

Our Maths Learning Journey

Key vocabulary:

Quarter turn

Half turn

Clockwise

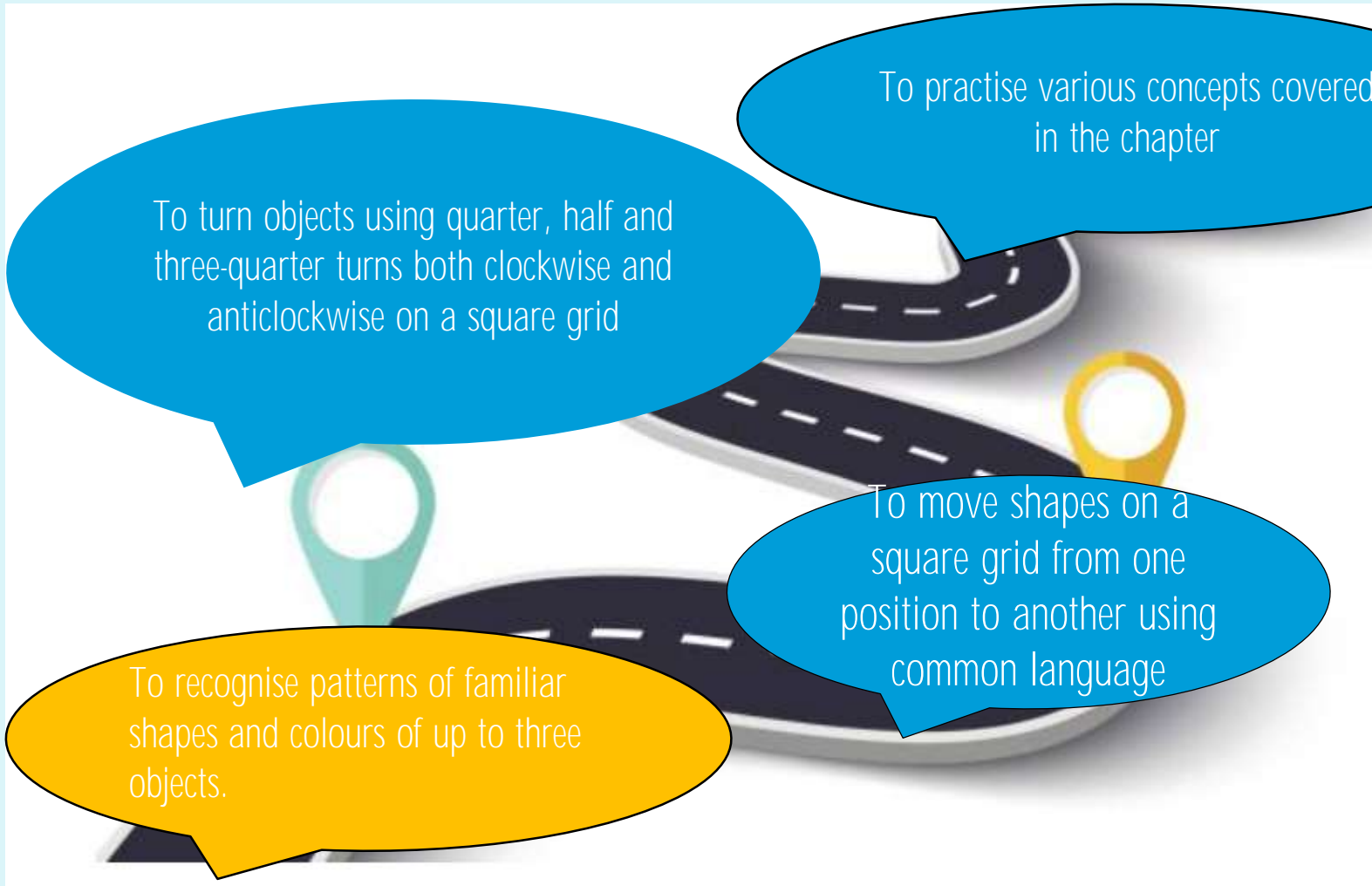
Anticlockwise

To turn objects using quarter, half and three-quarter turns both clockwise and anticlockwise on a square grid

To practise various concepts covered in the chapter

To move shapes on a square grid from one position to another using common language

To recognise patterns of familiar shapes and colours of up to three objects.



26.02.2024

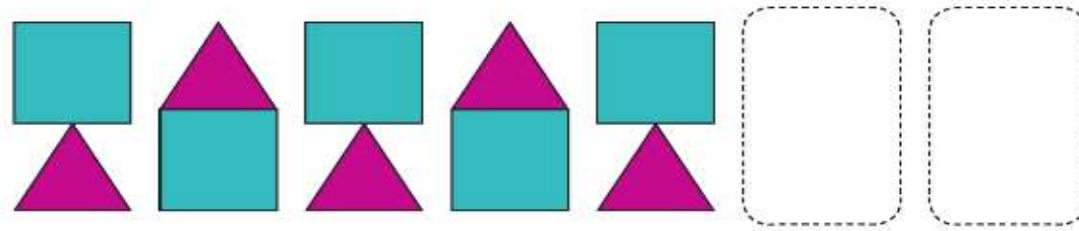
Challenge of the week



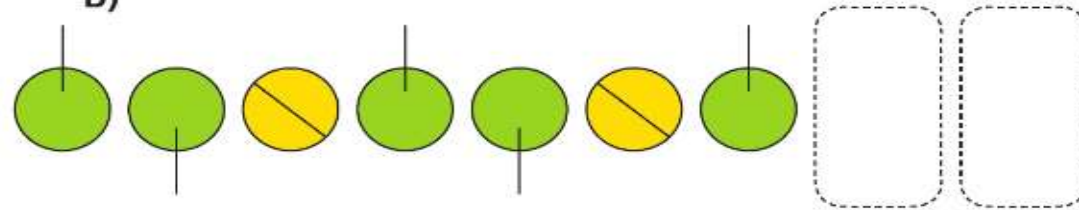
- 3** Describe each pattern to your partner.
Draw the missing shapes for each pattern.



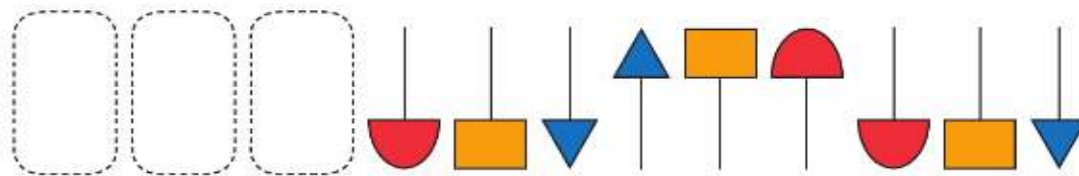
a)



b)



c)



Mental Maths

Multiply

$2 \times 2 =$	$4 \times 2 =$	$8 \times 5 =$	$3 \times 10 =$	$5 \times 6 =$	$12 \times 2 =$
$10 \times 4 =$	$2 \times 8 =$	$12 \times 10 =$	$5 \times 5 =$	$9 \times 2 =$	$3 \times 5 =$



26.02.2024

LQ: Can I recognise patterns of familiar shapes?



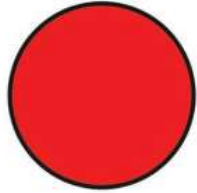
Steps to Success:

I can recognise patterns of 2D shapes.

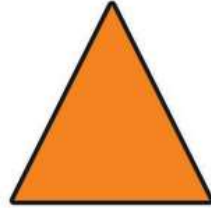
I can make patterns using 2D shapes.

STAR WORDS

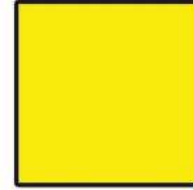
Pattern



circle



triangle



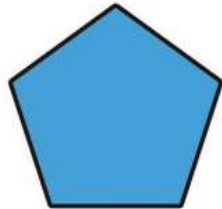
square



rectangle

regular

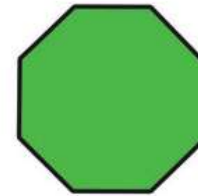
Polygons



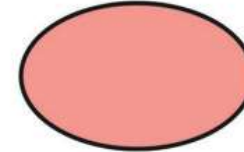
pentagon



hexagon



octagon



oval

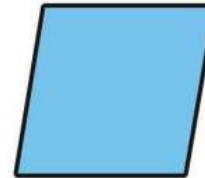
irregular



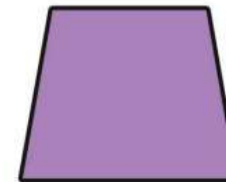
rhombus



semicircle



parallelogram



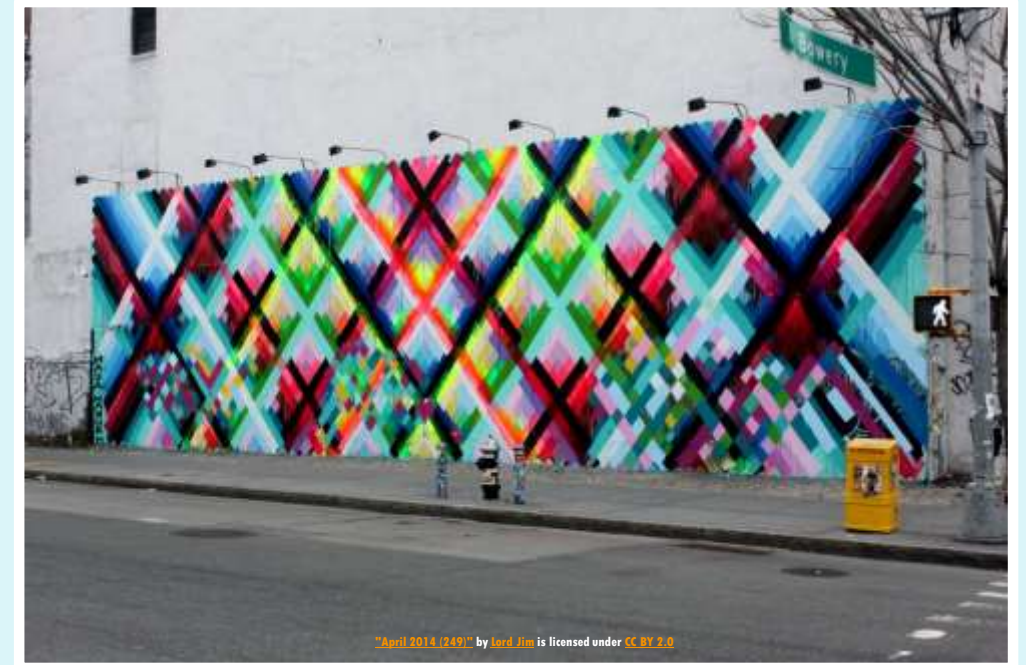
trapezium

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LQ: Can I recognise patterns of familiar shapes?

In Art you are going to discuss street artist Maya Hayuk.

Look at her work. What geometrical shapes and patterns do you recognise?



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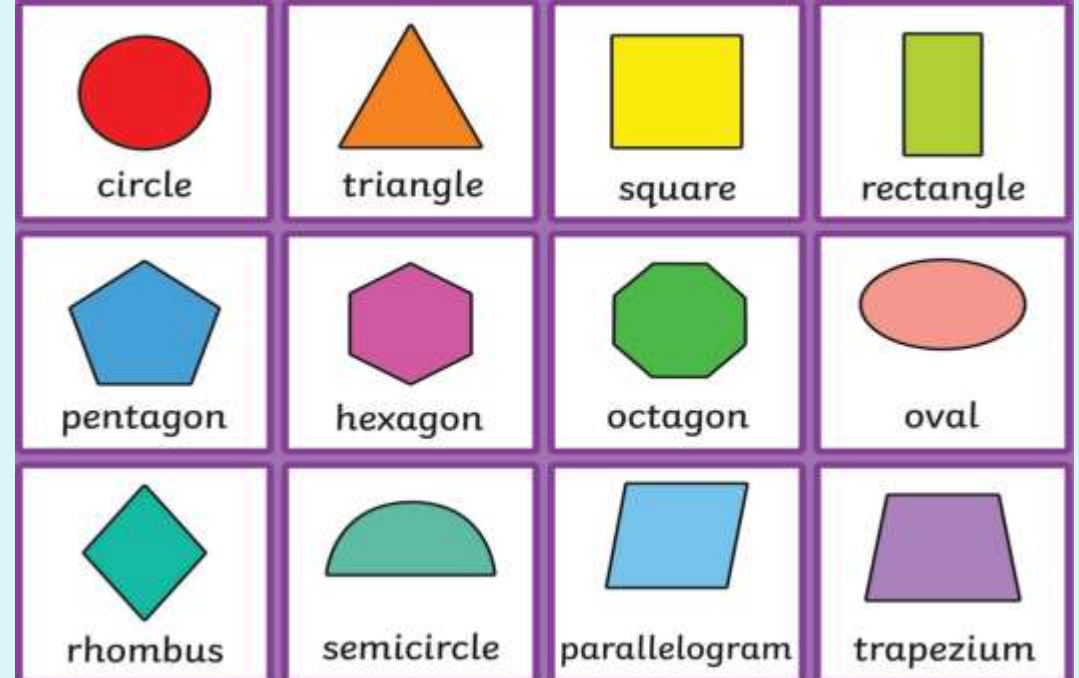
LQ: Can I recognise patterns of familiar shapes?

Let's recap:

Let's recap: <https://www.youtube.com/watch?v=1yID0JzpVo8>

What words would you use to describe the 2D shapes?

2D shapes are flat shapes. They have sides and vertices. Some sides are straight and some are curved. Vertices are the corners.



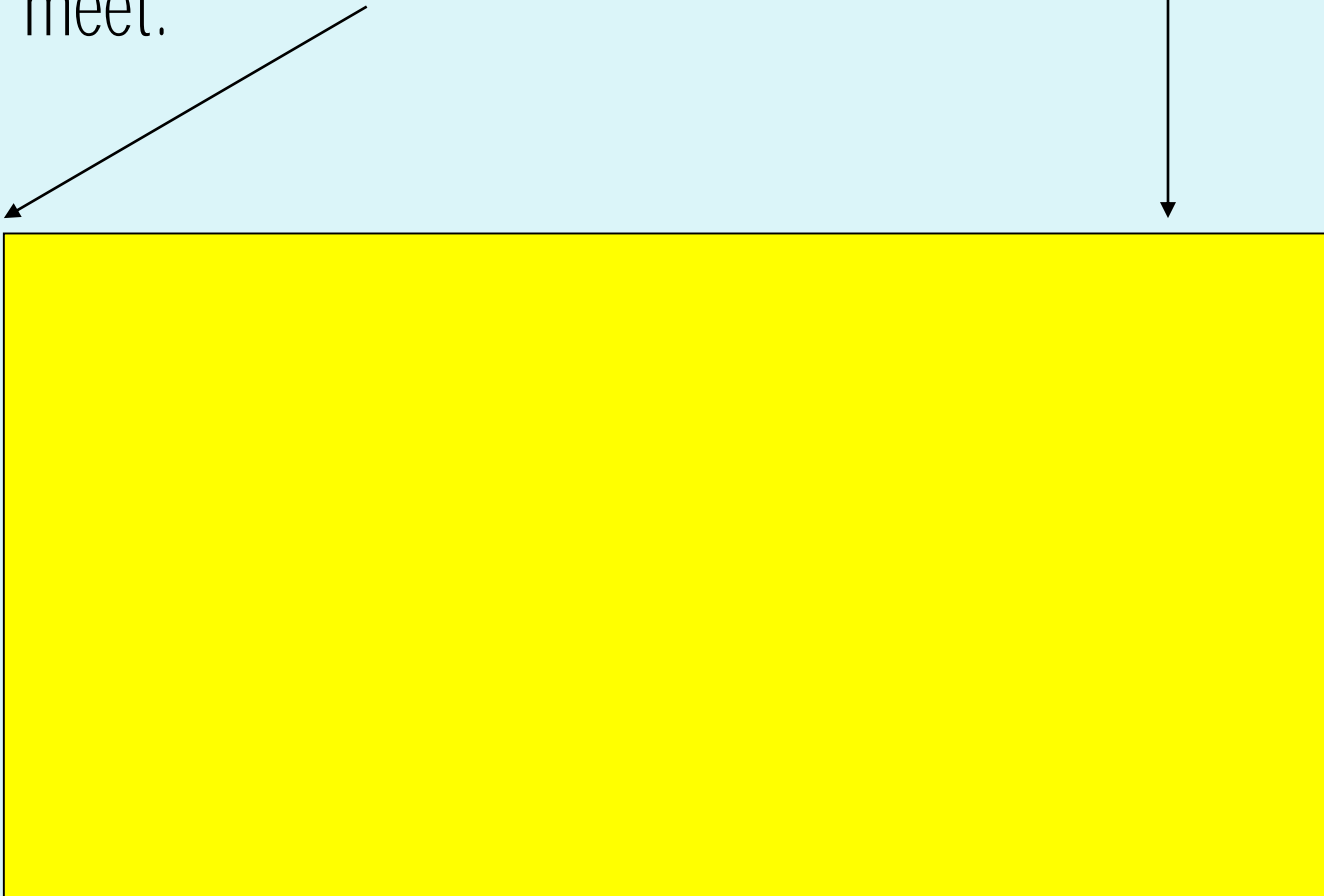
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LQ: Can I recognise patterns of familiar shapes?

2D or Flat Shapes

Corner / vertex – where two sides meet.

Side – the edge of the shape



The Core of the Pattern

Look carefully at these patterns.



In a simple pattern, the **core** might only have 2 shapes.

Tip: Saying the pattern aloud can help you to identify the core. Try it!

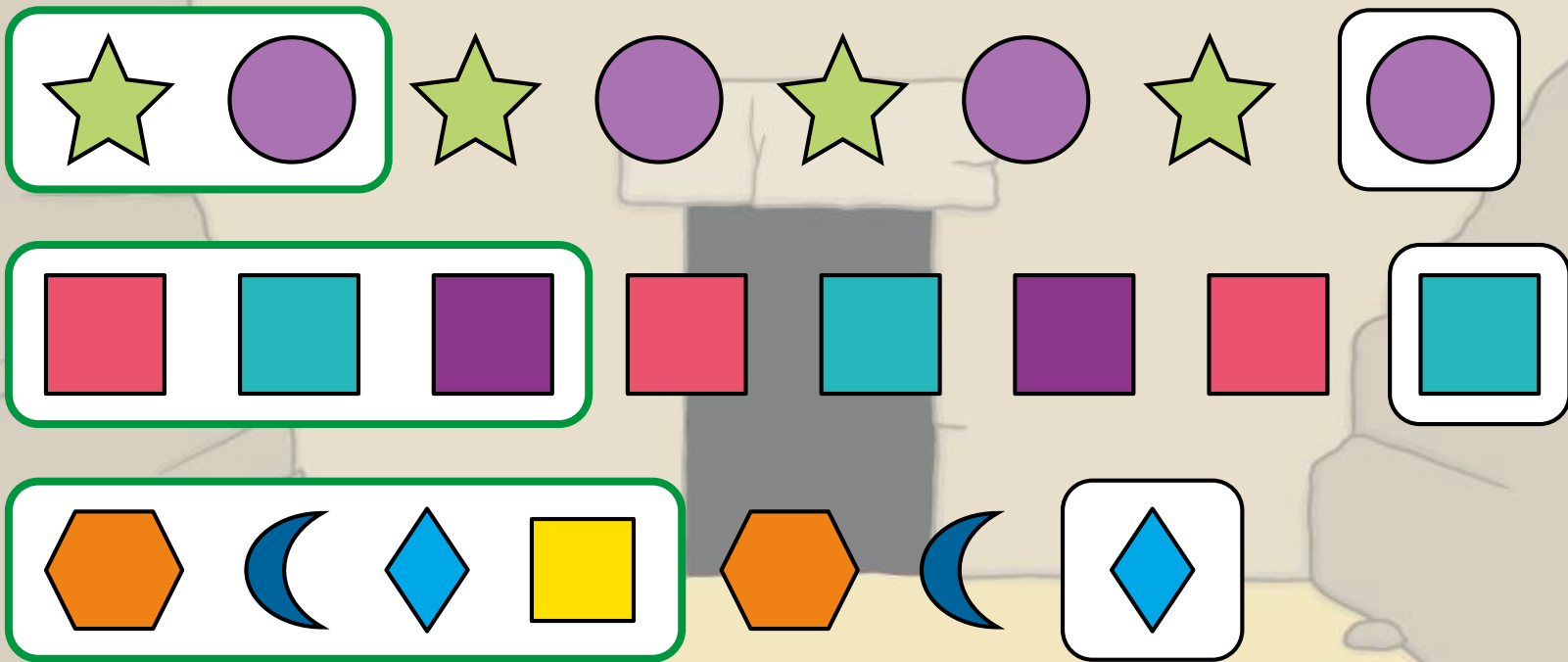


Today we are going to learn how to recognise patterns of familiar shapes.

We will discuss what is core of the pattern, then we will practice to recognise it.

Complete the Pattern

What's the next shape in each pattern?



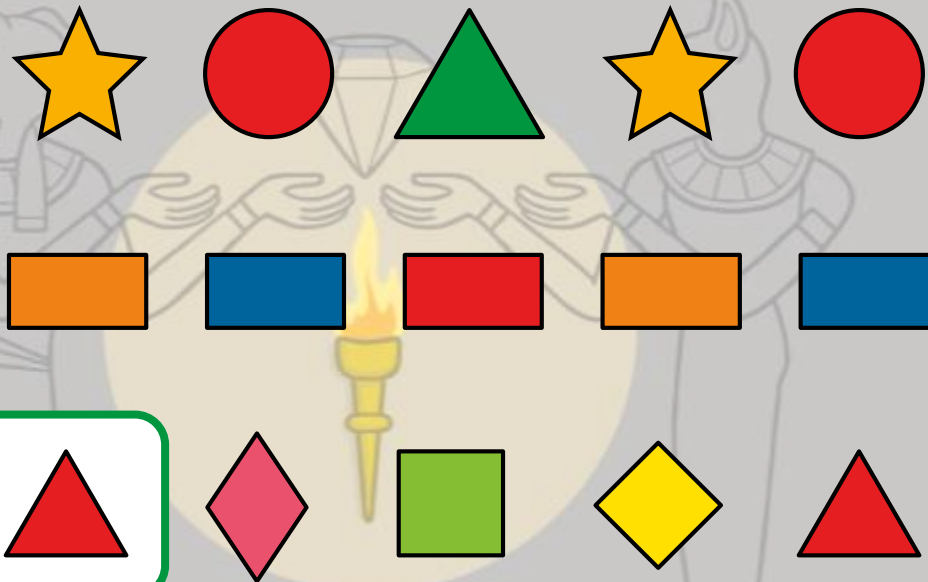
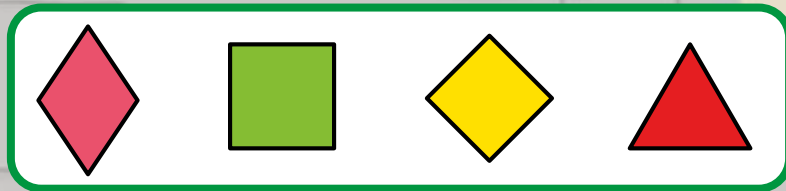
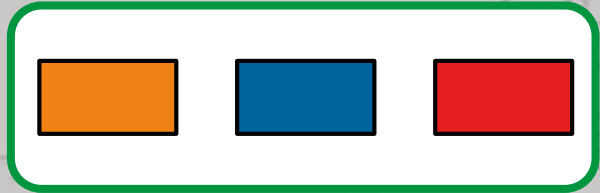
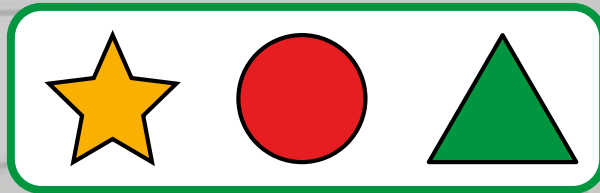
Hint: First, work out what the core is.

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LQ: Can I recognise patterns of familiar shapes?

The Core of the Pattern

Look carefully at these patterns.



Can you spot the core in each pattern?

Hint: Say each pattern aloud to help.

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LQ: Can I recognise patterns of familiar shapes?

Complete the Pattern



What's the next shape in each pattern?

Three patterns of shapes are shown, each with a core of three shapes highlighted by a green border.

Pattern 1: The core consists of a green star, a purple circle, and a green star. The sequence continues with a purple circle, a green star, a purple circle, a green star, and finally a purple circle inside a white square box.

Pattern 2: The core consists of a pink square, a teal square, and a purple square. The sequence continues with a pink square, a teal square, a purple square, a pink square, and finally a teal square inside a white square box.

Pattern 3: The core consists of an orange hexagon, a blue crescent moon, and a blue diamond. The sequence continues with an orange hexagon, a blue crescent moon, and finally a blue diamond inside a white square box.

Hint: First, work out what the core is.

Complete the Pattern



What's the missing shape in each pattern?

Three rows of shapes for pattern completion:

- Row 1:** A green square, a yellow square, and a red triangle are grouped together in a green box. This is followed by a green square, a yellow square, and a red triangle. Then, a green square and a yellow square are each in their own white boxes, with a space between them for the missing shape.
- Row 2:** A purple circle, a purple circle in a white box, and an orange circle are grouped together in a green box. This is followed by a purple circle, a purple circle, and an orange circle. Then, a purple circle, a purple circle, and an orange circle are shown in sequence.
- Row 3:** A blue hexagon, a red rectangle, a red hexagon, and a blue rectangle are grouped together in a green box. This is followed by a blue hexagon, a red rectangle, a red hexagon in a white box, a blue rectangle, and a blue hexagon.

Hint: First, work out what the core is.

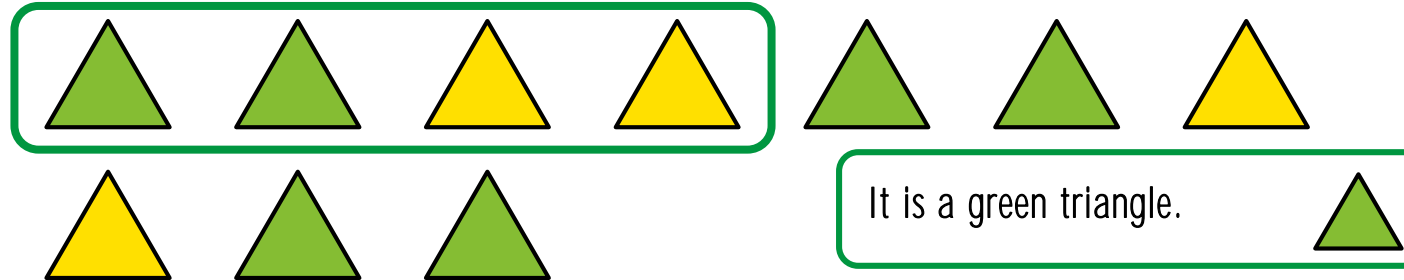
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LQ: Can I recognise patterns of familiar shapes?

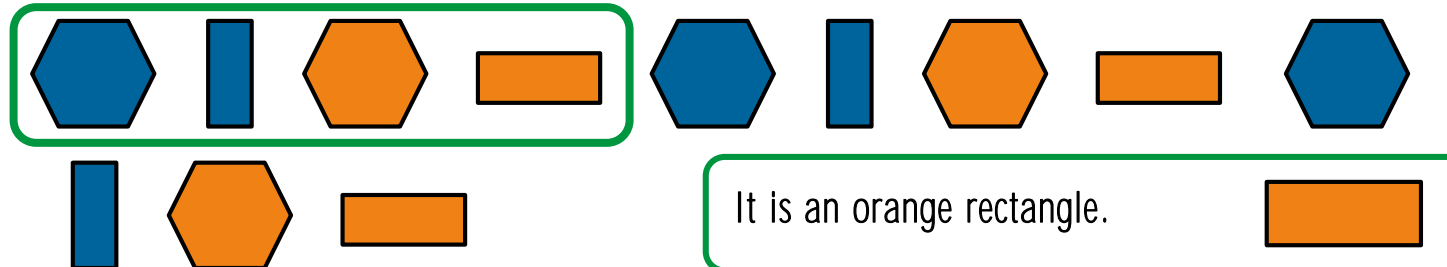
Complete the Pattern



What's the 10th shape in this pattern?



What's the 12th shape in this pattern?



Hint: First, work out what the core is.

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











LQ: Can I recognise patterns of familiar shapes?

TASK

Practical

Look at the sheets on your table. Finish the patterns. Use colouring pencils.

Can you continue the patterns below?

- | | | | | | | | | | |
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Self assessment

Do you understand what to do?



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Mental Maths

Divide

$2 \div 2 =$	$4 \div 2 =$	$50 \div 5 =$	$30 \div 5 =$	$15 \div 5 =$	$12 \div 2 =$
$12 \div 2 =$	$55 \div 5 =$	$90 \div 10 =$	$90 \div 10 =$	$76 \div 2 =$	$30 \div 5 =$



27.02.2024

LQ: Can I complete and make 2D shape patterns?



Steps to Success:

I can identify the core in a 2D shape pattern.

I can complete 2D shape patterns.

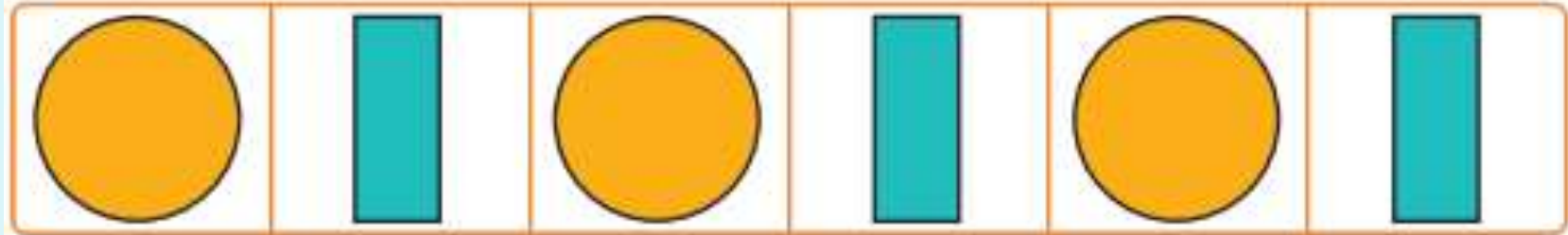
I can make 2D shape patterns.



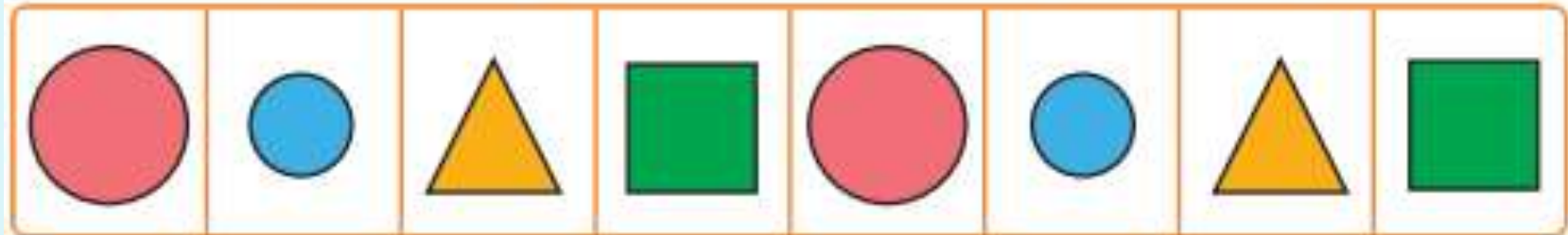
Pattern

2D Patterns

Core



Repeated

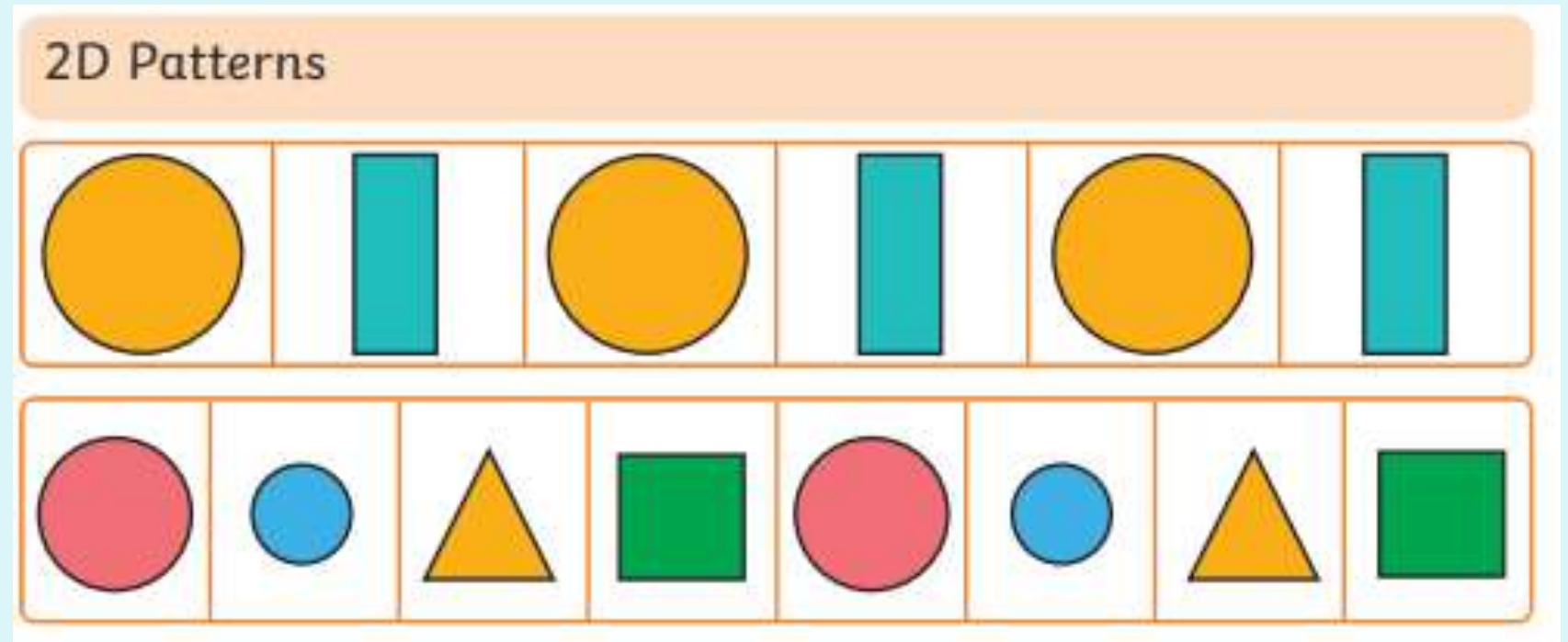


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LQ: Can I complete and make 2D shape patterns?

Let's recap:

TP: What did you learn yesterday?



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LQ: Can I complete and make 2D shape patterns?

TP:

- a) Which is the correct option to complete the pattern?
- b) What shape would be in position 20?

Let's discuss together. See next slide.

12

1 2 3 4 5 6 7 8 9 10 11 12

■ ● ◆ ● ■ ● ◆ ● ■ ● ? ?

Complete the pattern using one of these options.

A: ◆ ▲ C: ◆ ●

B: ■ ● D: ● ■

Self assessment

Do you understand what to do?



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LQ: Can I complete and make 2D shape patterns?

Can you describe the pattern core?

How many shapes are there in the pattern core?

If you know that after every four shapes the pattern starts again, can you work out what the 41st term will be?

Share

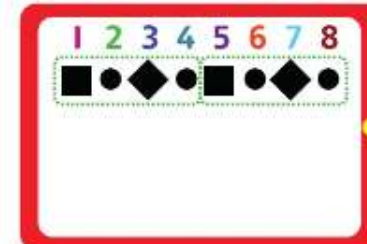
a) The options are A , ,

B , , C ,  and

D , .

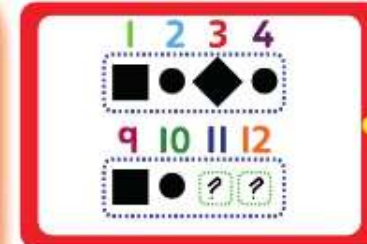
Four shapes are repeated to make the pattern.

I know it cannot be A because there are no triangles in the pattern.



To work out the answer, find the part of the pattern that repeats. Then compare the repeating pattern to find the missing shapes.

I will now compare the repeating part to find the missing shapes.



Option C   is correct.



b)



I can see that the even numbers always have a circle.



The 20th shape must be a circle.

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LQ: Can I complete and make 2D shape patterns?

Can you identify the pattern core for the pattern?


How did you work out the missing shapes?

Can you use what you know about the patterns to work out the 30th term?

I Find the repeating parts to complete the pattern.
What are the missing shapes?



I will first work out the part that repeats.



Self assessment

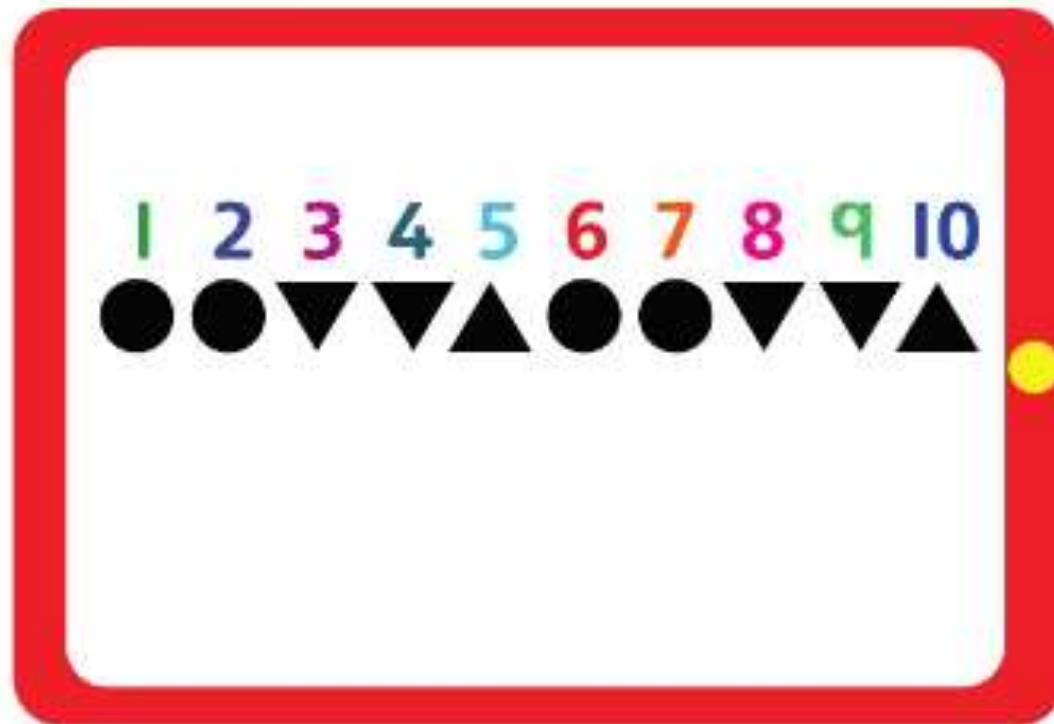
Do you understand how to make the pattern?



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LQ: Can I complete and make 2D shape patterns?

2 What shape will be in position 15?



I will draw
the pattern to
position 15.



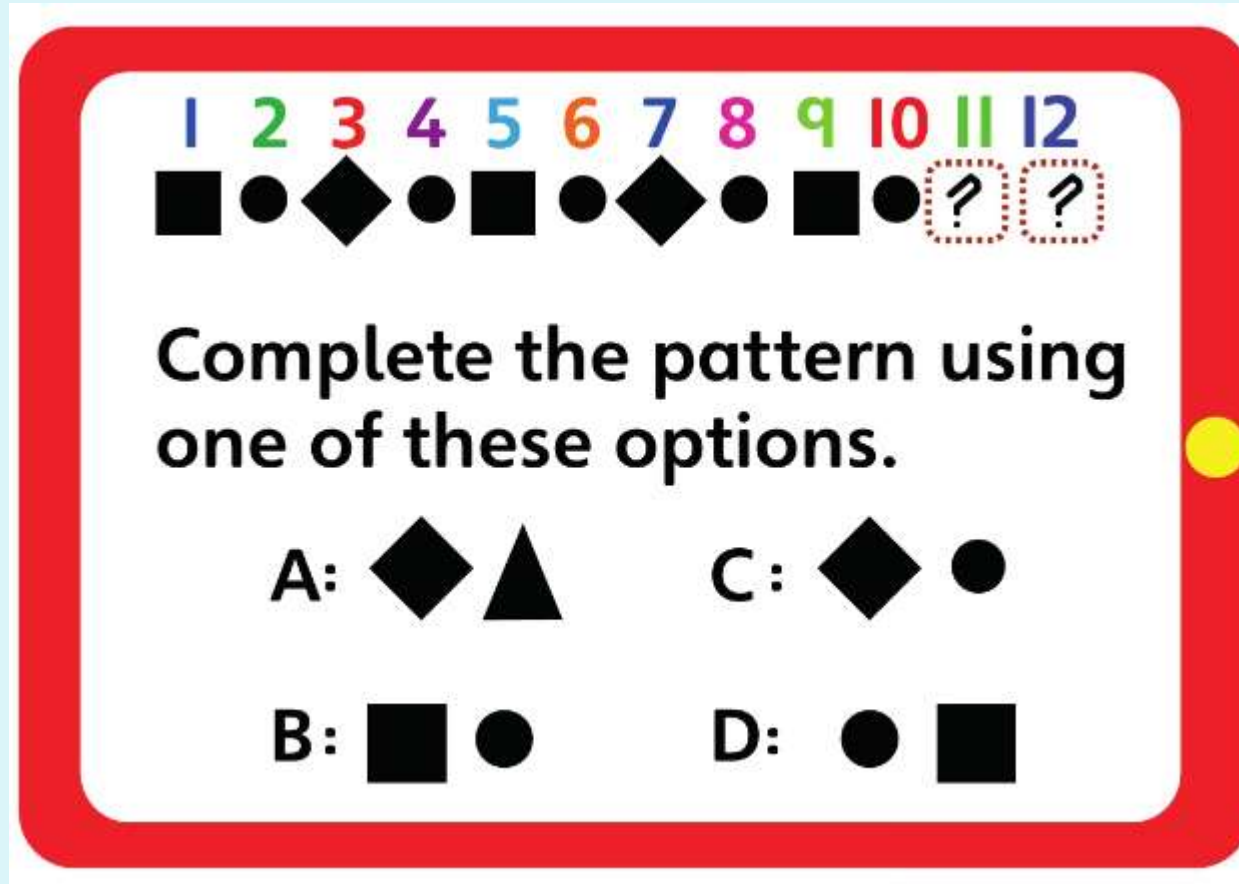
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LQ: Can I complete and make 2D shape patterns?

What is the repeating part of the pattern?

- a) How do you know which shapes complete the pattern?
- b) How did you work out what the 20th term would be?

What shape appears at every even term?
Can you use this to help you work out the 20th term?



1 2 3 4 5 6 7 8 9 10 11 12

■ ● ◆ ● ■ ● ◆ ● ■ ● ? ?

Complete the pattern using one of these options.

A: ◆ ▲ C: ◆ ●

B: ■ ● D: ● ■

Self assessment

Do you understand what to do?



Mental Maths

$20 \div 10 =$	$18 \div 2 =$	$80 \div 5 =$	$15 \div 5 =$	$44 \div 2 =$	$90 \div 10 =$
$42 \div 2 =$	$6 \div 2 =$	$70 \div 5 =$	$5 \div 5 =$	$10 \div 2 =$	$10 \div 5 =$



28.02.2024

LQ: Can I describe quarter and half turns?



Steps to Success:

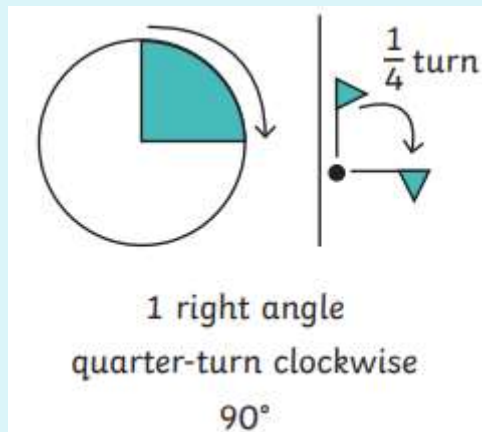
- I can make quarter turns.
- I can describe quarter turns.
- I can make half turns.
- I can describe half turns.



Anti clockwise



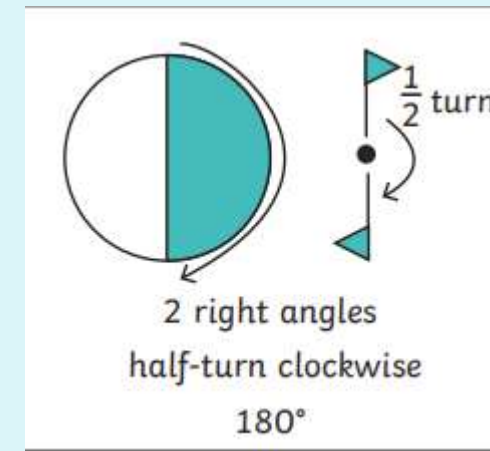
Quarter turn



clockwise



half turn

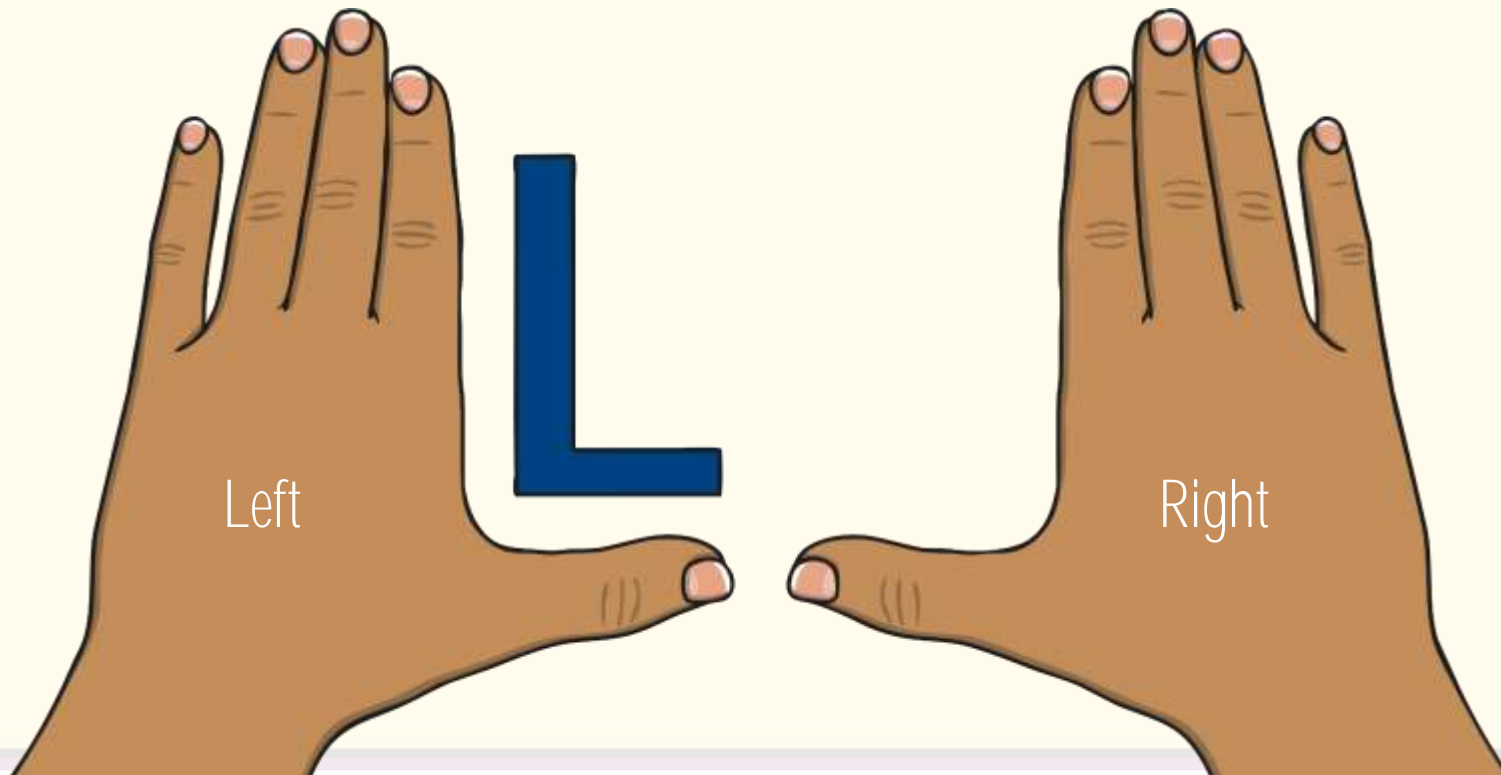


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LQ: Can I describe quarter and half turns?

Put your left hand in the air!

The hand that makes an 'L' shape is your left hand.

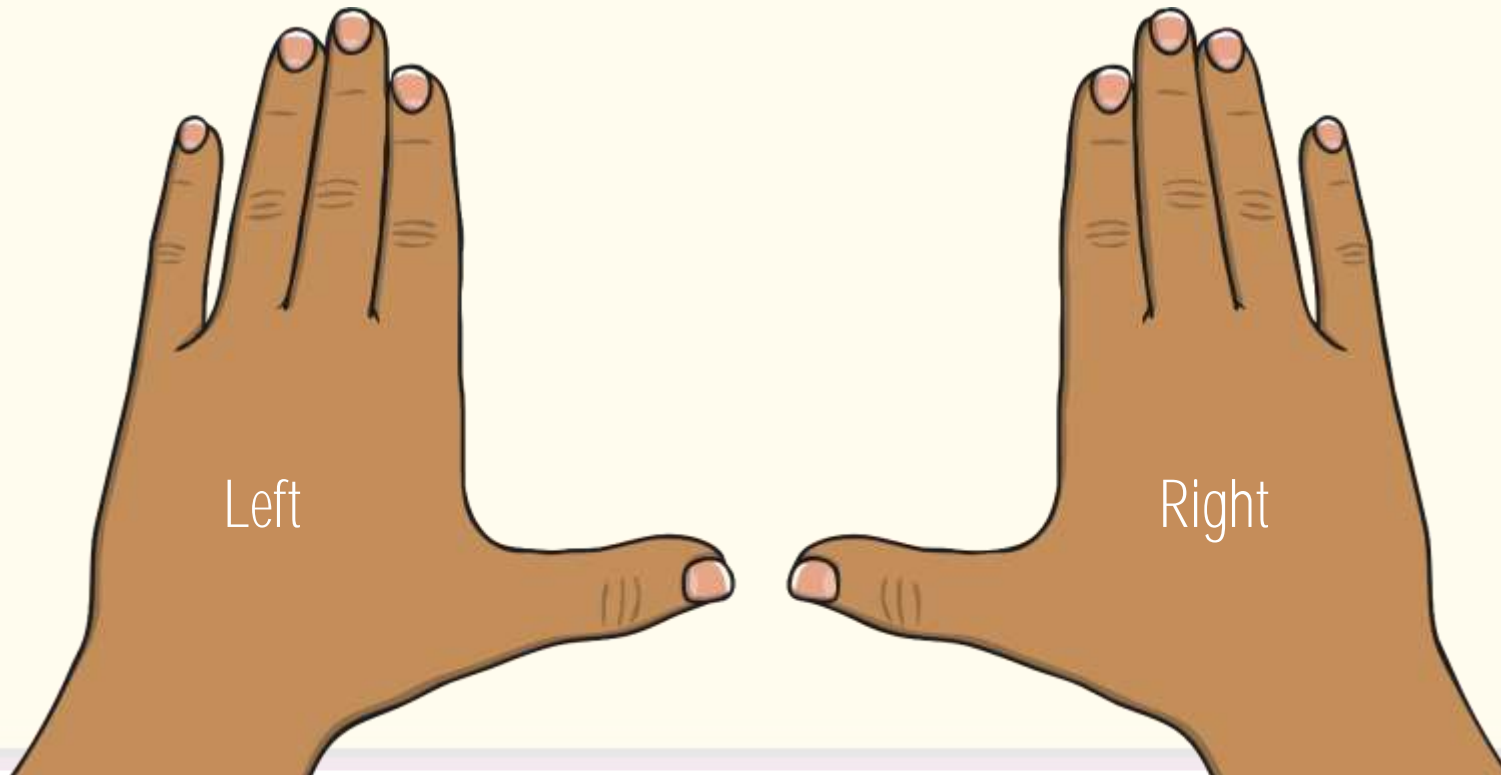


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LQ: Can I describe quarter and half turns?

Put your right hand in the air!

The hand that does not make an 'L' shape is your right hand.



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LQ: Can I describe quarter and half turns?

Making turns - clockwise



We call this one whole turn or a full turn.

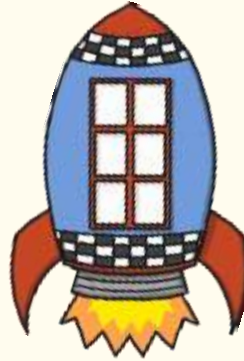
If the frog turns to the **right**, it is turning **clockwise**.



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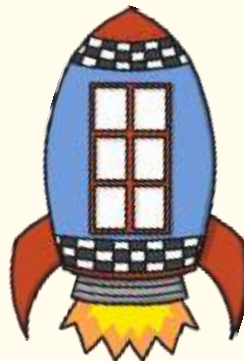
LQ: Can I describe quarter and half turns?

Making turns – anti-clockwise



Anti means the opposite of.

If the rocket turns to the **left**, it is turning **anti-clockwise**.



Making turns – a quarter turn clockwise



A quarter means there are
4
equal parts.

The kite might turn part of the whole turn.
The kite will turn **a quarter** of the whole turn **clockwise**.



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LQ: Can I describe quarter and half turns?

Making turns – a quarter turn anti-clockwise



The bear turns 1 of the 4 equal parts.

The bear might turn part of the whole turn.
The bear will turn **a quarter** of the whole turn **anti-clockwise**.



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LQ: Can I describe quarter and half turns?

Making turns – a half turn clockwise



A half means there are 2 equal parts.

The owl might turn part of the whole turn.
The owl will turn **half** of the whole turn **clockwise**.



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LQ: Can I describe quarter and half turns?

Making turns – a half turn anti-clockwise



Remember, turning left is anti-clockwise. Turning right is clockwise

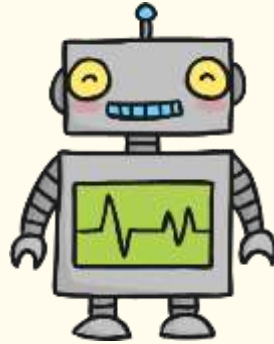
The bike might turn part of the whole turn.
The bike will turn **half** of the whole turn **anti-clockwise**.



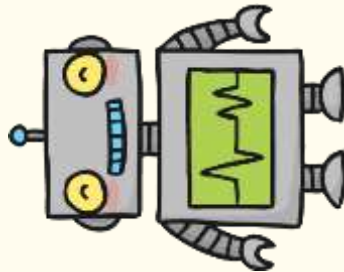
28.02.2024

LQ: Can I describe quarter and half turns?

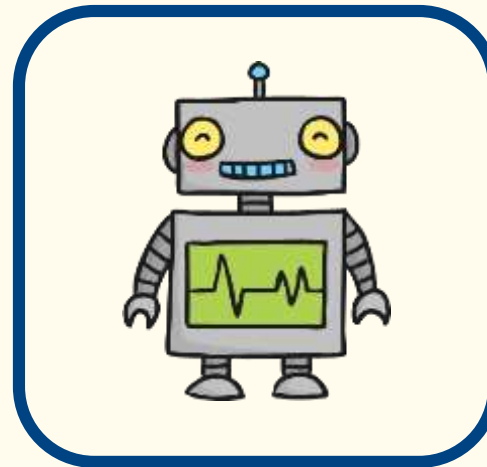
Here is a robot.



The robot has rotated 1 whole turn anticlockwise.
Which picture shows the robot now?



answer



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LQ: Can I describe quarter and half turns?

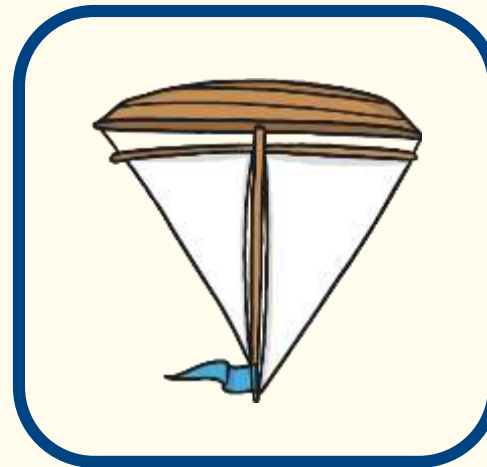
Here is a toy boat.



The boat has rotated a half turn clockwise.
Which picture shows the boat now?



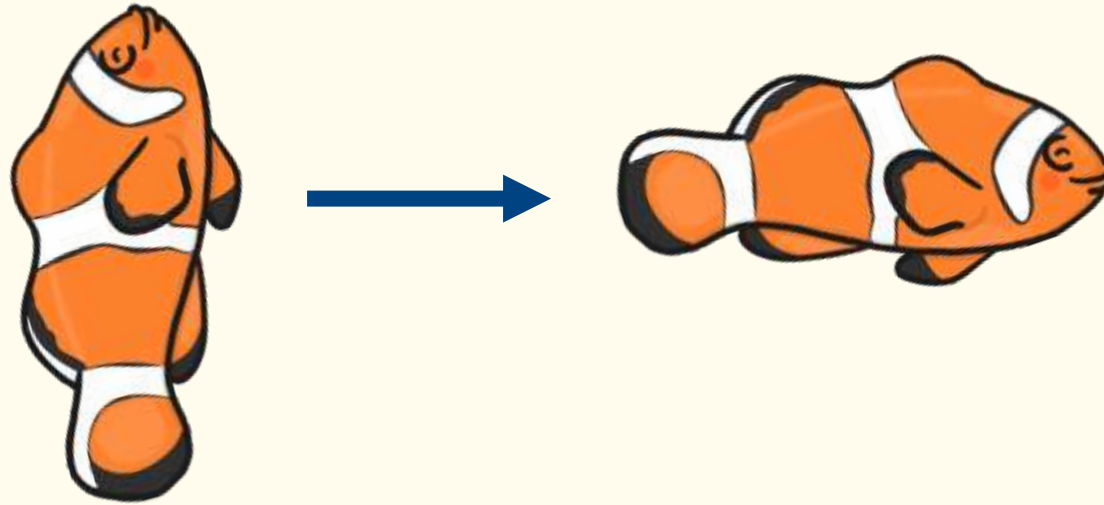
answer



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LQ: Can I describe quarter and half turns?

How far has the fish rotated?



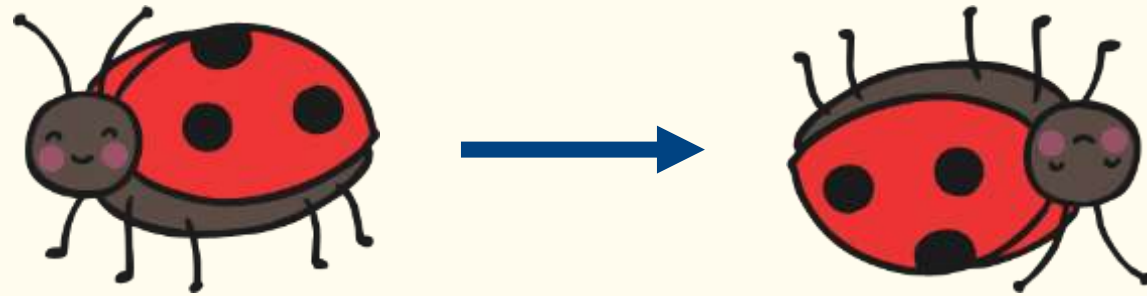
answer

one quarter turn clockwise

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LQ: Can I describe quarter and half turns?

How far has the ladybird rotated?



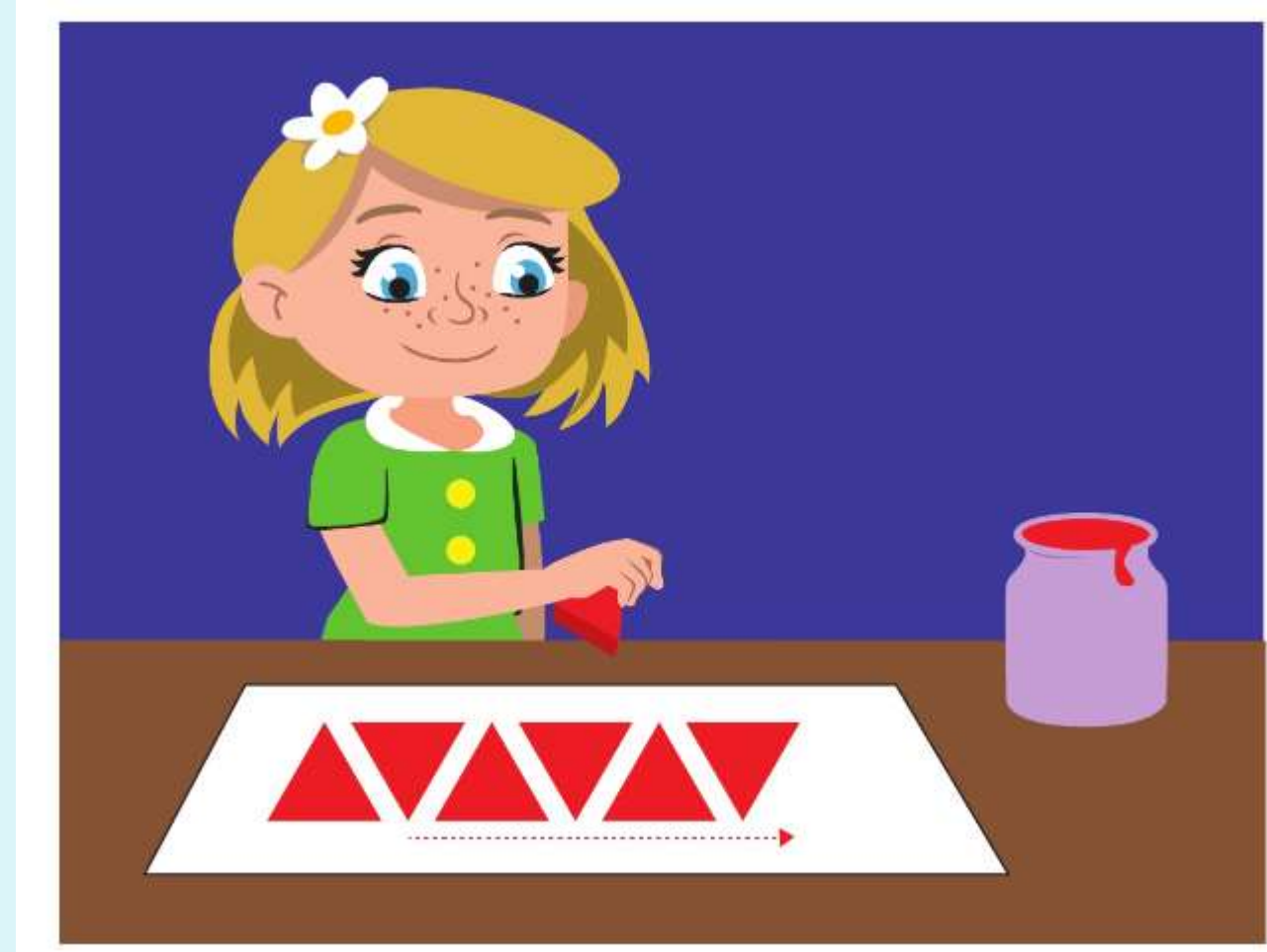
answer

one half turn anticlockwise
or
one half turn clockwise

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LQ: Can I describe quarter and half turns?

- a) What will the next two shapes in the pattern look like?
- b) What is the same about the shapes in the pattern? What is different?



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LQ: Can I describe quarter and half turns?

a) Do your triangles look different?


b) Does the direction of the turn matter?

What would the pattern look like if the triangle turned a quarter turn clockwise each time?


a) The next two shapes will be




b) All the shapes are triangles.
They all have three sides.
They are all the same size and colour.
The triangles are in a different position. They have made a half turn after each shape in the pattern.



The first 3 sentences are what are the same about these shapes.



I wonder if the triangle has turned clockwise or anticlockwise.



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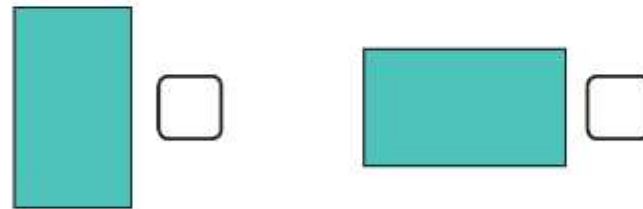
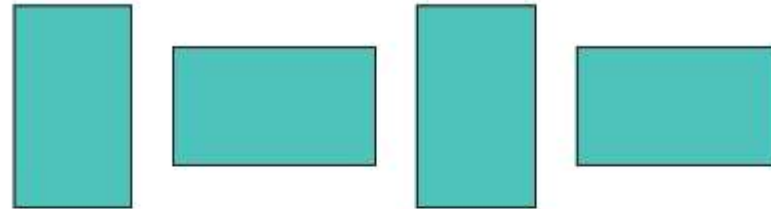
LQ: Can I describe quarter and half turns?

What is the repeating part of the pattern?

How do you know which shape comes next?

Can you describe how the shapes change in the patterns?

I a) Tick the shape that comes next in the pattern.



b) Describe the turn it makes.

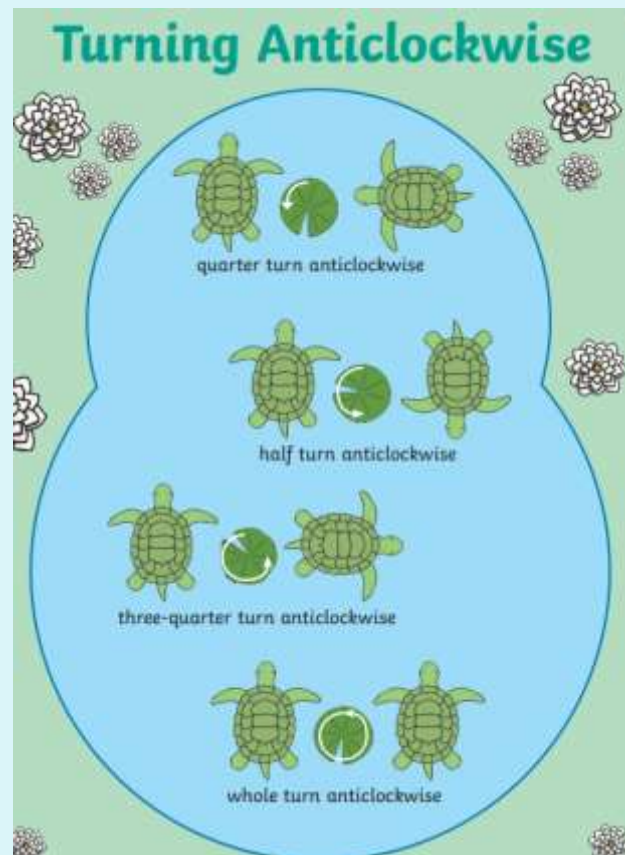
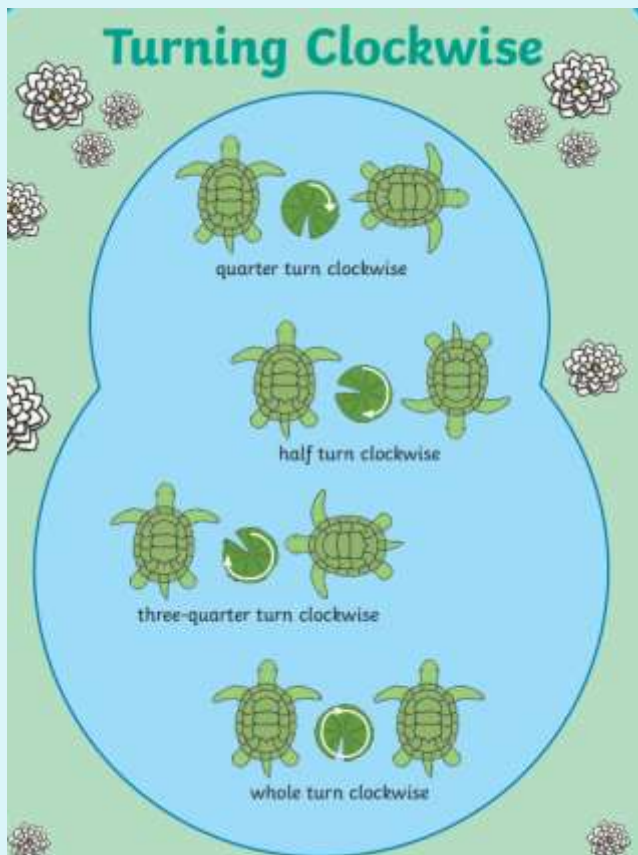
The  makes a _____ turn each time.

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LQ: Can I describe quarter and half turns?

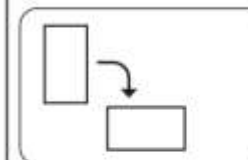
TASK Practical

Work with your partner.
Use positional language.



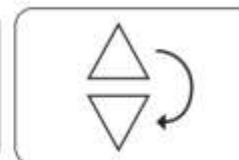
The shapes are turning in a clockwise direction.

Tick the turns that these shapes have made.



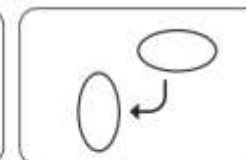
quarter turn

half turn



quarter turn

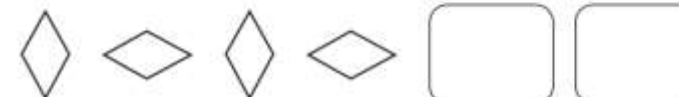
half turn



quarter turn

half turn

Turn the shapes to finish the pattern.



Which word describes the turns?

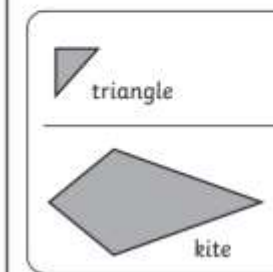
quarter

half

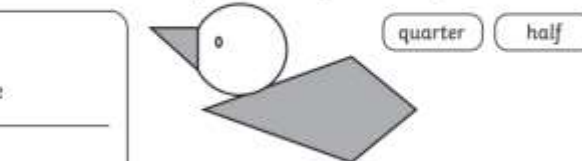
The shape made _____ turns.



What turns will the shapes make to finish the picture?



triangle



quarter

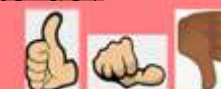
half

The triangle makes a _____ turn.

The kite makes a _____ turn.

Self assessment

Do you understand what to do?





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LQ: Can I describe quarter and half turns?



Steps to Success:

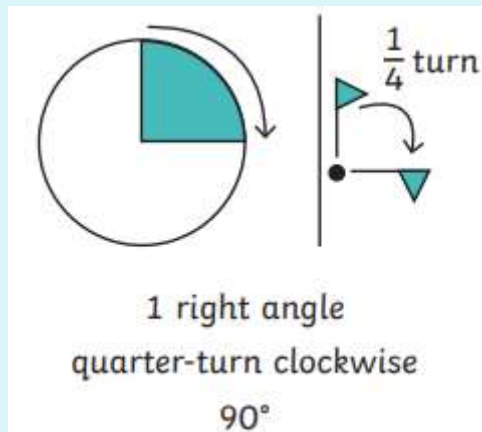
- I can make quarter turns.
- I can describe quarter turns.
- I can make half turns.
- I can describe half turns.



Anti clockwise



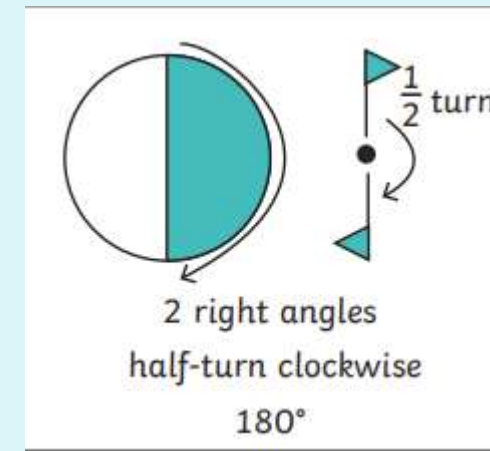
Quarter turn



clockwise



half turn

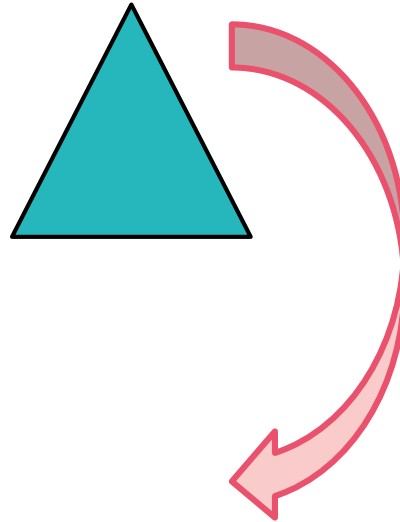




Name That Turn

Watch the shape carefully and describe the turn.

Is the shape making a **quarter** or a **half** turn?



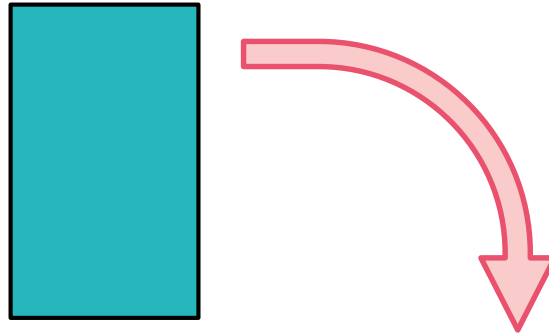
The triangle made a half turn.



Name That Turn

Watch the shape carefully and describe the turn.

Is the shape making a **quarter** or a **half** turn?

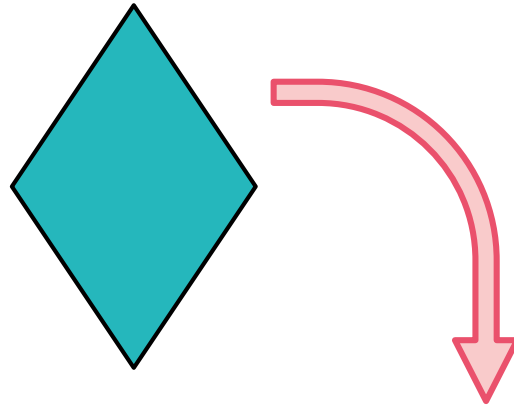


The rectangle made a quarter turn.



Name That Turn

Watch the shape carefully and describe the turn.

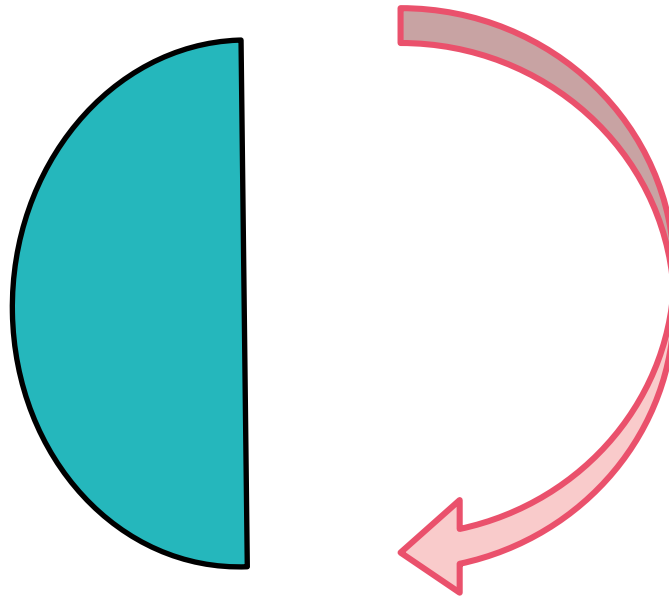


The rhombus made a quarter turn.



Name That Turn

Watch the shape carefully and describe the turn.

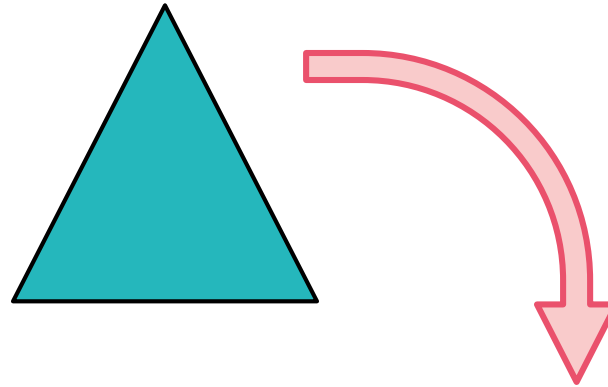


The semicircle made a half turn.

Name That Turn



What will the triangle look like after making a **quarter turn**?

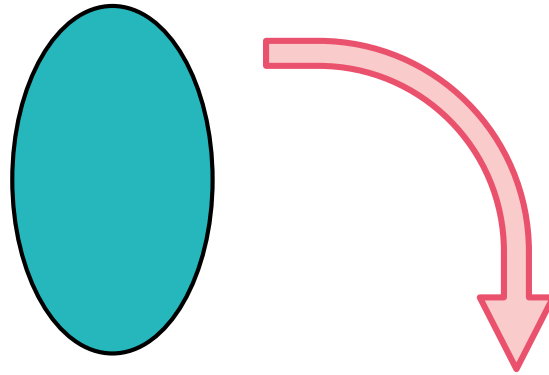


Were you correct?



Name That Turn

What will the oval look like after making a **quarter turn**?



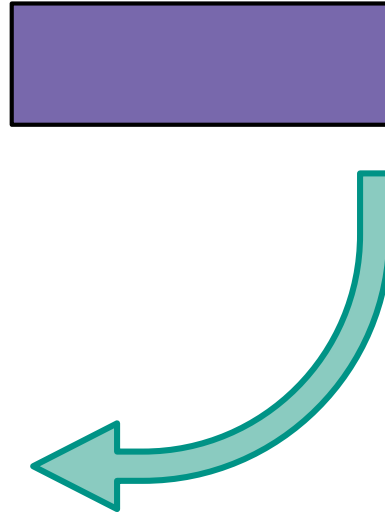
How did you know?

Starting Positions



These shapes are turning from different starting positions.

How would you describe each turn?



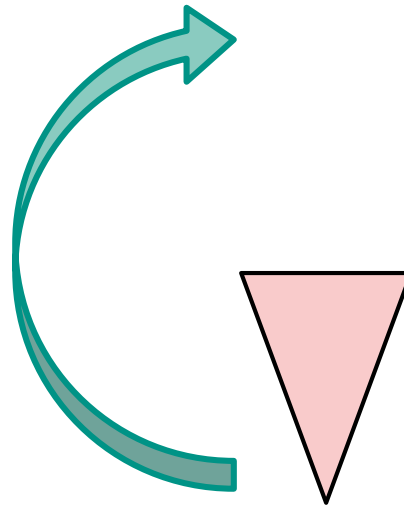
The rectangle made a quarter turn.

Starting Positions



These shapes are turning from different starting positions.

How would you describe each turn?



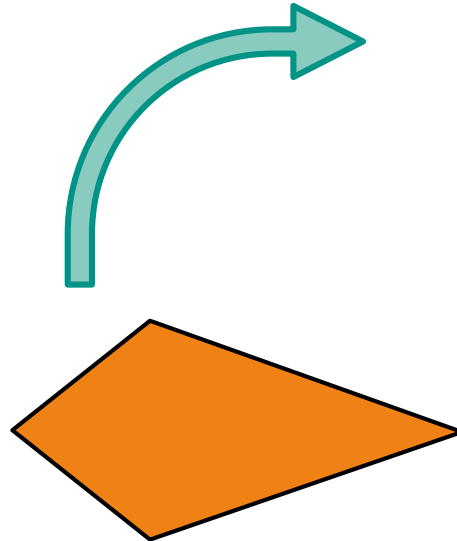
The triangle made a half turn.

Starting Positions



These shapes are turning from different starting positions.

How would you describe each turn?



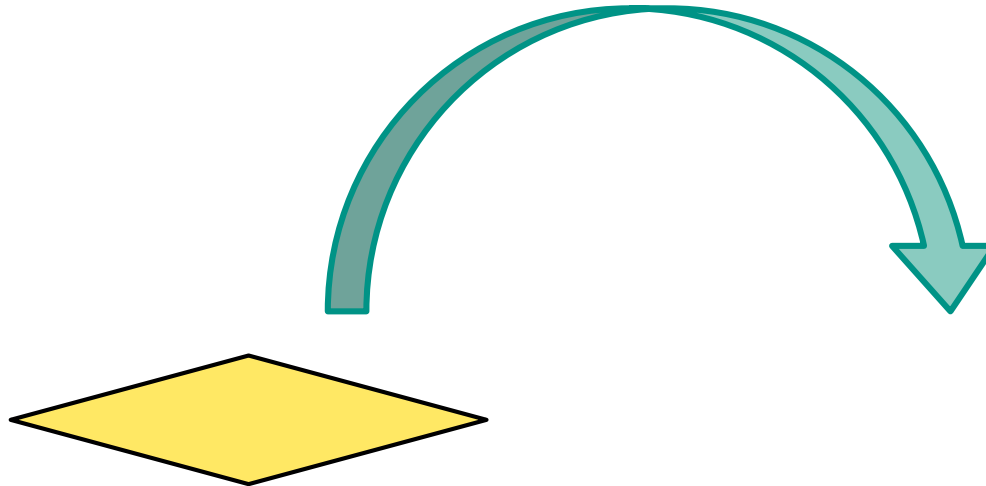
The kite made a quarter turn.

Starting Positions



These shapes are turning from different starting positions.

How would you describe each turn?



The rhombus made a half turn.

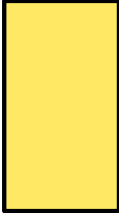
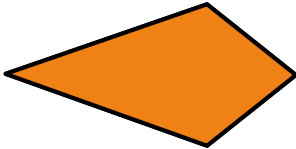
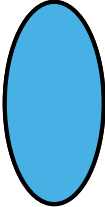
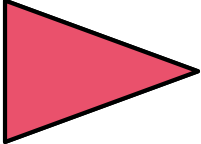
29.02.2024

LQ: Can I find lines of symmetry in 2D shapes?

Find the Turn



Each shape has made a turn.
Click on each of the top shapes to show the turn.
Which shapes have made a half turn?



Reveal Answer

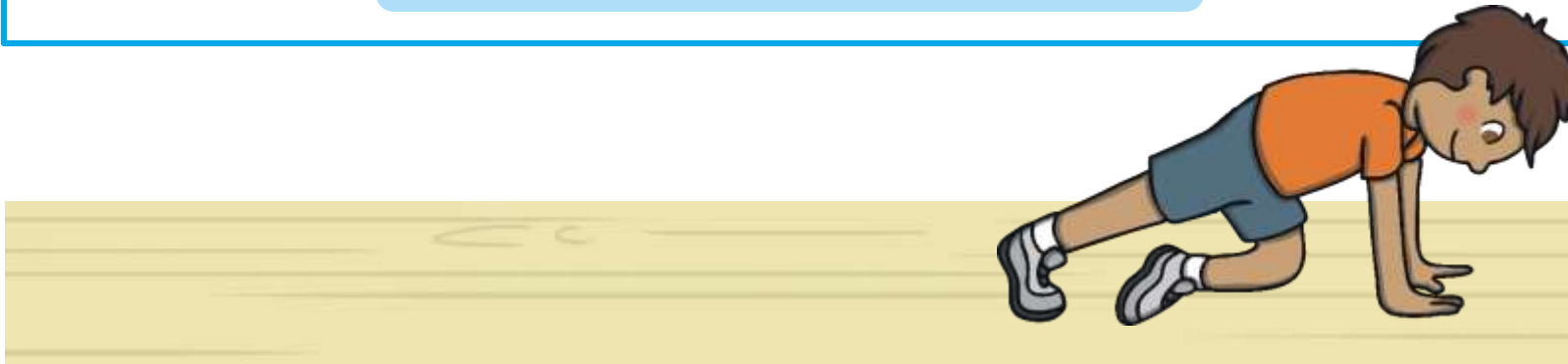
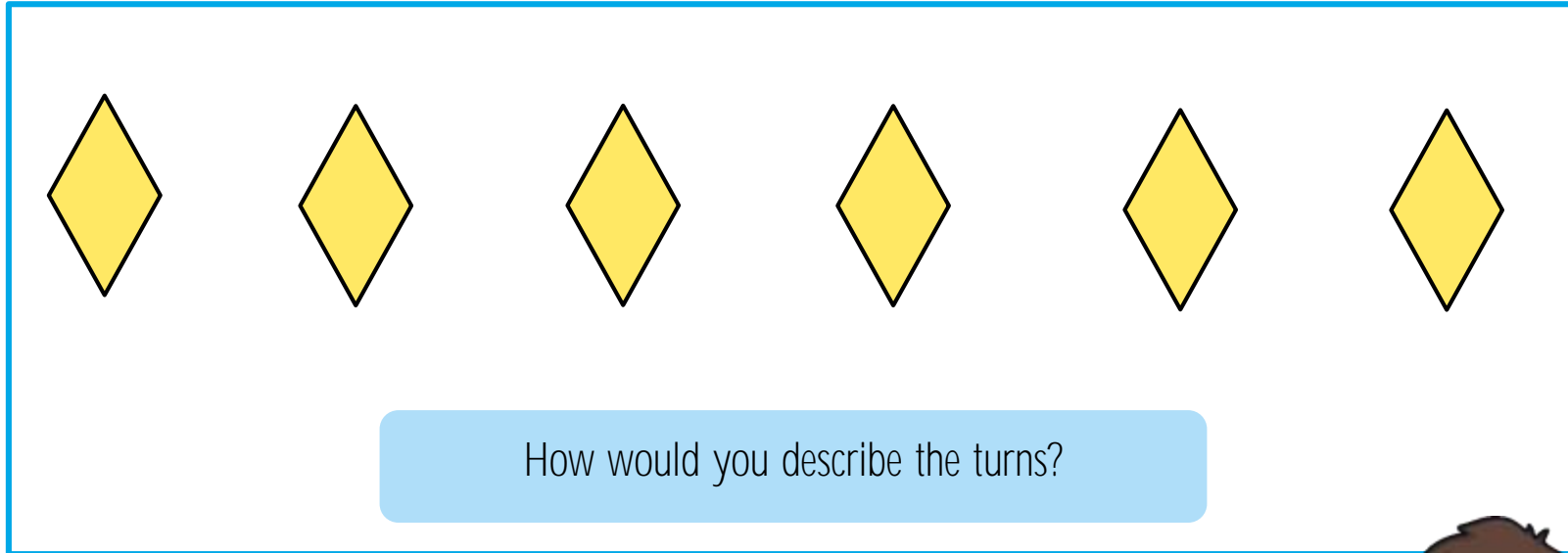
29.02.2024

LQ: Can I find lines of symmetry in 2D shapes?

Make a Pattern



We can turn shapes to make patterns.

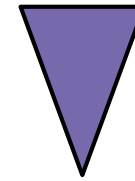
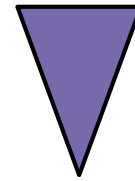
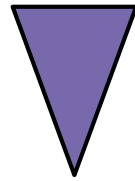
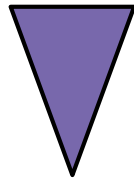
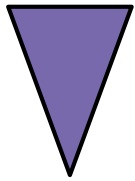
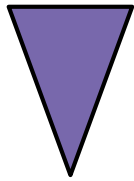
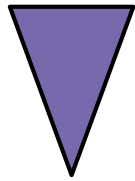


Make a Pattern

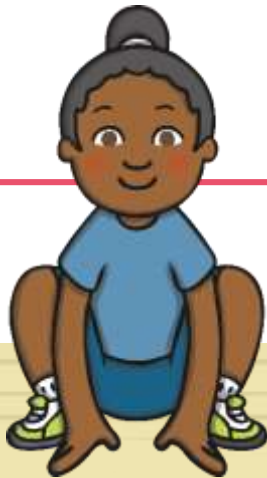


We can turn shapes to make patterns.

Which shape will turn next?



Can you describe the turn?



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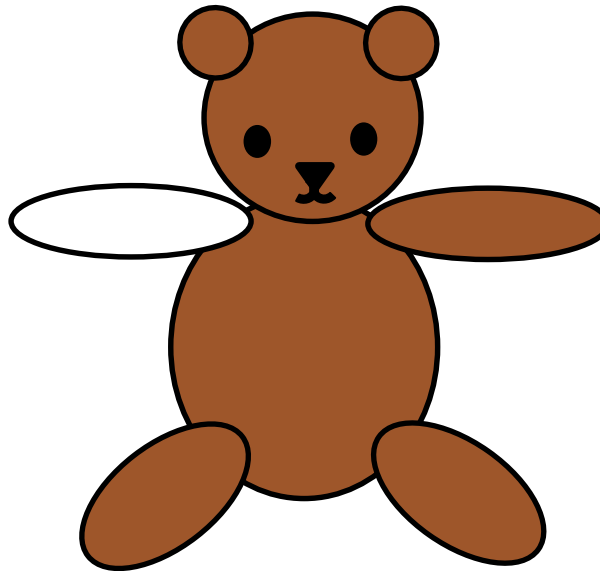
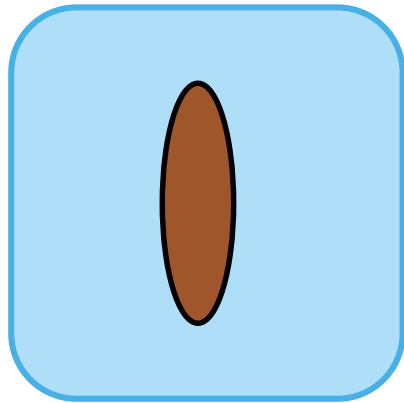
LQ: Can I find lines of symmetry in 2D shapes?

Make a Picture



We can turn shapes to make pictures.

How would you turn the shape to complete the picture?



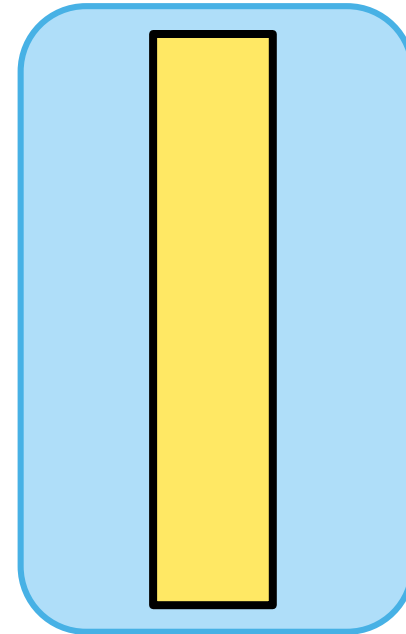
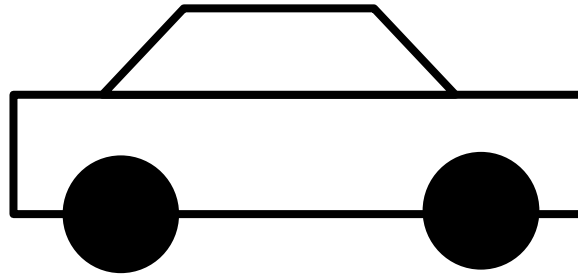
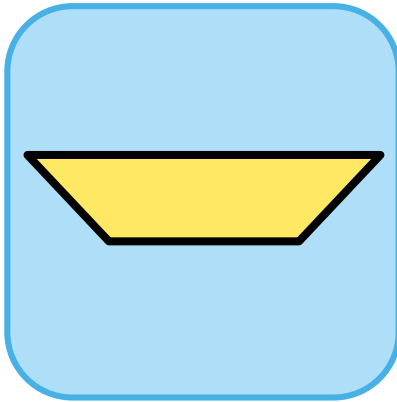
The oval made a quarter turn.

Make a Picture

We can turn shapes to make pictures.



How would you turn the shape to complete the picture?



The trapezium made a _____ ~~half~~ **quarter**

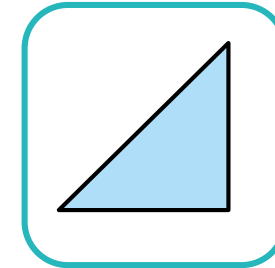
The rectangle made a _____ **quarter**

Check It



I can finish my picture by turning the triangle with a quarter turn.

Is this true?
Can you prove it?




It is true. The triangle made a quarter turn to finish the picture.


TASK

★
quarter turn, half turn, clockwise direction
★

Look at the sheet bellow. The shapes are turning in a clockwise direction. Tick the turns that these shapes have made.



Kim and Will are making a rocket picture with 2D shapes.




My shape fits with a quarter turn.

My shape fits with a half turn.

Which shape will Will use? _____

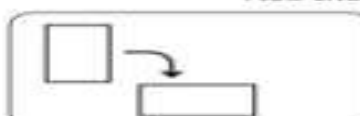
Which shape will Kim use? _____

Some 2 D shapes look the same as their starting position when they make a half turn. Do you agree? Why? Draw your ideas.

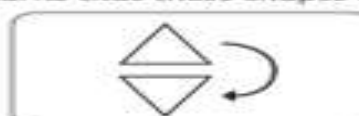


The shapes are turning in a clockwise direction.

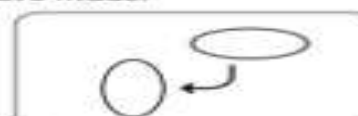
Tick the turns that these shapes have made.



quarter turn half turn




quarter turn half turn




quarter turn half turn

Turn the shapes to finish the pattern.




Which word describes the turns? quarter half


The shape made _____ turns.




What turns will the shapes make to finish the picture?



triangle



kite



quarter half

The triangle makes a _____ turn.

The kite makes a _____ turn.

Self assessment

Do you understand what to do?

