THIRD SPACE LEARNING

# Ready-to-go Lesson Slides Year 2

## Position and direction

## Lesson 4

Sum1

**At Third Space Learning we provide personalised online lessons from specialist maths tutors to support the target groups in your school.**

These ready-to-go slides are designed to work alongside our interventions to supplement quality first teaching and raise attainment in maths for all pupils.

To find out more about how you could use our 1-to-1 interventions year-round to boost maths progress in your school then get in touch:

020 3771 0095
hello@thirdspacelearning.com

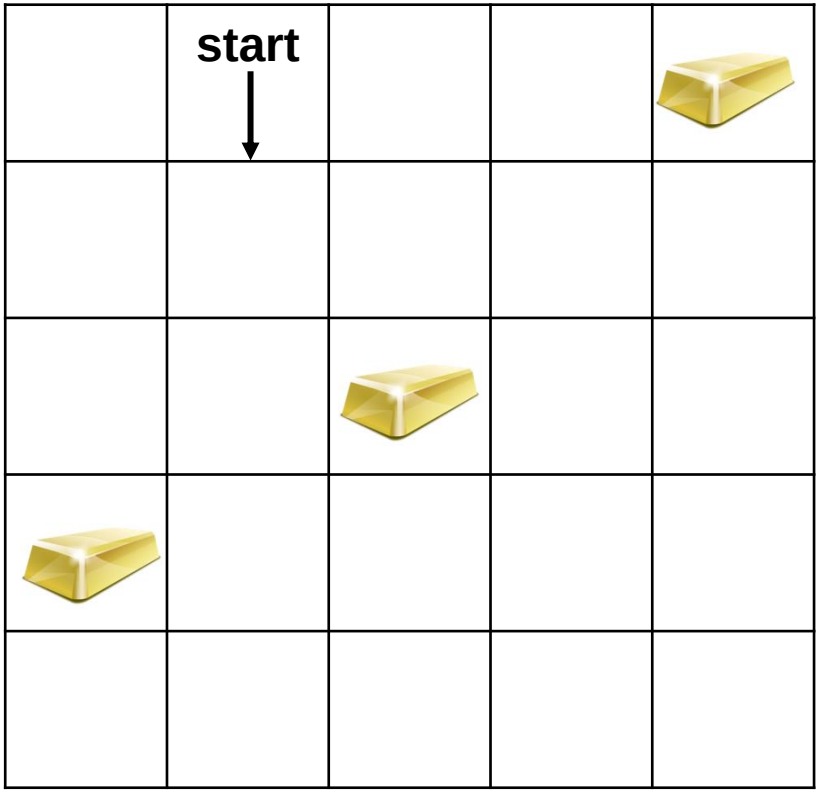
**Boosting maths progress through 1-to-1 conversations…**

# To make patterns with shapes

- ❑ I can describe and create patterns that involve direction and turns
- ❑ I use the language ‘clockwise’, ‘anti-clockwise’, ‘quarter’, ’half’ and’ ‘three-quarter’ when I describe patterns

**Starter:**

The pirate is collecting three gold bars. Can you draw a route so that he can pick up the pieces? Can you describe the directions that he takes?



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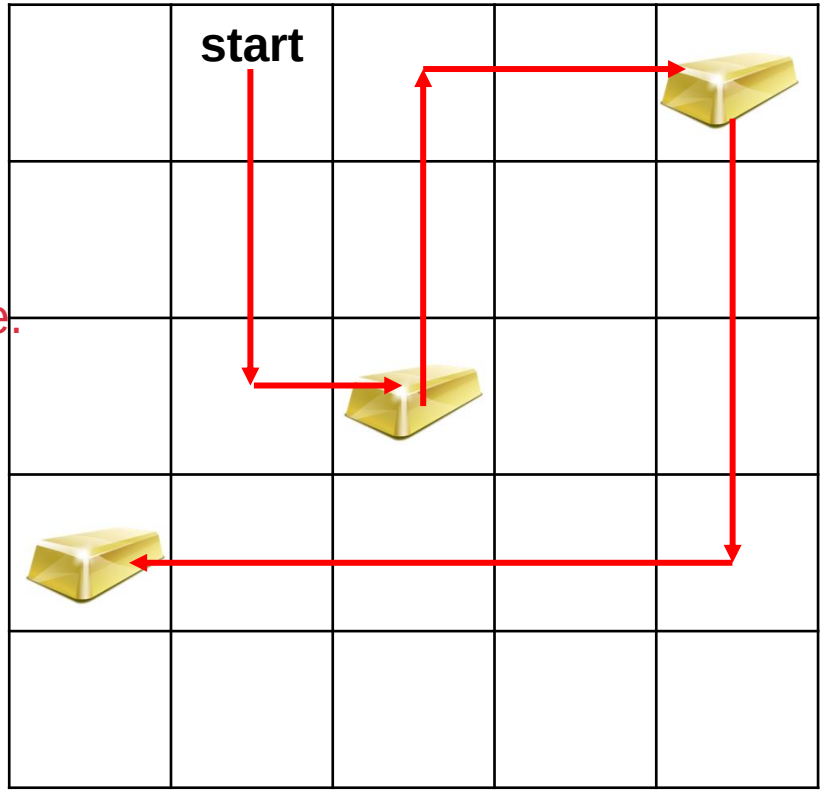


Forwards 2 squares. A quarter turn anti-clockwise.
Forwards 1 square. A quarter turn anti-clockwise.
Forwards 2 squares. A quarter turn clockwise.
Forwards 2 squares.
A three-quarter turn anti-clockwise.
Forwards 3 squares.
A quarter turn clockwise. Forwards 4 squares.

# To make patterns with shapes

**Talking Time:**

Can you continue this pattern by drawing the next three shapes in the sequence?
What is happening in this pattern? Can you explain your thinking?

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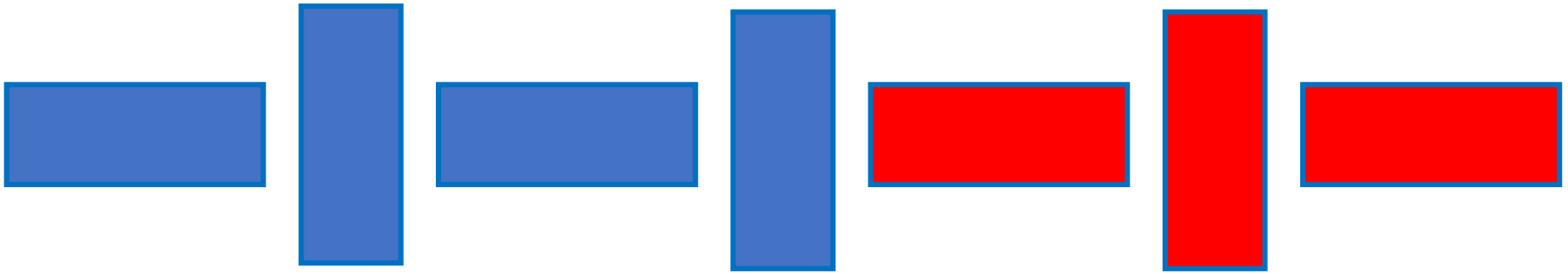

The pattern is using the same rectangular shape.
The rectangle is being turned a quarter turn or a three-quarter turn each time.
It could be in a clockwise or an anti-clockwise direction.

So, one answer could be that the rectangle is being turned a quarter turn each time in a clockwise direction.

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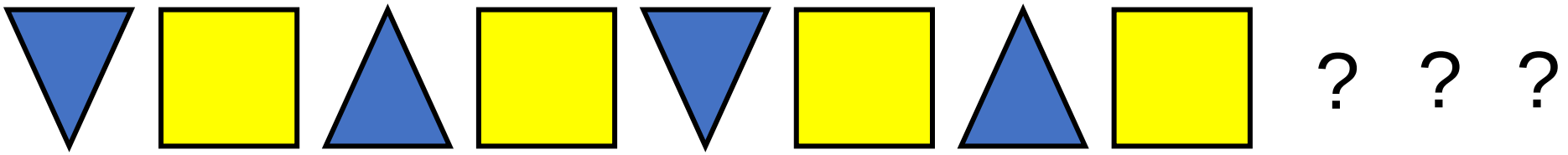

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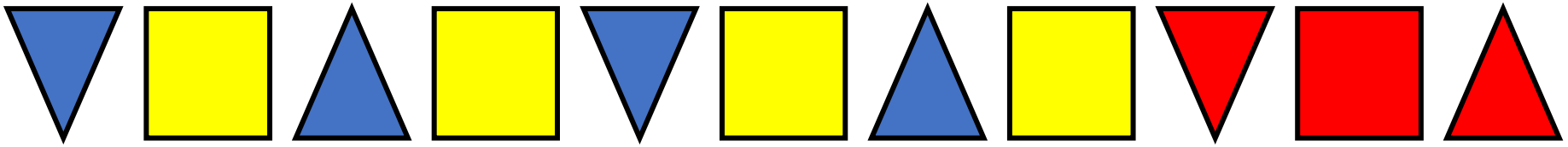


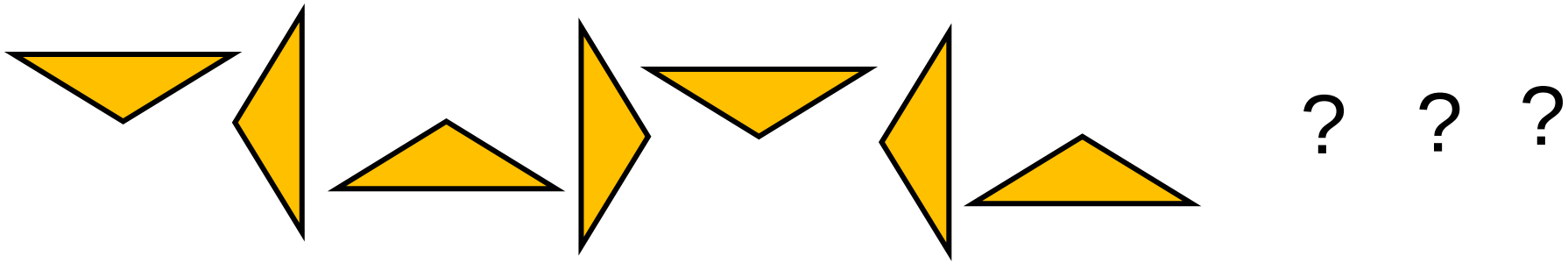
The pattern here is:

triangle, square, triangle after a half-turn, square, triangle after a half-turn, square, triangle after a half turn and so on

# To make patterns with shapes

**Talking Time:**

Can you continue this pattern by drawing the next three shapes in the sequence?
Could there be more than one answer to explain this pattern? Why?



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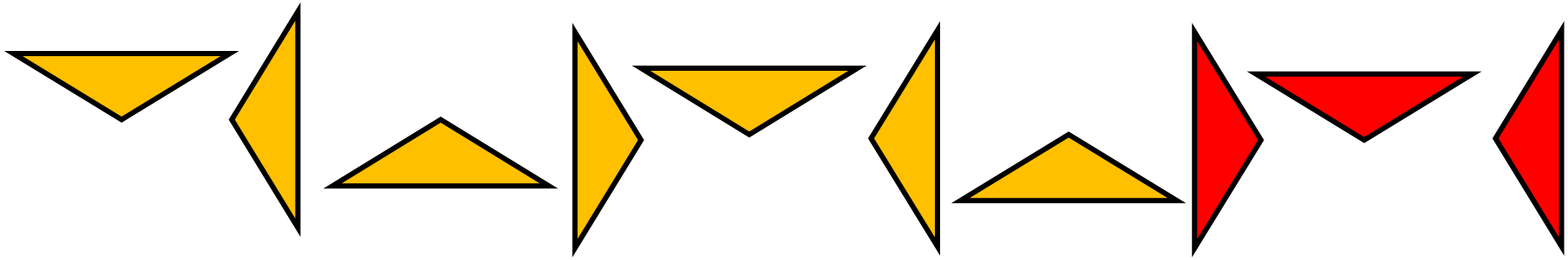


The pattern is using the same triangular shape.
Possible answers:
The triangle is being turned a quarter turn in a clockwise direction each time.
The triangle is being turned a quarter turn in an anti-clockwise direction each time.
The triangle is being turned a three-quarter turn in a clockwise direction each time.
The triangle is being turned a three-quarter turn in an anti-clockwise direction each time.

# To make patterns with shapes

**Activity 1:**

Here is a shape.  Can you make a pattern for this shape where it is turning

a half turn each time?

a quarter turn each time in a clockwise direction?

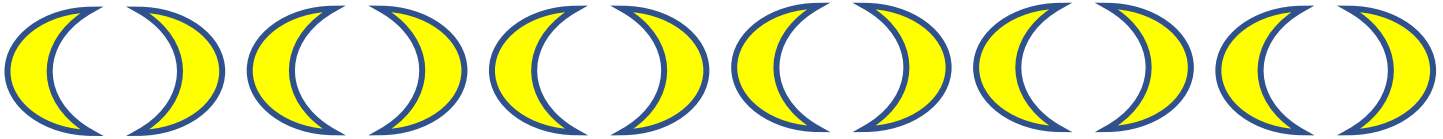
a three-quarter-turn each time in a clockwise direction?

# To make patterns with shapes

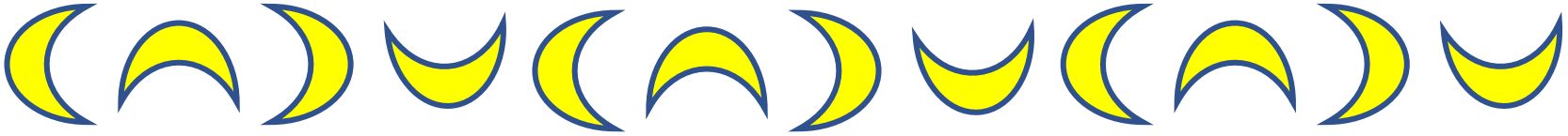
**Activity 1:**

Here is a shape.  Can you make or draw a pattern for this shape where it is turning

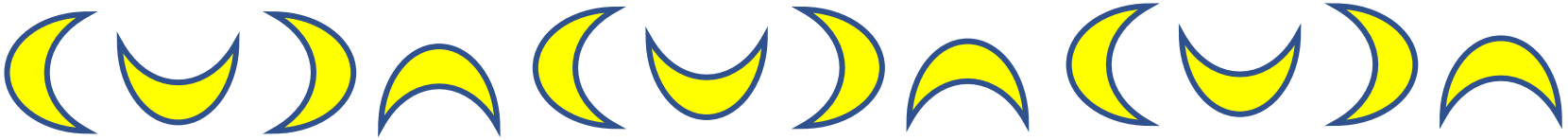
a half turn each time?



a quarter turn each time in a clockwise direction?



a three-quarter-turn each time in a clockwise direction?



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**Talking Time:**

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Can you explain how you know which shapes are missing?

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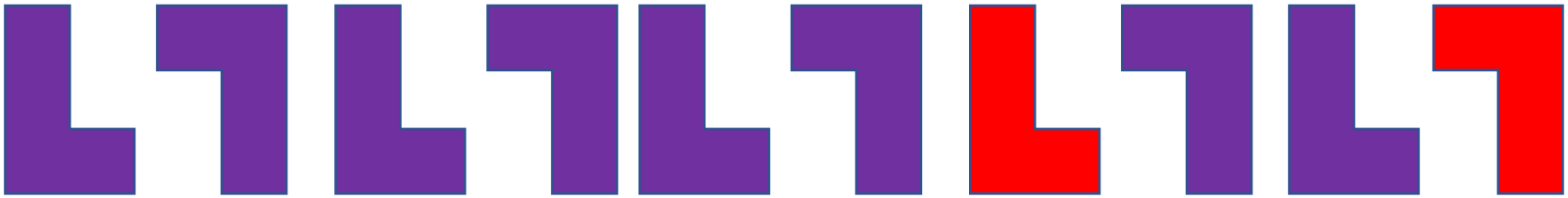

The missing shapes in the pattern are in red.

The pattern is turn the shape a half turn each time.

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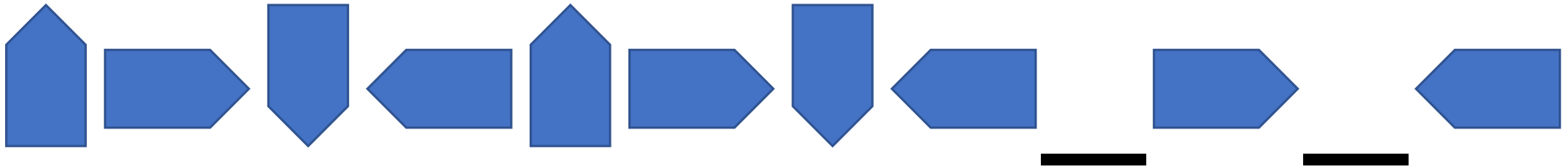

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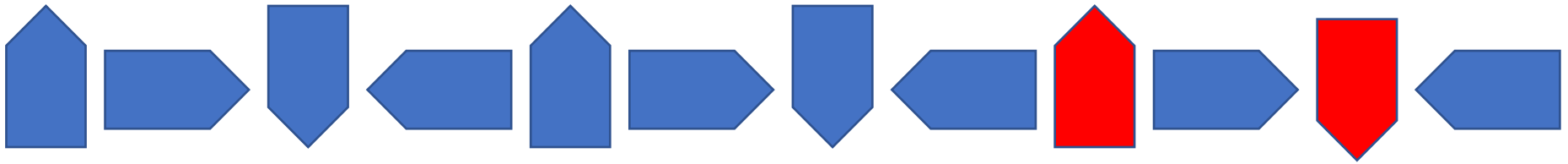

The missing shapes in the pattern are in red.

The pattern **could be** turn the shape a quarter turn in a clockwise direction each time.

**Extension:**
This is one way of describing the pattern. Are there any other ways? Can you find at least one other way of describing this pattern?

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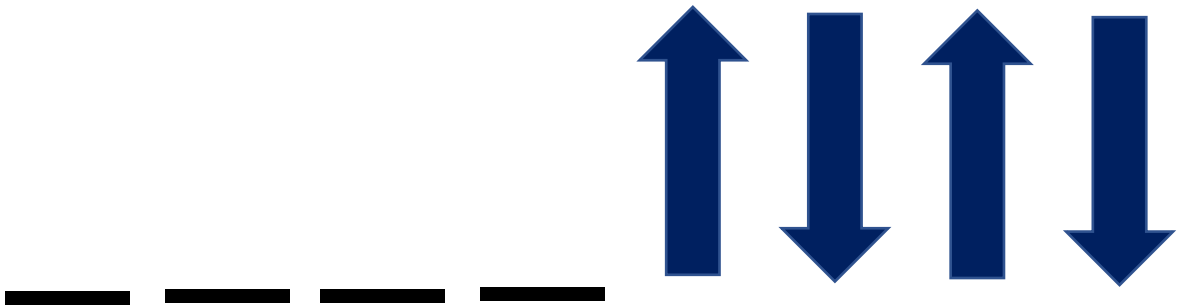

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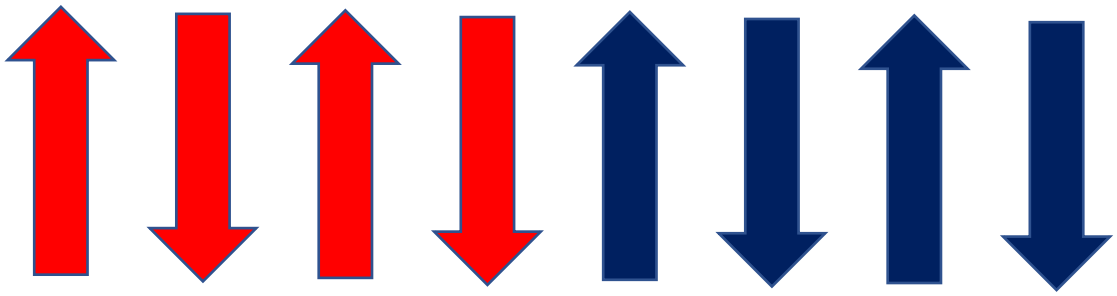

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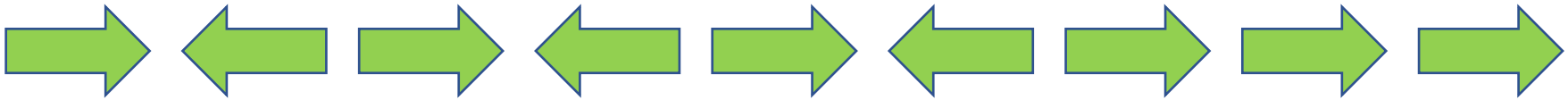
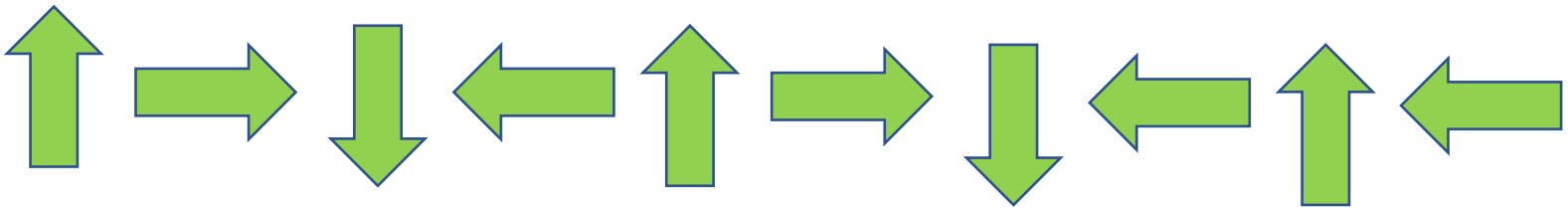
# To make patterns with shapes

**Activity 2:** Can you spot a mistake in each of these patterns?
Which shape should it be in each sequence? Why?





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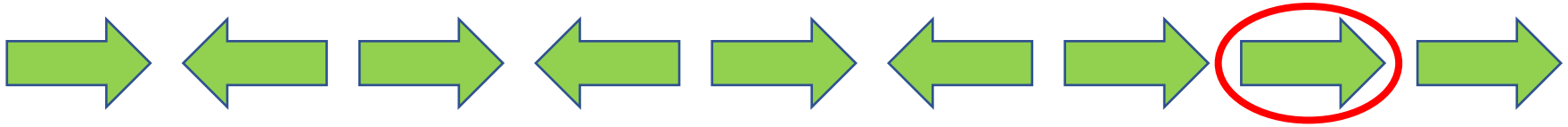
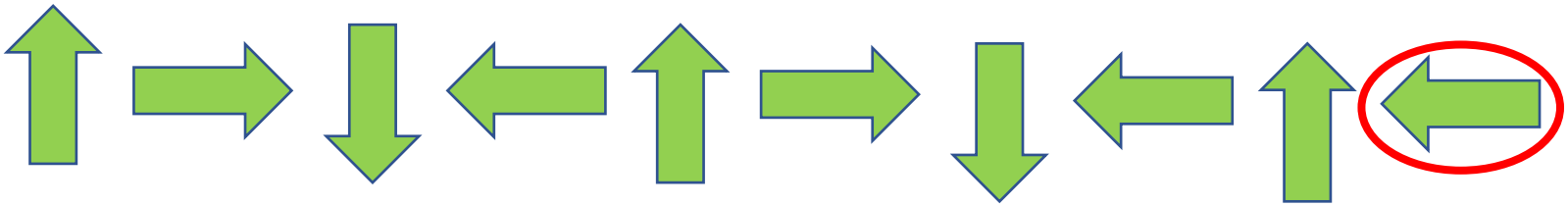
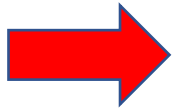


The mistake is that the arrow is facing the wrong direction.
It should have been turned a half turn to look like this.

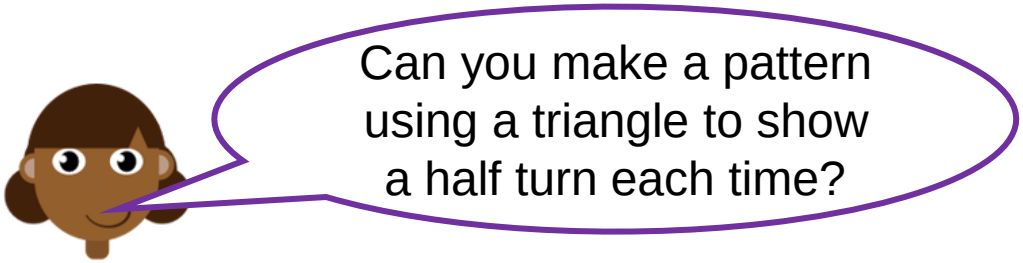


The mistake is that the arrow is facing the wrong direction.
It should have been turned a quarter turn, or a three-quarter turn to look like this.



# To make patterns with shapes

**Talking Time:** Aisha asks Riley to make a pattern.
Has Riley made the correct pattern?
What would the next shape look like?

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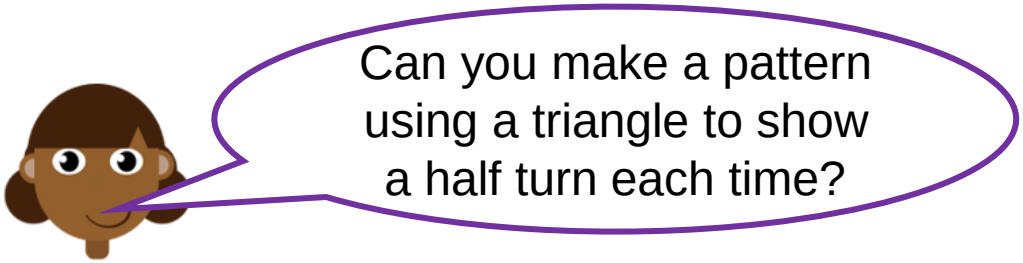
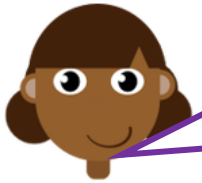



Yes.
Riley has made the pattern using the same triangle that has been turned a half turn each time.
The next shape in the pattern would look like this.

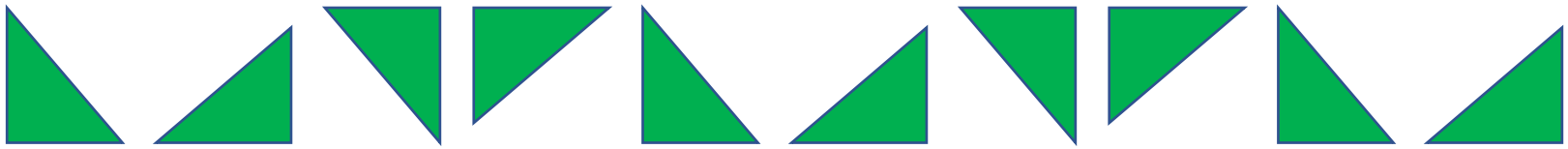
# To make patterns with shapes

**Talking Time:** Riley makes a pattern for Aisha.
Do you agree with Aisha or Riley?
Can you explain your thinking?



I think the pattern is turn the triangle a three-quarter turn in a clockwise direction.

No, it is turn the triangle a quarter turn in an anti-clockwise direction.



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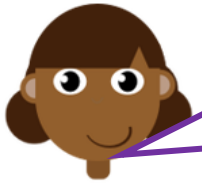

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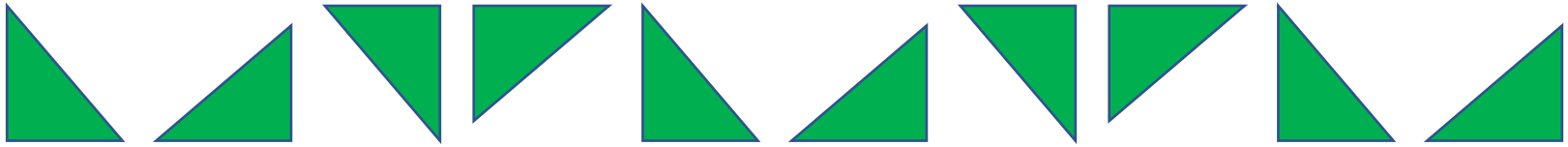
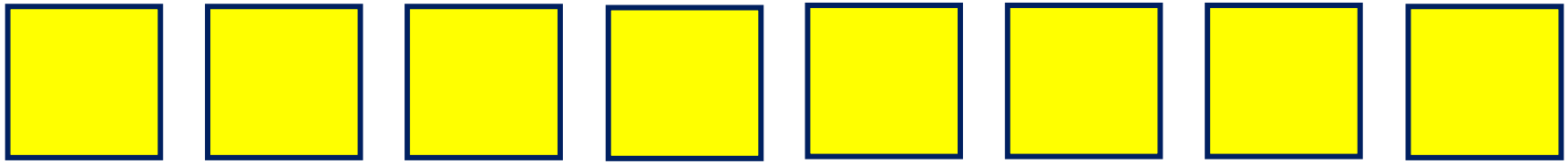
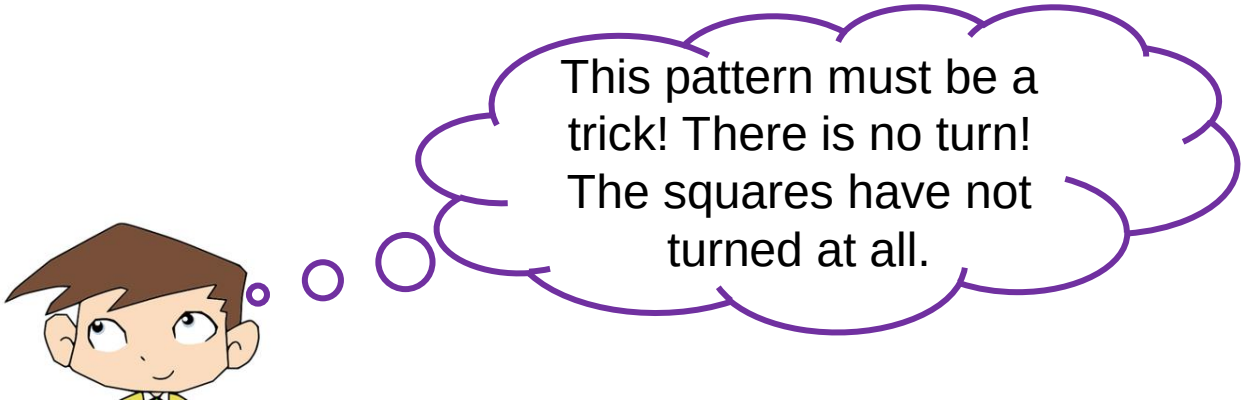


Both children are correct.
If you turn the triangle a three-quarter turn in a clockwise direction or a quarter turn in an anti-clockwise direction, the result will be the same.

# To make patterns with shapes

**Activity 3:** Ollie looks at the pattern of squares. He has been told that they have turned. Do you agree with him? Can you explain your thinking?





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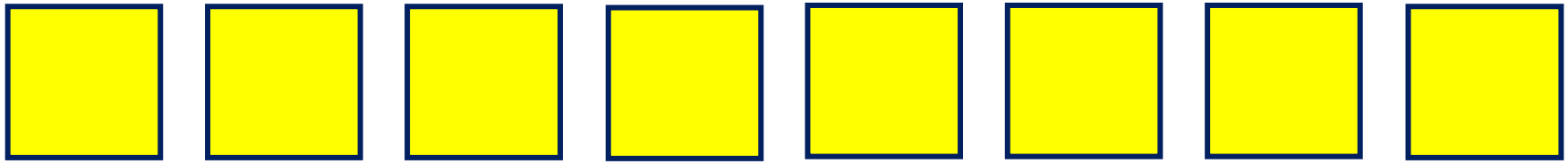
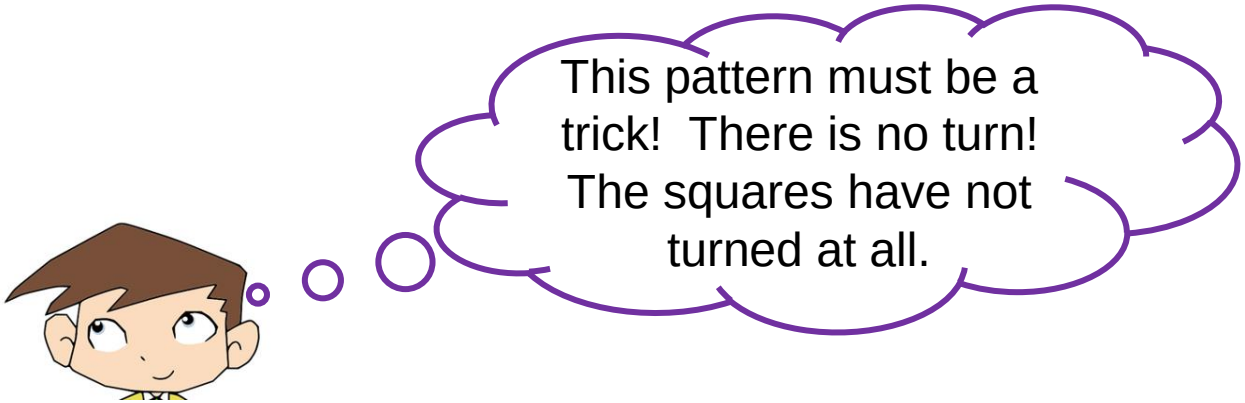


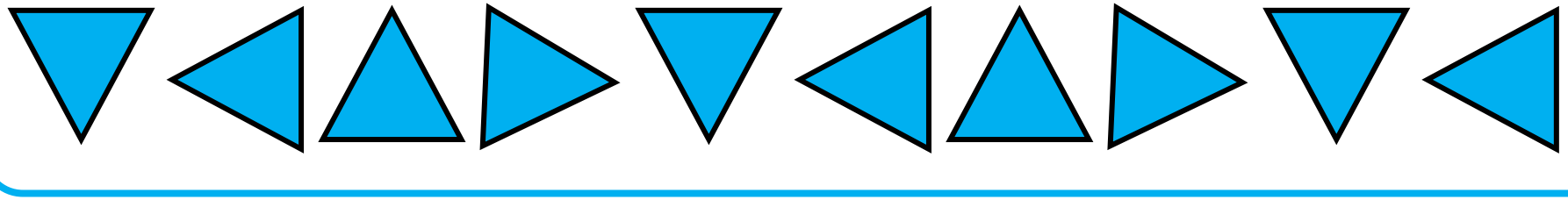


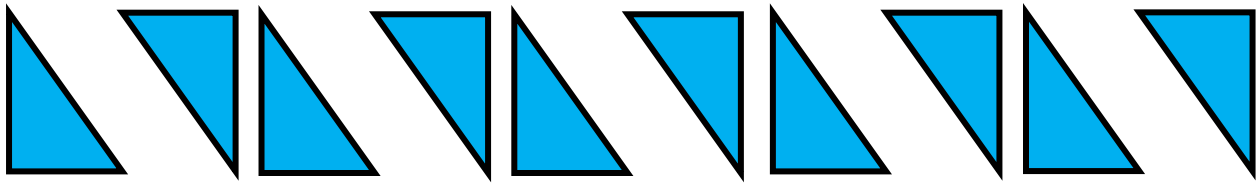

Ollie might be correct.
However, it is possible that the square has moved a full turn, a half turn, a quarter turn or a three-quarter turn each time.
All the sides are the same length, so it is hard to tell.

# To make patterns with shapes

- ❑ I can describe and create patterns that involve direction and turns
- ❑ I use the language ‘clockwise’, ‘anti-clockwise’, ‘quarter’, ’half’ and’ ‘three-quarter’ when I describe patterns

## Evaluation: What is the same and what is different about these patterns?





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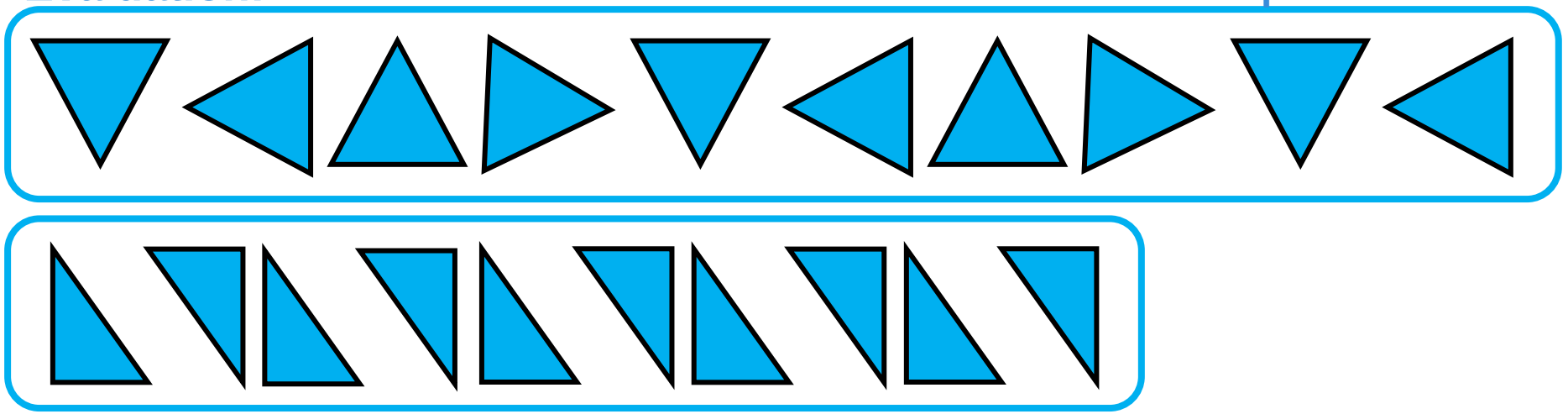
**Evaluation: What is the same and what is different about these patterns?**



**The same** – both patterns use a triangle. Both patterns have 10 triangles.

**Different** – the first pattern is a quarter or three-quarter turn, but the second is a half turn. The triangles are different types. There are four different positions in the first pattern and there are only two in the second pattern.

## Do you have a group of pupils who need a boost in maths this term?

Each pupil could receive a personalised lesson every week from our specialist 1-to-1 maths tutors.

- Raise attainment
- Plug any gaps or misconceptions
- Boost confidence

**Speak to us:**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hello@thirdspacelearning.com


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