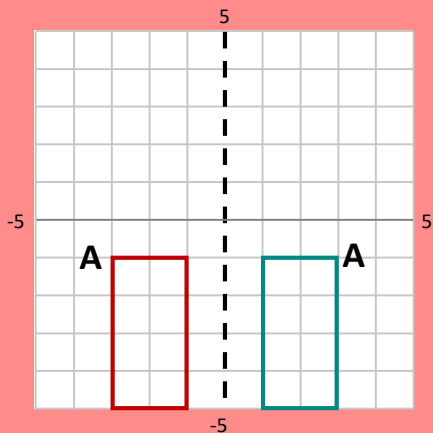
Reflection



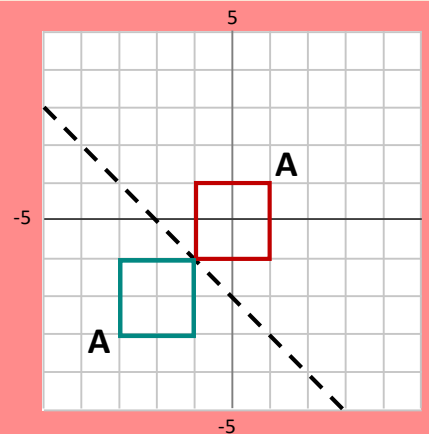
When the triangle is reflected over the x-axis, the coordinate position of A changes from $(-4, 4)$ to $(-4, -4)$.

Top Tip!

When the y-axis is the mirror line, the x-axis coordinates reverse their sign. When the x-axis is the mirror line, the y-axis coordinates reverse their sign.



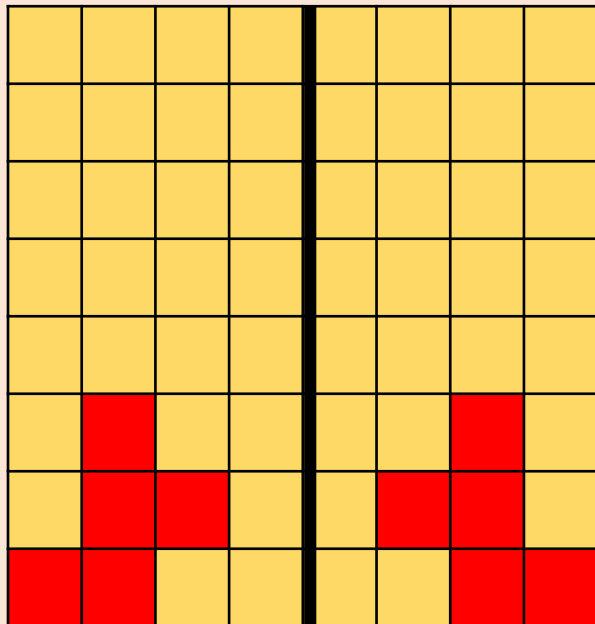
When the rectangle is reflected over the y-axis, the coordinate position of A changes from $(3, -1)$ to $(-3, -1)$.



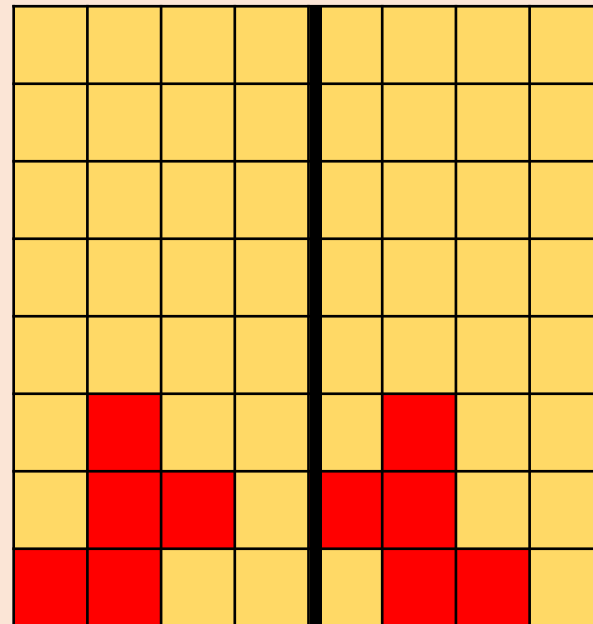
When the square is reflected over the diagonal mirror line, the coordinate position of A changes from $(-3, -3)$ to $(1, 1)$.

Which letter shows accurate reflection?

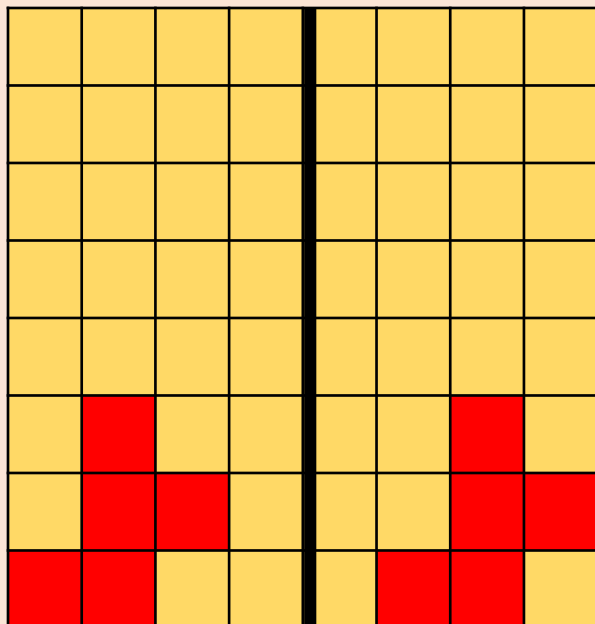
A



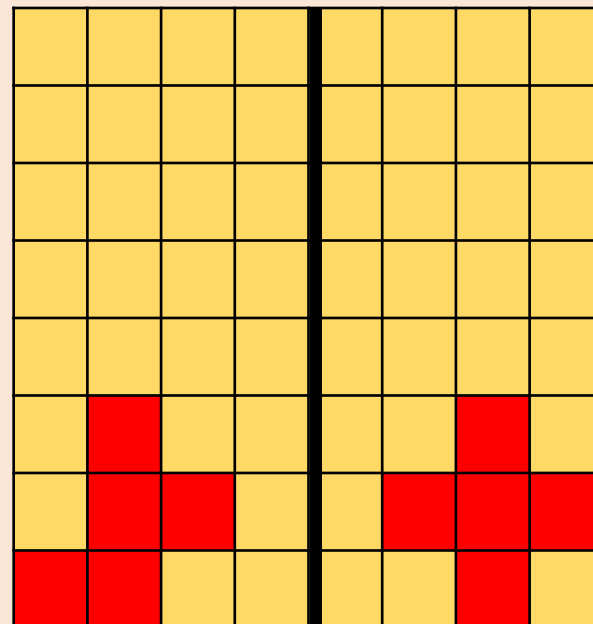
B



C

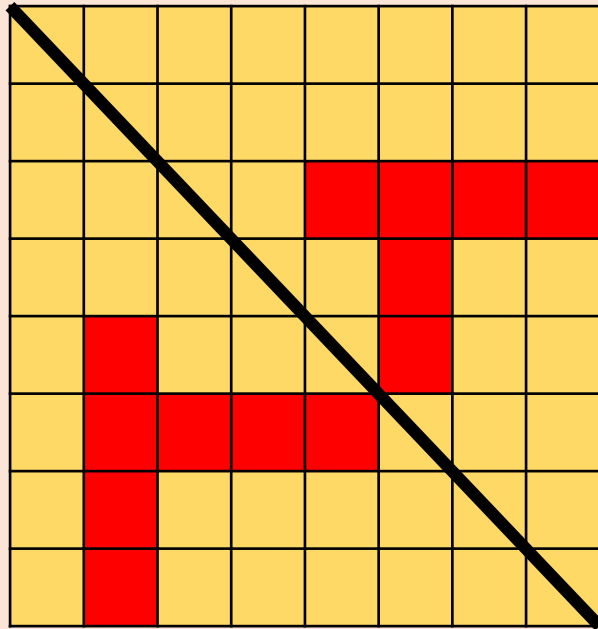


D

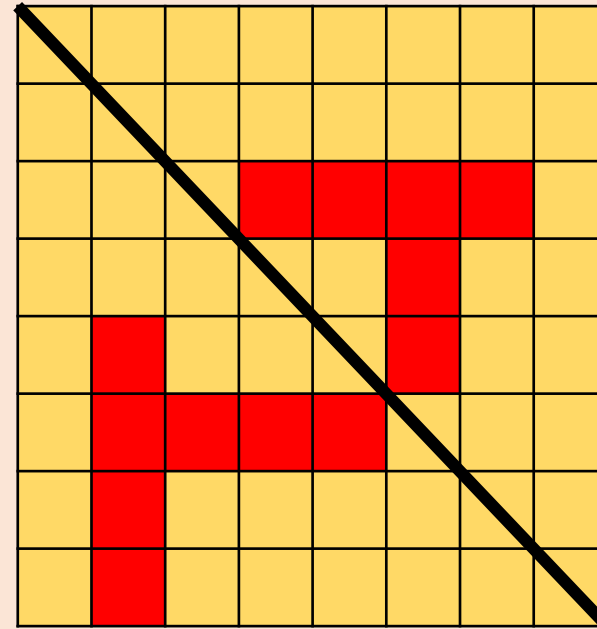


Which letter shows accurate reflection?

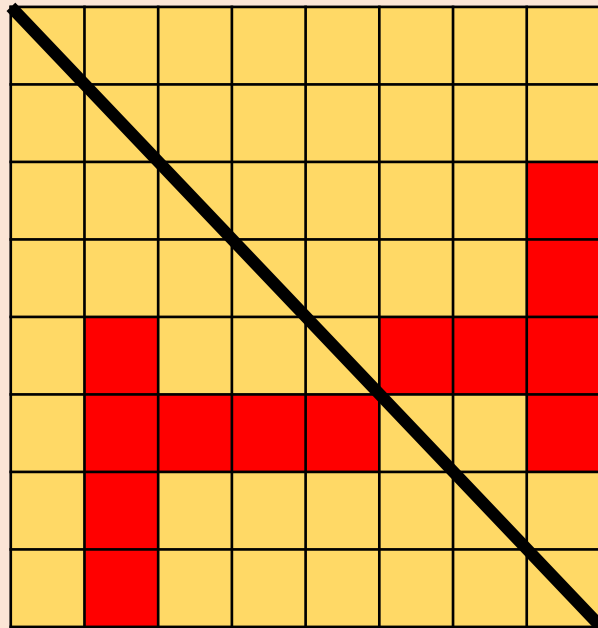
A



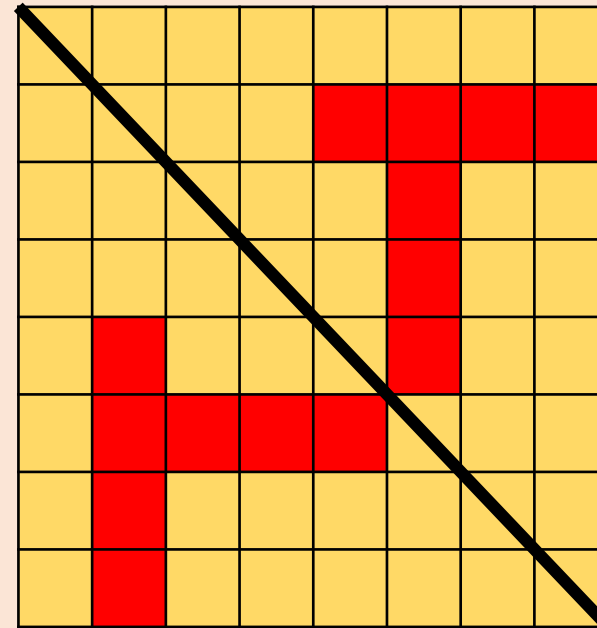
B



C

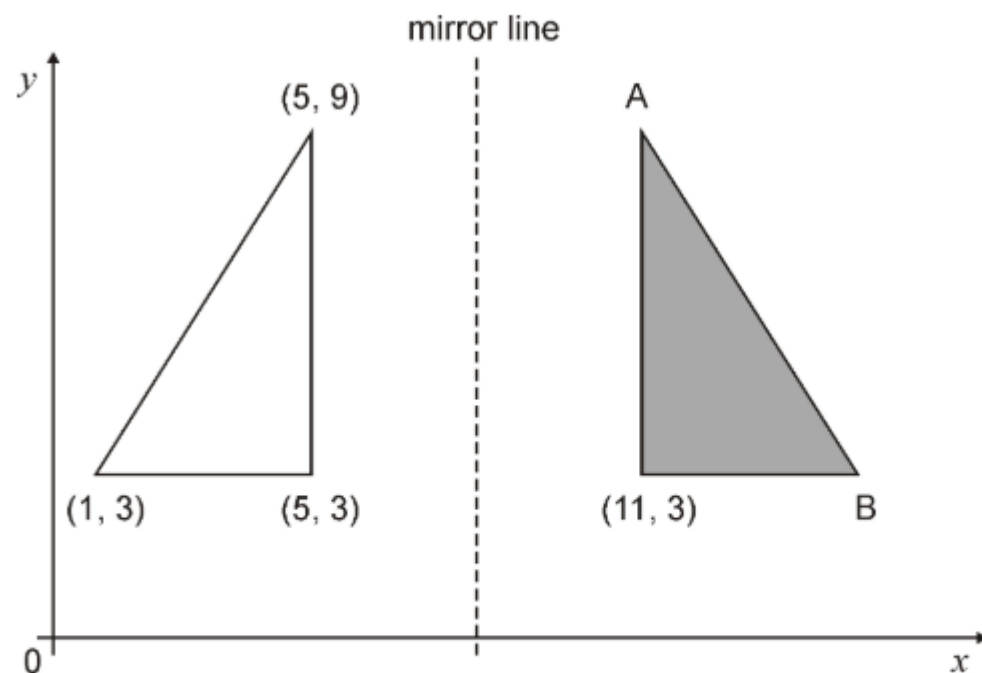


D



Reflection

The shaded triangle is a reflection of the white triangle in the mirror line.



(a) $(11, 9)$

(b) $(15, 3)$

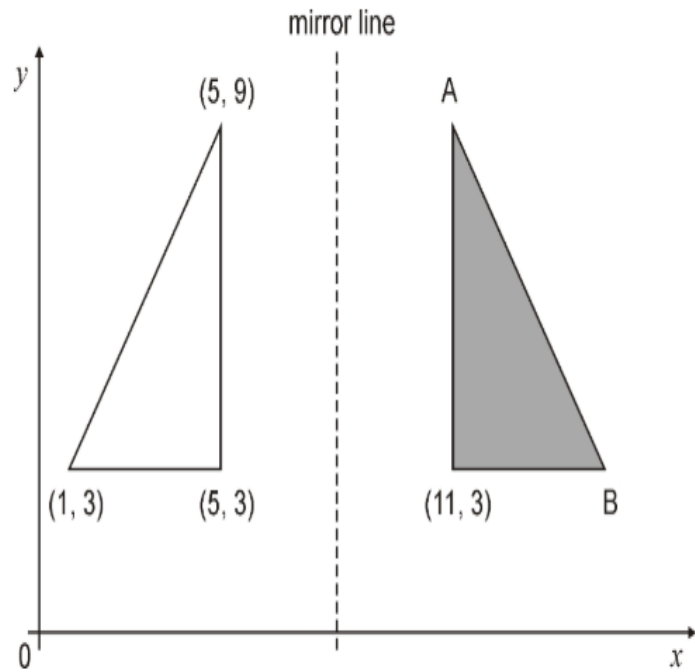
Accept answers written on the diagram with or without brackets and commas. Co-ordinates must be in the correct order.

Write the **co-ordinates** of point **A** and point **B**.

A is

B is

The shaded triangle is a reflection of the white triangle in the mirror line.

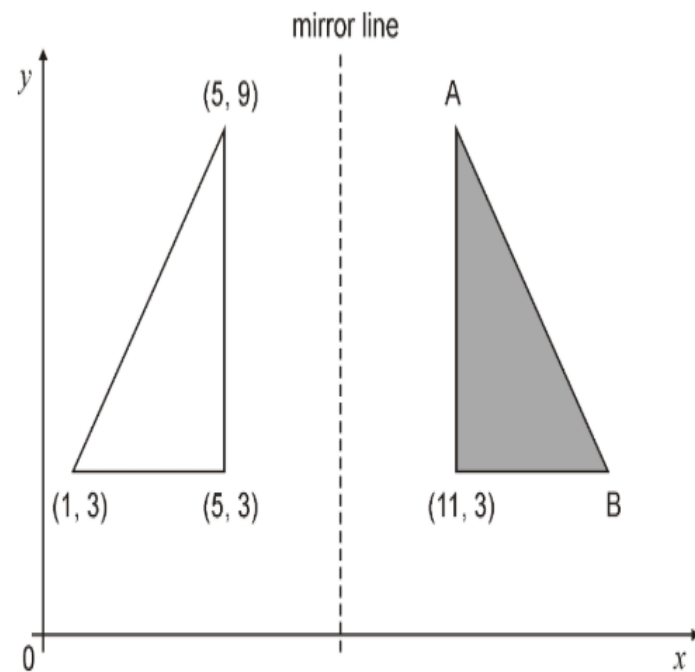


Write the **co-ordinates** of point **A** and point **B**.

A is (,)

B is (,)

The shaded triangle is a reflection of the white triangle in the mirror line.

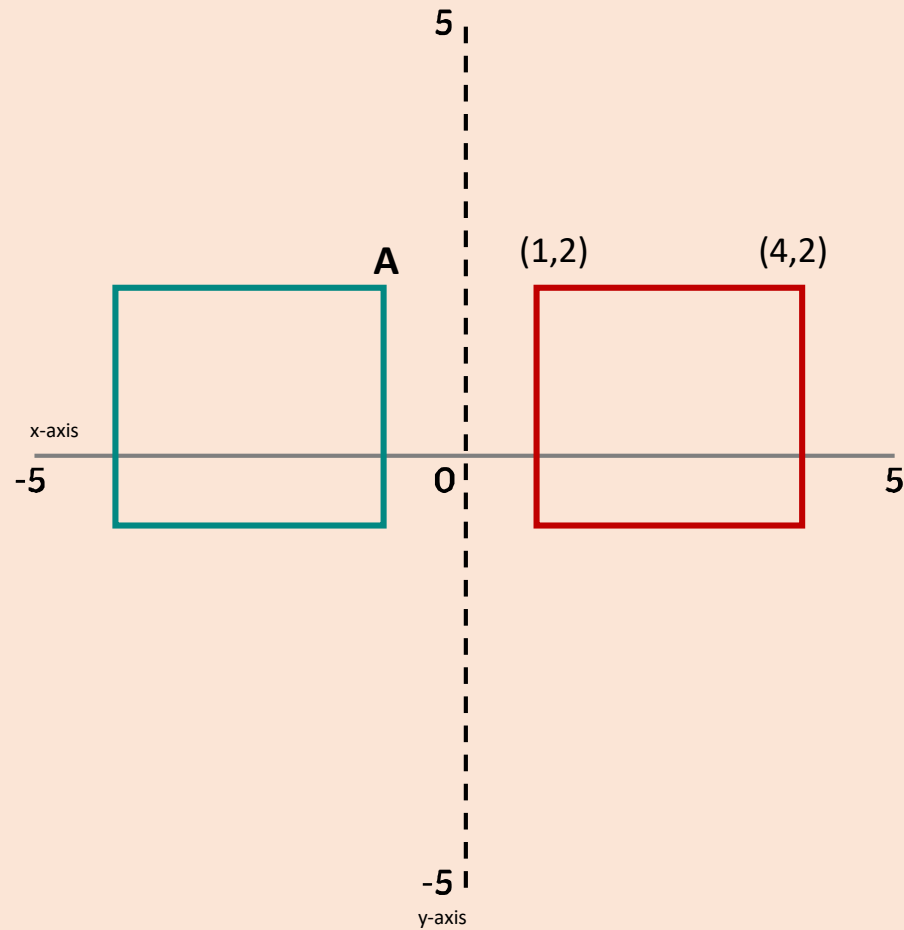


Write the **co-ordinates** of point **A** and point **B**.

A is (,)

B is (,)

Reflection



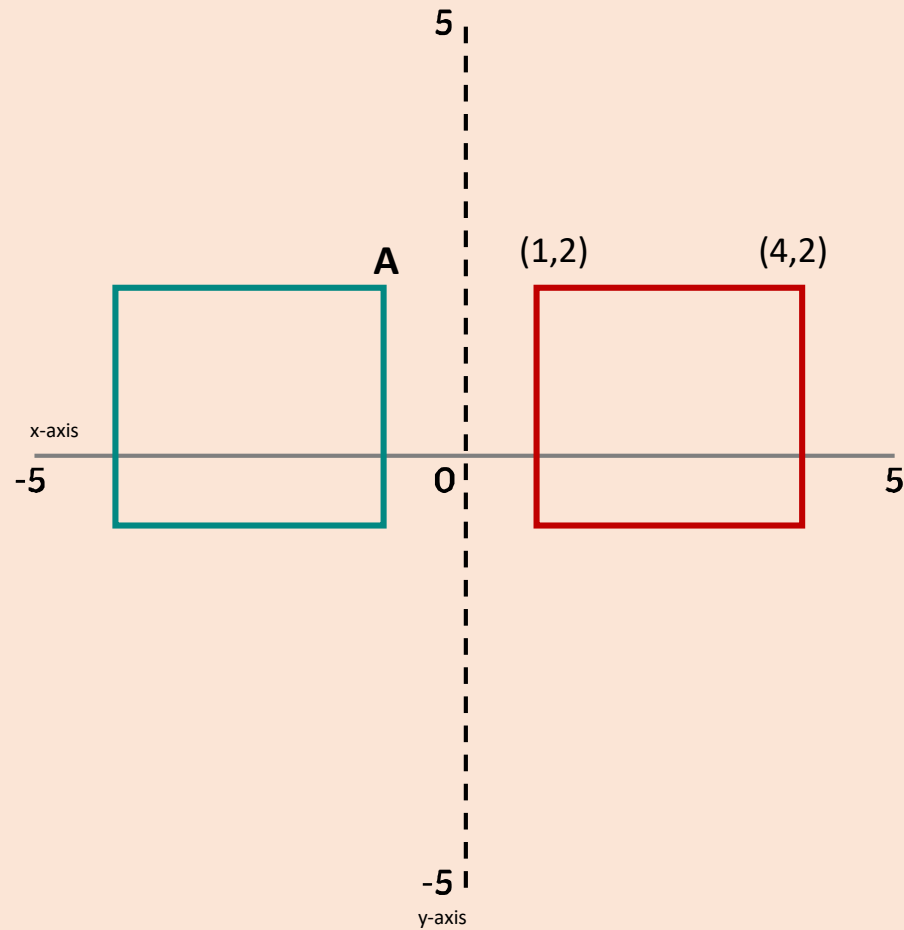
What is the coordinate position of A?

$(-1,-2)$

$(1,-2)$

$(-1,2)$

Reflection



What is the coordinate position of A?

$(-1,-2)$

$(1,-2)$

$(-1,2)$

1) This shape is reflected in the y-axis.

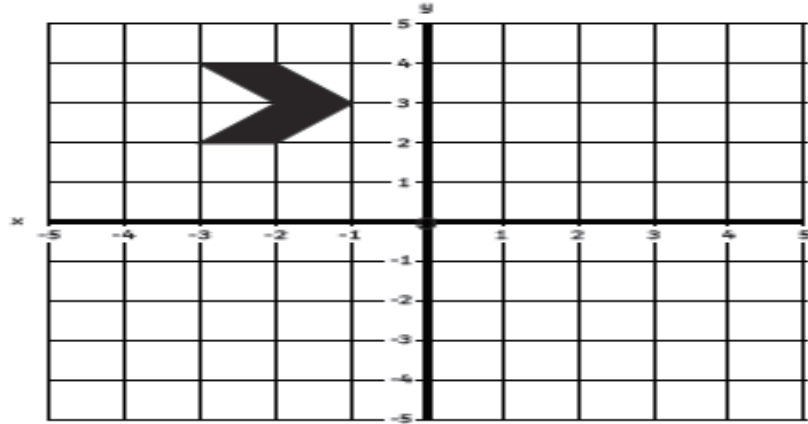
a) Copy the grid onto squared paper and draw the reflection of the shape.

b) Give the coordinates of the reflected shape.

2) The original shape is now reflected in the x-axis.

a) Draw the reflection of the shape.

b) Give the coordinates of the reflected shape.



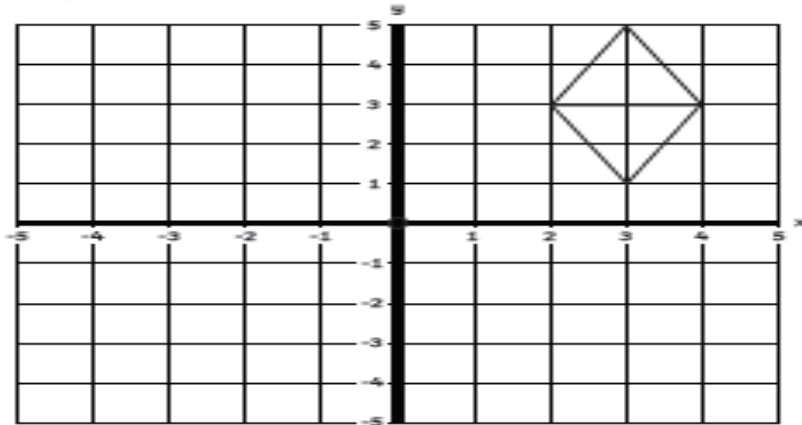
3) This shape is translated two squares to the left and then reflected in both axes.

a) Copy the grid onto squared paper and draw the translated shape, after it has been reflected in the y-axis.

b) Give the coordinates of this shape.

c) Draw the translated shape on your grid, after it has been reflected in the x-axis.

d) Give the coordinates of this shape.



Over to you – Hex, Squares and Triangles

Daily Maths Meeting



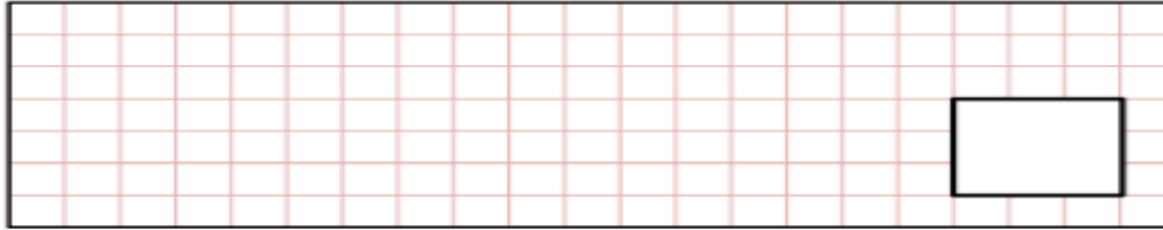
Wednesday- Fractions



What do you know about Fractions?!

7
[2017]

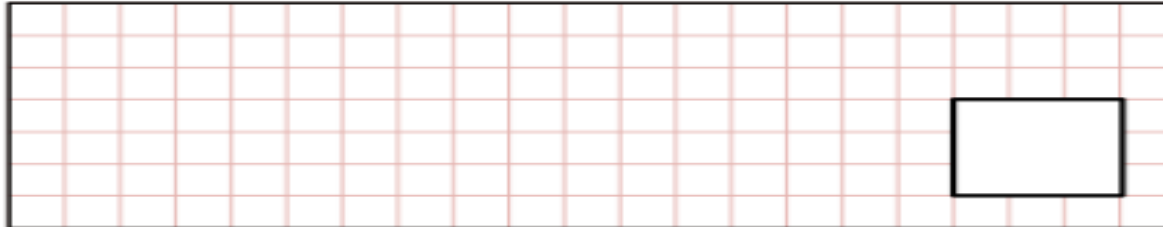
$$\frac{2}{6} - \frac{1}{8} =$$



[1 mark]

8
[2016S]

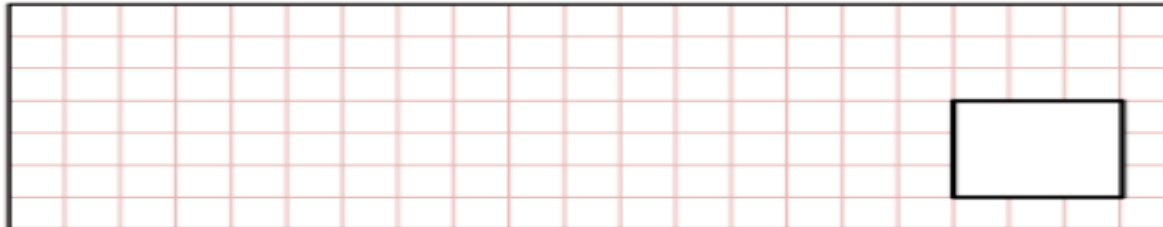
$$\frac{3}{4} + \frac{2}{5} =$$



[1 mark]

9
[2017]

$$\frac{1}{4} + \frac{1}{5} + \frac{1}{10} =$$



[1 mark]

25
[2017]

$$\frac{4}{6} \times \frac{3}{5} =$$

A grid of 20 columns and 5 rows of squares. A rectangular box is located in the bottom right corner, spanning 4 columns and 2 rows.

[1 mark]

26
[2017]

$$\frac{4}{5} \div 4 =$$

A grid of 20 columns and 5 rows of squares. A rectangular box is located in the bottom right corner, spanning 4 columns and 2 rows.

[1 mark]

27
[2016]

$$\frac{3}{5} \div 3 =$$

A grid of 20 columns and 5 rows of squares. A rectangular box is located in the bottom right corner, spanning 4 columns and 2 rows.

[1 mark]



15

[2002]

Tick (✓) two cards that give a total of 5.

$1\frac{1}{4}$

$1\frac{1}{2}$

$1\frac{3}{4}$

$3\frac{1}{2}$

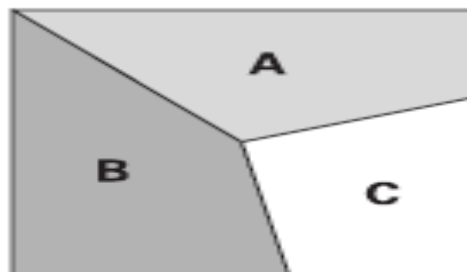
$3\frac{3}{4}$

[1 mark]

16

[2002]

This square is divided into three parts.

Part A is $\frac{1}{3}$ of the area of the square.Part B is $\frac{2}{5}$ of the area of the square.

What fraction of the area of the square is part C?

A large rectangular grid with red lines, 10 units wide and 6 units high. In the bottom right corner, there is a smaller, empty rectangular box with a black border, intended for the student to write their answer.

[2 marks]

Thurs -Volume- Squares and Triangles only

Calculating and Estimating Volume

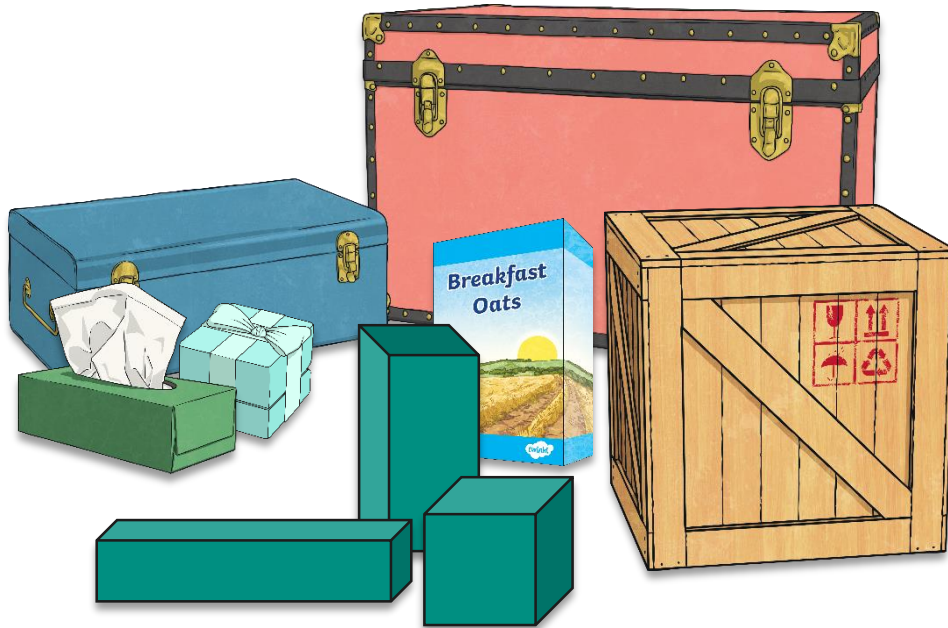


LO: To revise volume

What Is Volume?

With your partner, write a definition for volume.

Volume = the amount of 3D space taken up by something.



When measuring the volume of a fixed object (where the shape doesn't change), we use cubic units. Today we are going to use cubic centimetres and cubic metres to measure and estimate the volume of cubes and cuboids.

Crucial Vocabulary

Volume

Knowledge Organiser

Key Vocabulary

Volume of Cubes and Cuboids

cubed

area

cross-section

prism

cube

cuboid

face

length

height

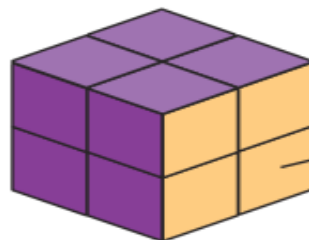
width

depth

Volume is measured in cubed units. For example, **cm³**, **m³** and **km³**.

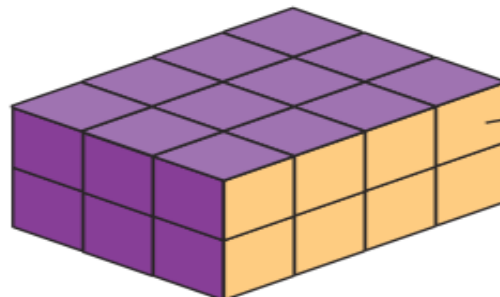
To calculate the volume of cubes and cuboids:

1. Calculate the area of the cross-section (one face).
2. Multiply the area of the cross-section (one face) by its depth.



Area of cross section (face) = $2\text{cm} \times 2\text{cm} = 4\text{cm}^2$

$4\text{cm}^2 \times 2\text{cm} = \text{Volume of } 8\text{cm}^3$

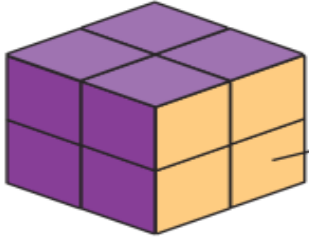
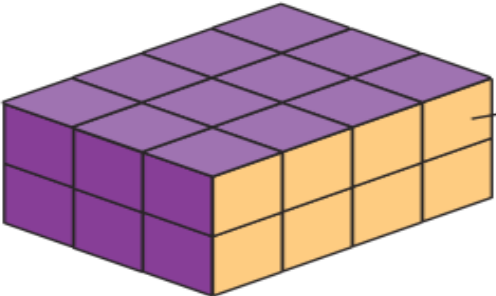


Area of cross section (face) = $4\text{cm} \times 2\text{cm} = 8\text{cm}^2$

$8\text{cm}^2 \times 3\text{cm} = \text{Volume of } 24\text{cm}^3$



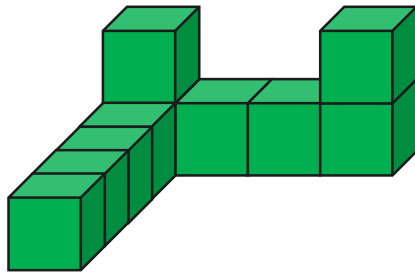
Crucial Vocabulary

Volume	Knowledge Organiser
Key Vocabulary	Volume of Cubes and Cuboids
cubed	Volume is measured in cubed units. For example, cm³, m³ and km³. To calculate the volume of cubes and cuboids: 1. Calculate the area of the cross-section (one face). 2. Multiply the area of the cross-section (one face) by its depth. 
area	
cross-section	
prism	
cube	 Area of cross section (face) = $2\text{cm} \times 2\text{cm} = 4\text{cm}^2$ $4\text{cm}^2 \times 2\text{cm} = \text{Volume of } 8\text{cm}^3$ 
cuboid	
face	
length	
height	 Area of cross section (face) = $4\text{cm} \times 2\text{cm} = 8\text{cm}^2$ $8\text{cm}^2 \times 3\text{cm} = \text{Volume of } 24\text{cm}^3$ 
width	
depth	
 visit twinkl.com	

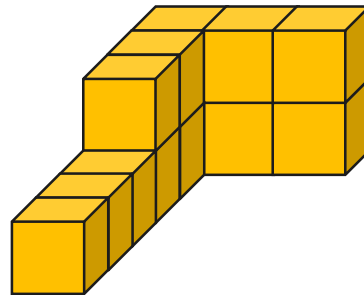
What Is Volume?

We can find the volume of these shapes made from 1cm^3 multilink cubes by counting the number of 1cm^3 cubes that make up each shape.

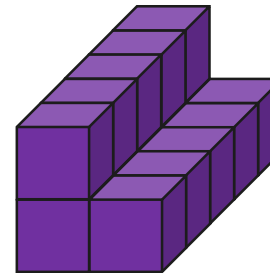
Remember that some shapes have cubes that are hidden from sight!



10cm^3



13cm^3

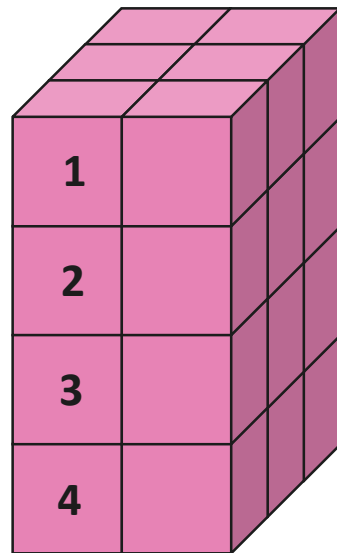


15cm^3



Calculating Volume of Cubes and Cuboids

We can calculate the volume of cubes and cuboids by counting cubes in layers:



In the top layer, there are 6 cubes (3×2).

There are 4 layers.

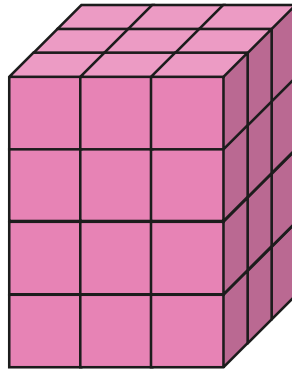
$$3 \times 2 \times 4 = 24$$

If each cube were a cubic centimetre, this would be 24 cubic centimetres, which we could write as 24cm^3 .



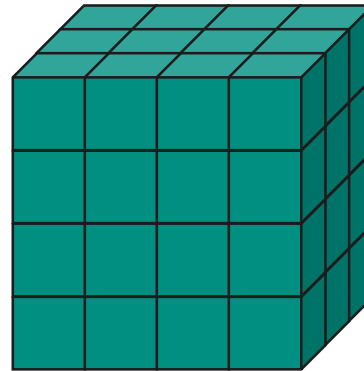
Calculating Volume of Cubes and Cuboids

Count the top layer of each shape and calculate the volume. The unit measurement is shown underneath.



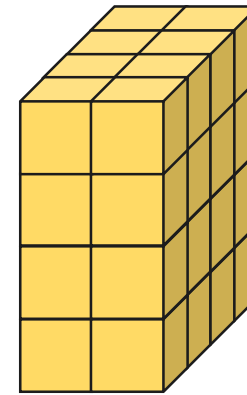
cubic centimetres

$$36\text{cm}^3$$



cubic metres

$$48\text{m}^3$$



cubic centimetres

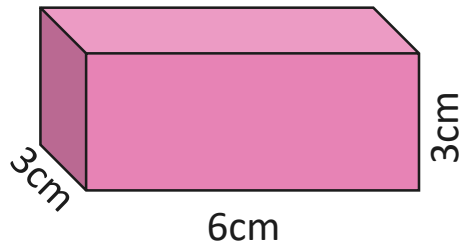
$$32\text{cm}^3$$



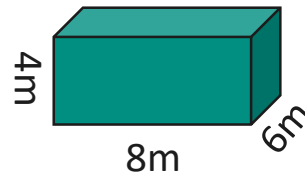
Calculating Volume of Cubes and Cuboids

Do you know another way to calculate the volume of cubes and
 $\text{length} \times \text{width} \times \text{height}$

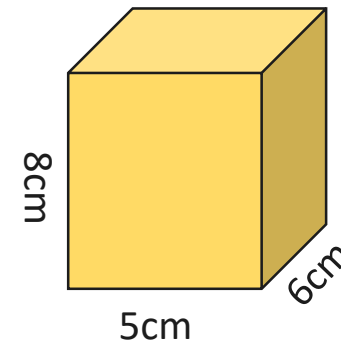
Use the formula to calculate the volume of the following shapes.



$$54\text{cm}^3$$



$$192\text{m}^3$$

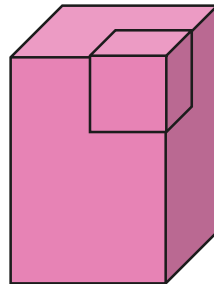


$$240\text{cm}^3$$

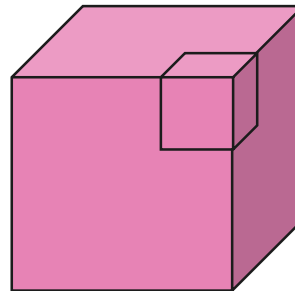


Calculating Volume of Cubes and Cuboids

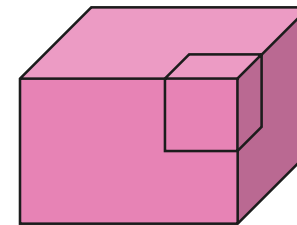
On these shapes, one cube has been drawn.
Each cube is a cubic centimetre. Estimate the volume.



12cm^3



27cm^3



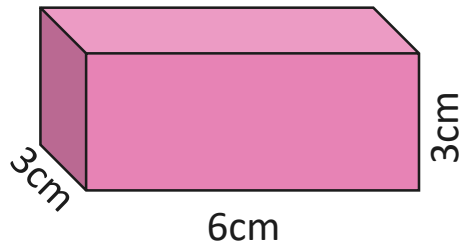
18cm^3



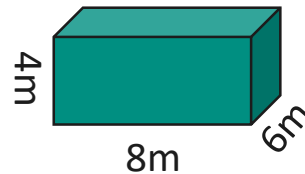
Calculating Volume of Cubes and Cuboids

Do you know another way to calculate the volume of cubes and
 $\text{length} \times \text{width} \times \text{height}$

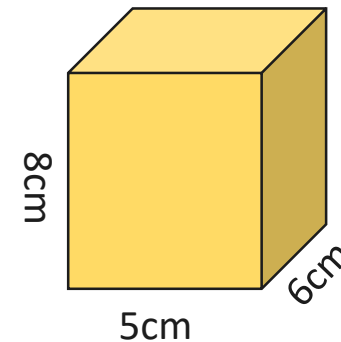
Use the formula to calculate the volume of the following shapes.



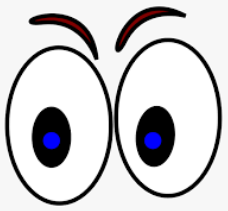
$$54\text{cm}^3$$



$$192\text{m}^3$$



$$240\text{cm}^3$$



RECAP..

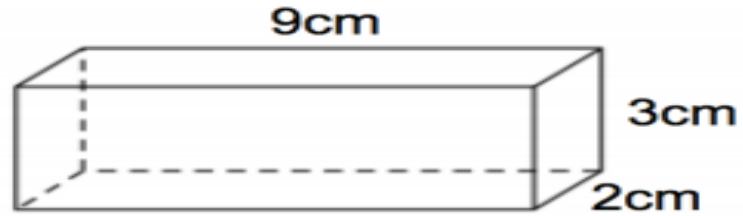
<https://corbettmathsprimary.com/2018/07/20/volume-of-a-cuboid-video/>



Guided

1.

Shown below is a cuboid.

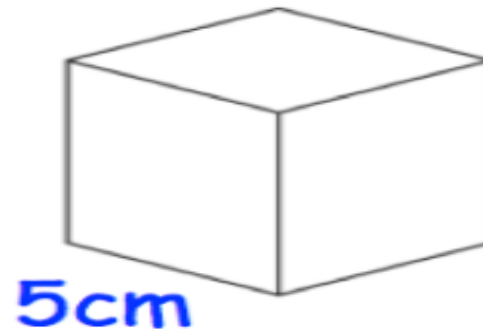


Find the volume of the cuboid.
Include units.

.....
(2)

2.

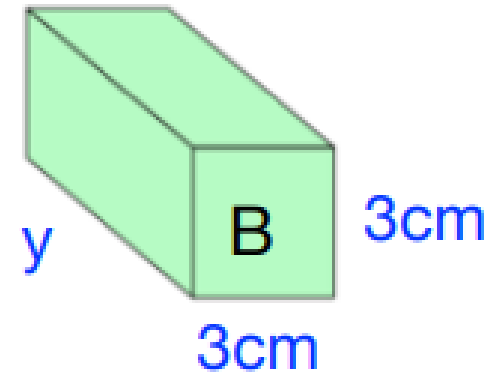
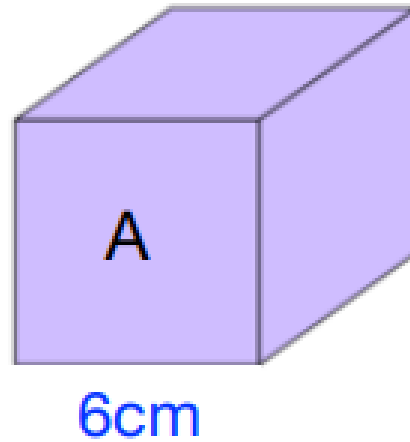
Shown below is a cube.



Find the volume of the cube.
Include units.

Guided

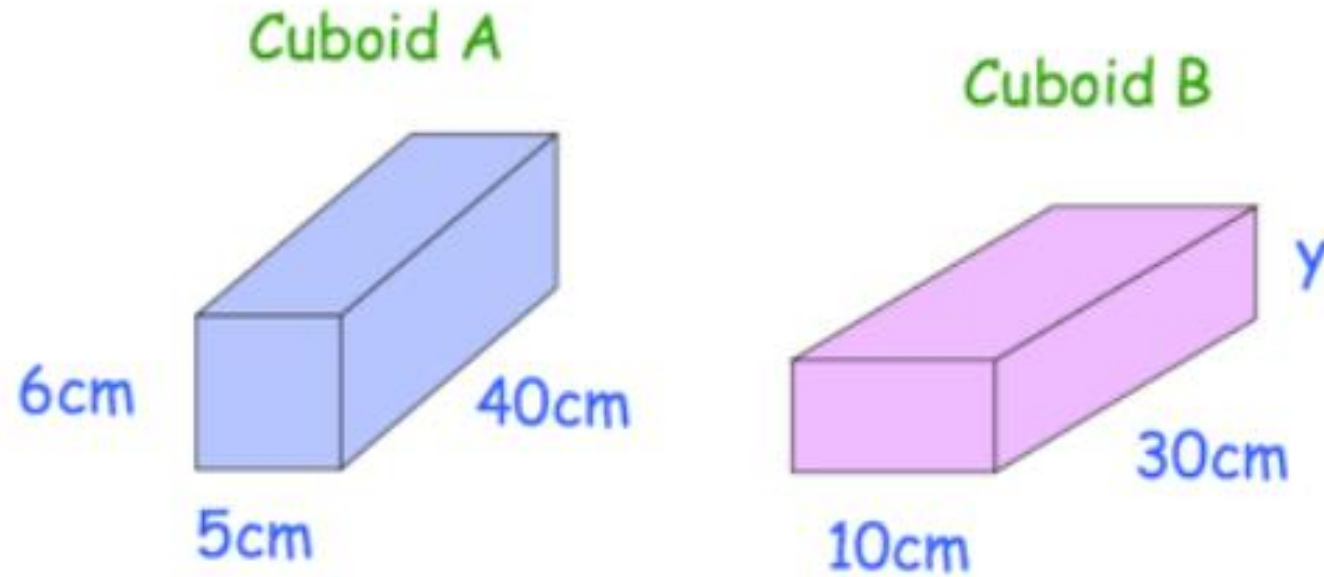
9. Cube A and cuboid B have the same volume.



Calculate the missing length on the cuboid, y

Guided

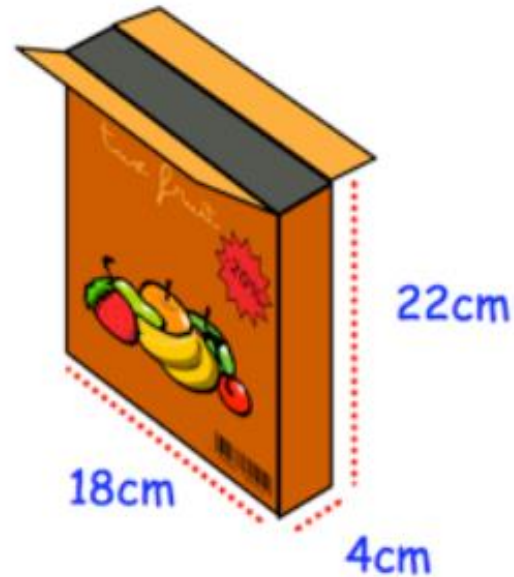
10. Cuboid A and Cuboid B have the same volume



Calculate the missing height of the cuboid B

Over to you...

11. A box has a length of 18 centimetres, a width of 4 centimetres and a height of 22 centimetres.



Work out the volume of the box

Daily Maths Meeting

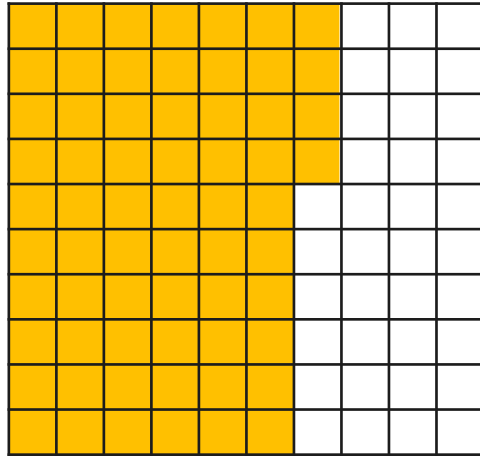


Thursday
Frac, dec, % equivalent

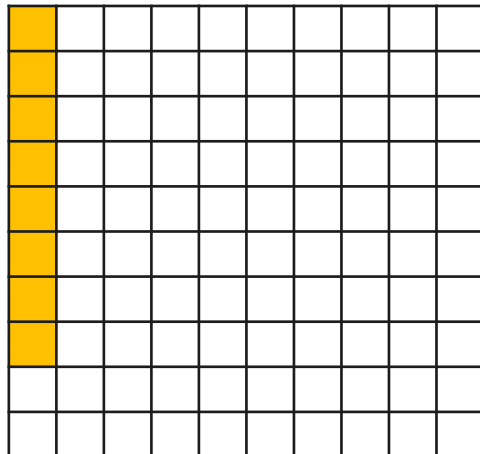




Complete the statements.



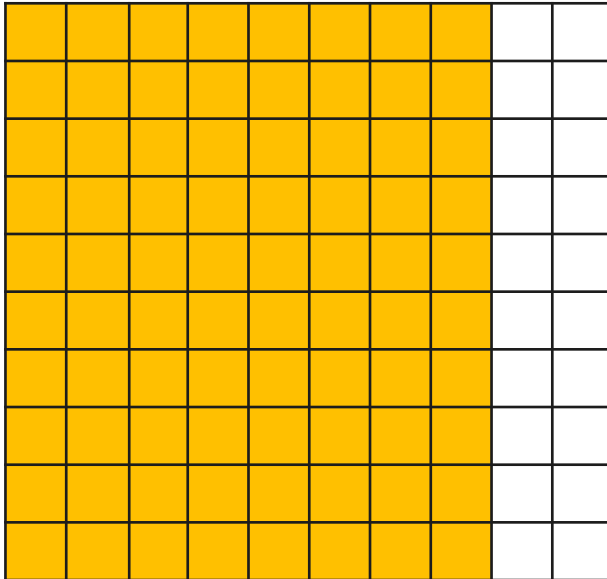
$$= \boxed{64} \text{ parts per 100 coloured in.} = \boxed{64\%} = \frac{\boxed{64}}{\boxed{100}} = 0.64$$



$$= \boxed{8} \text{ parts per 100 coloured in.} = \boxed{8\%} = \frac{\boxed{8}}{\boxed{100}} = \boxed{0.08}$$



Which is the odd one out?
Why?



80%

0.08

80 parts per 100

$\frac{80}{100}$

The decimal 0.08 is the odd one out as it is equivalent to 8%. The other amounts are all 80% or equivalent.



True or false?

$$\frac{42}{100} < 0.8 > 14\%$$

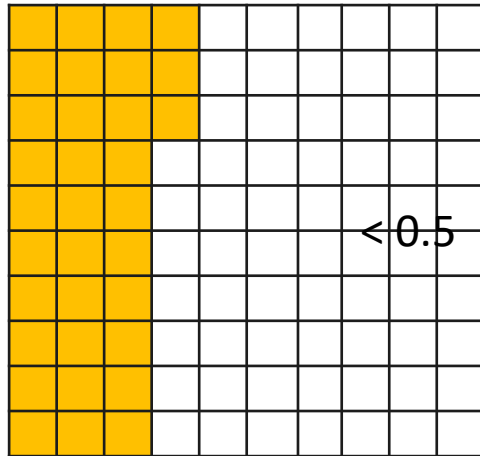
True.

$$30 \text{ parts per hundred} > 4\% > 0.3$$

False.

4% = 0.04 which is not greater than 0.3 so this is false.

$$18\% <$$



$$< 0.5$$

True.



Which numbers fill the table to make it correct?

Fraction	Fraction with a Denominator of 100	Percentage	Decimal
$\frac{40}{50}$	$\frac{80}{100}$	80 %	0.8 or 0.80
$\frac{30}{50}$	$\frac{60}{100}$	60 %	0.6 or 0.60
$\frac{80}{200}$	$\frac{40}{100}$	40 %	0.4 or 0.40
$\frac{130}{200}$	$\frac{65}{100}$	65 %	0.65

2

20% of 1,800 =

[2016]

A rectangular grid consisting of 20 columns and 10 rows of small squares. A white rectangular box is positioned in the bottom right corner of the grid, spanning 5 columns and 2 rows.

[1 mark]

3

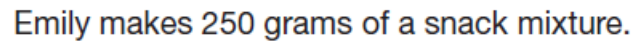
60% of 765 =

[2000]

A rectangular grid consisting of 20 columns and 10 rows of small squares. A white rectangular box is positioned in the bottom right corner of the grid, spanning 5 columns and 2 rows.

[1 mark]

[2008]



How many grams of **peanuts** does she use?

30

20% of 568

--

31

7% $\times$ 662 =

--