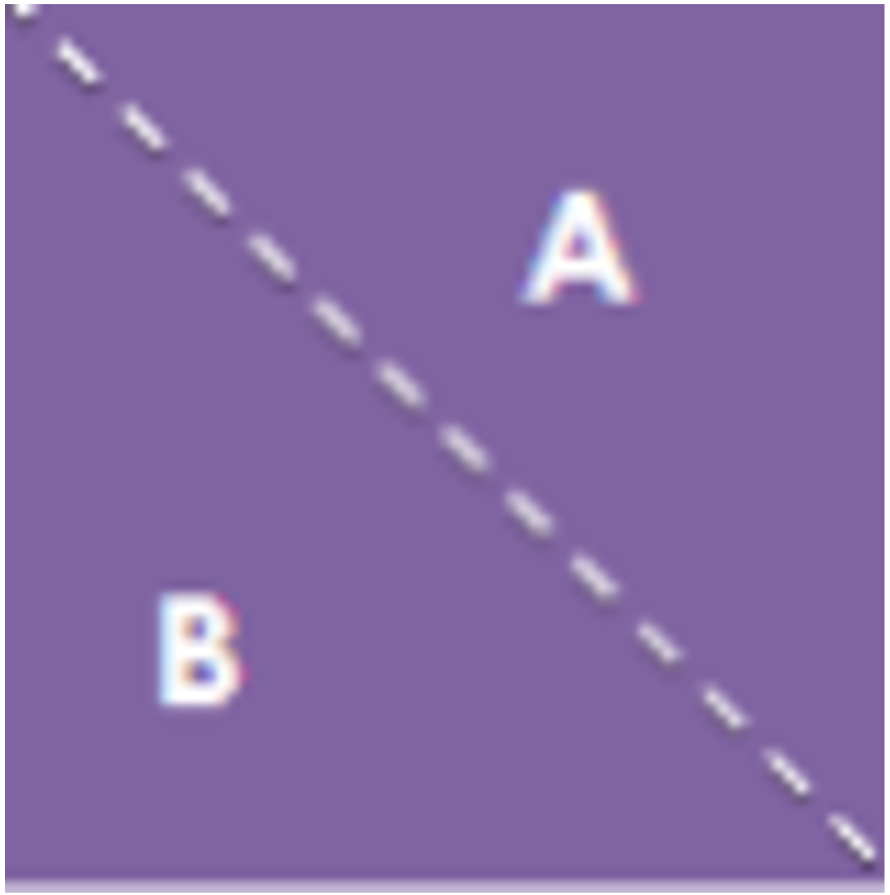
Lesson 4

L.O: I am learning to calculate the angles in a polygon.

PRACTICAL TASK-RECAP

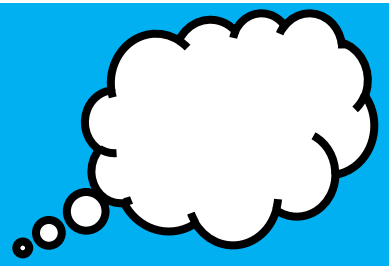


Draw a square and split it into 2 triangles.

a) What do the angles of triangle A add up to? 180°

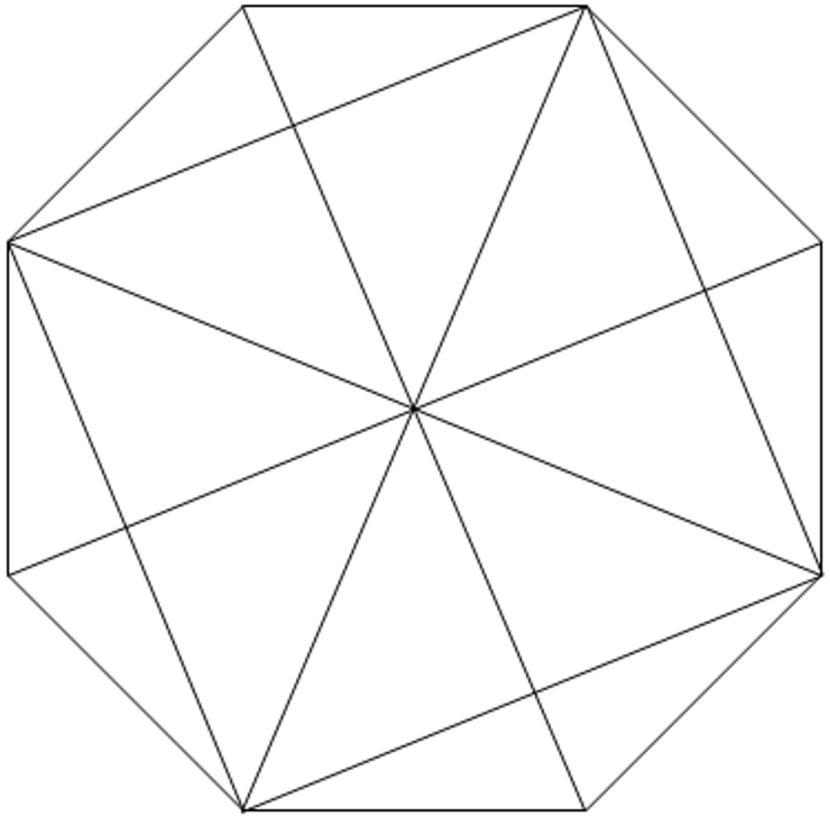
a) What do the angles of triangle B add up to? 180°

b) So what is the sum of interior angles in a quadrilateral? 360°



Starter

How many different polygons (2D shapes) can you find in this pattern?



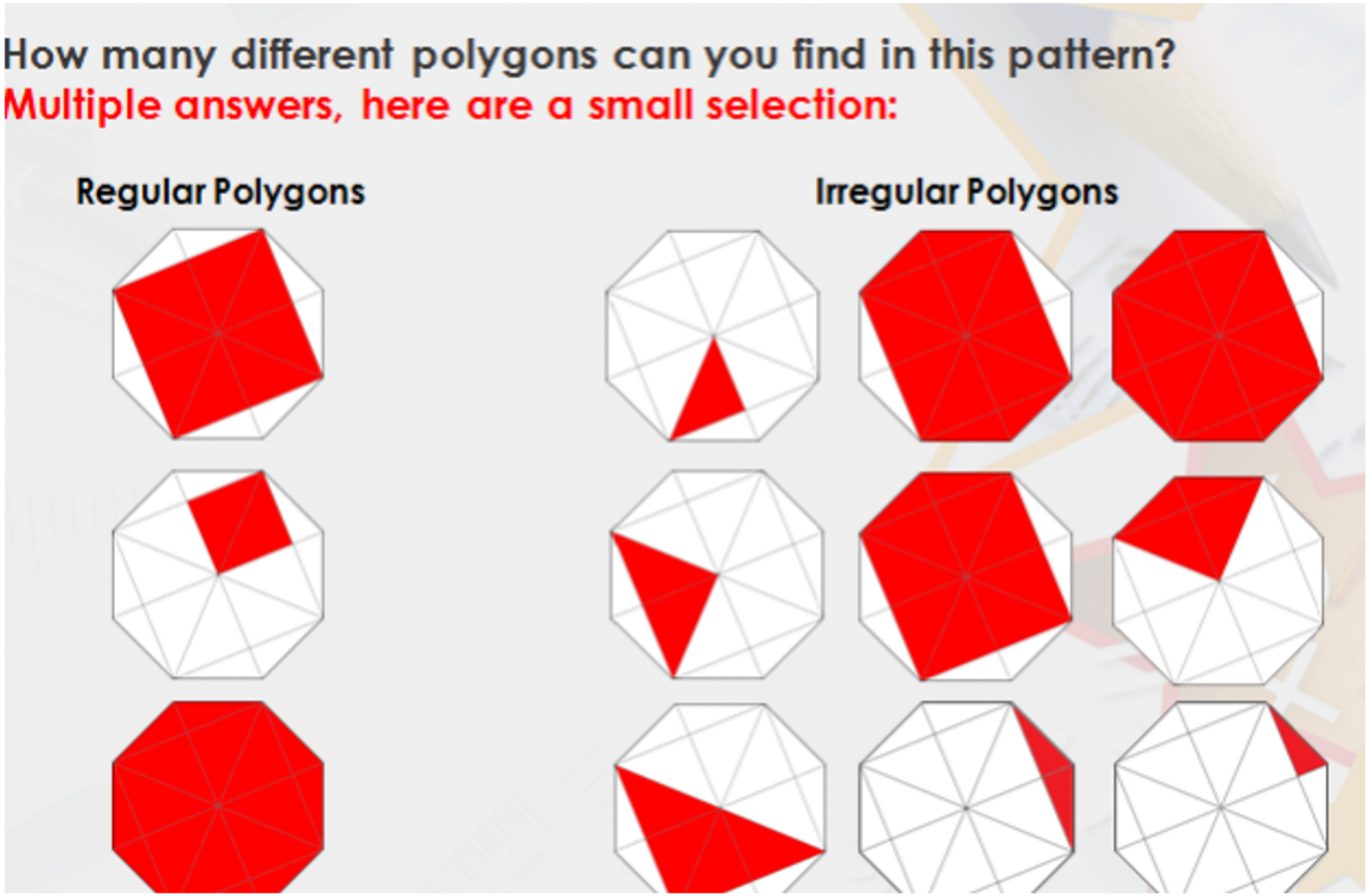
Reminder:

A **regular** polygon has all angles equal and all sides equal, otherwise it is **irregular.**

Starter ANSWER

How many different polygons can you find in this pattern?

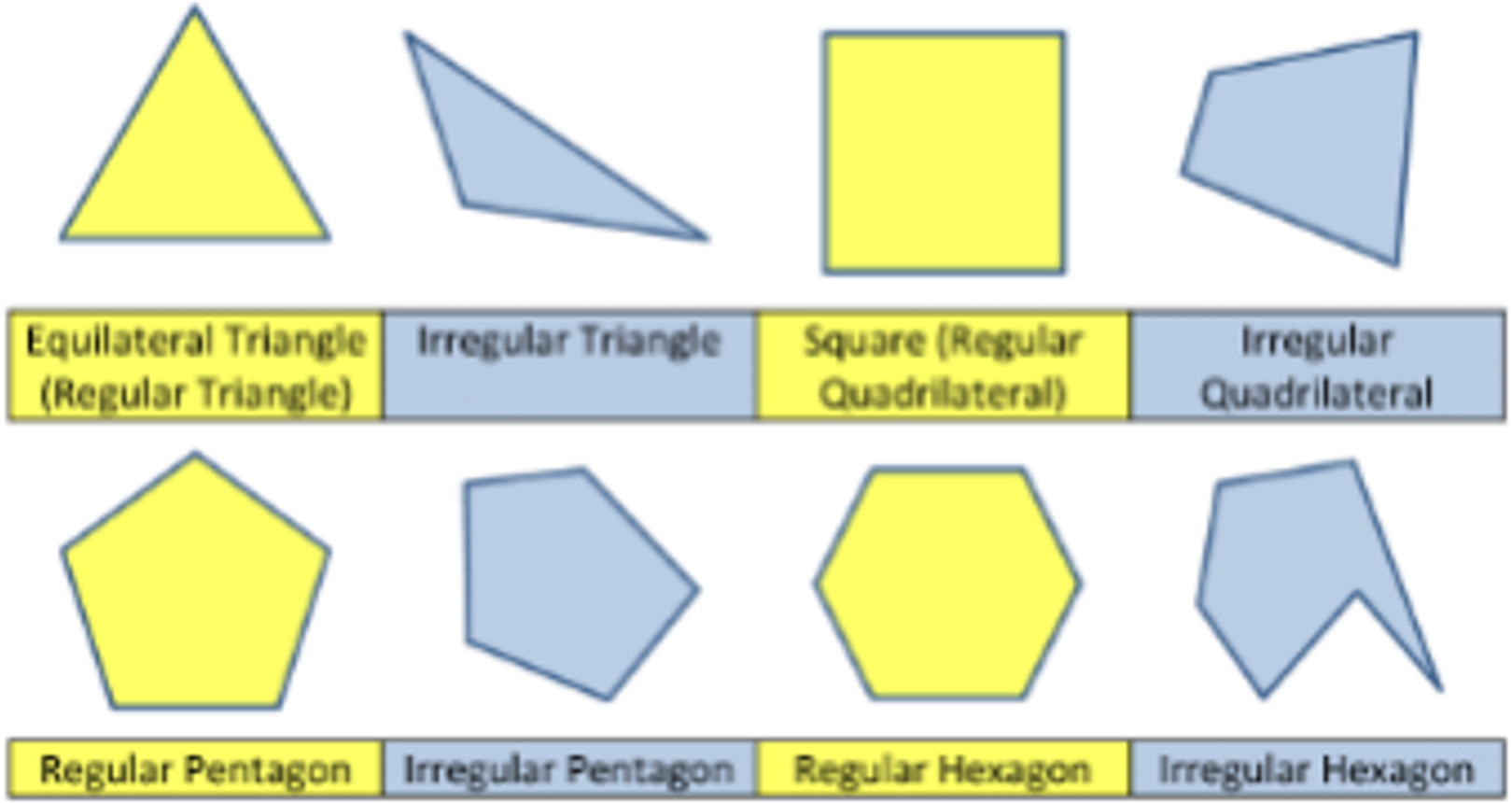
Multiple answers, here are a small selection:

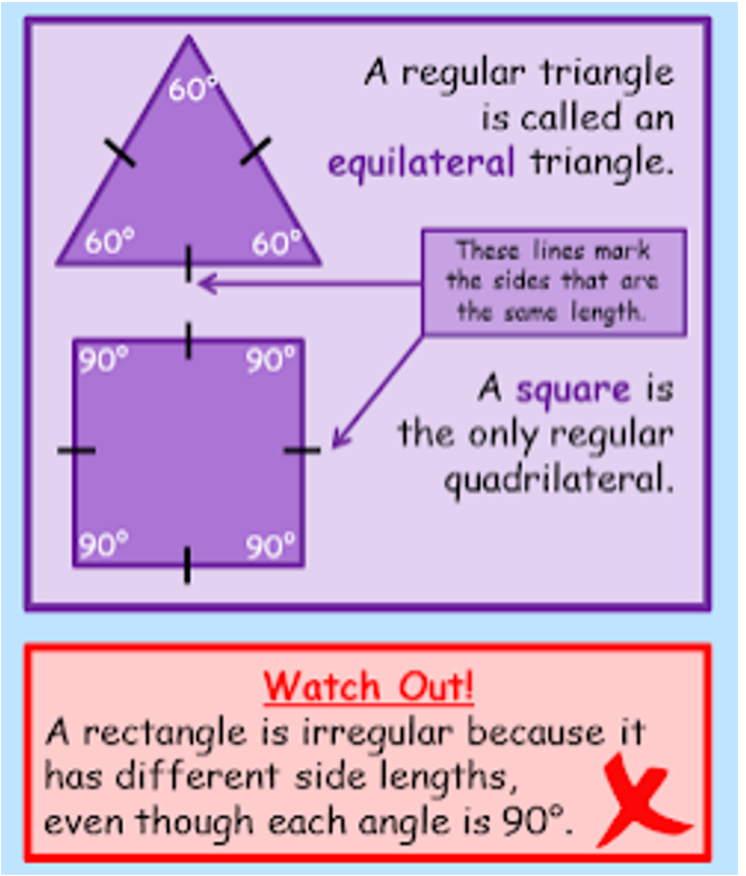


REVISION

USEFUL WEBSITE TO REVISE POLYGONS:https://www.mathsisfun.com/geometry/polygons.html

Polygon comes from Greek. **Poly-** means "many" and **-gon** means "angle".





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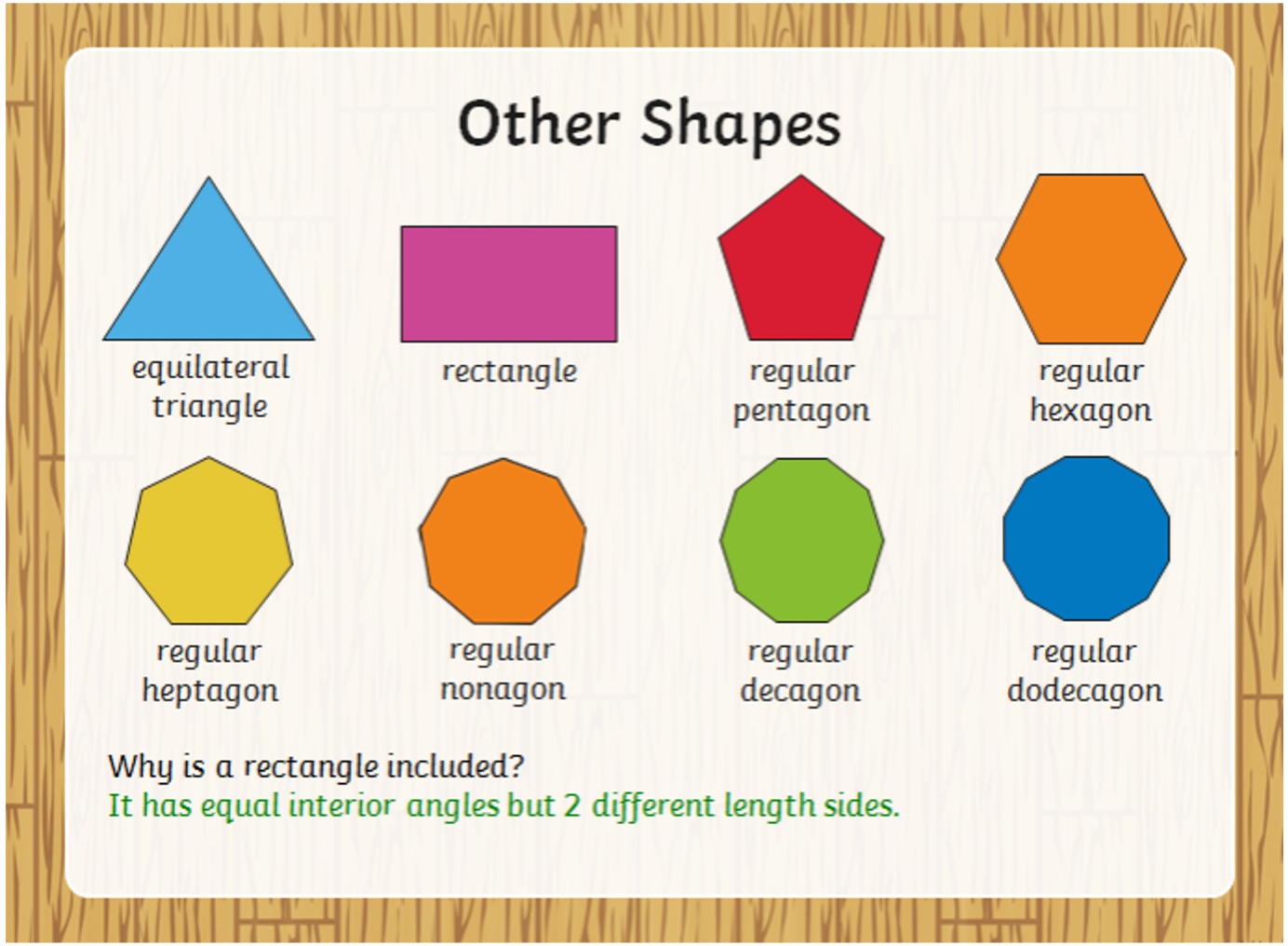
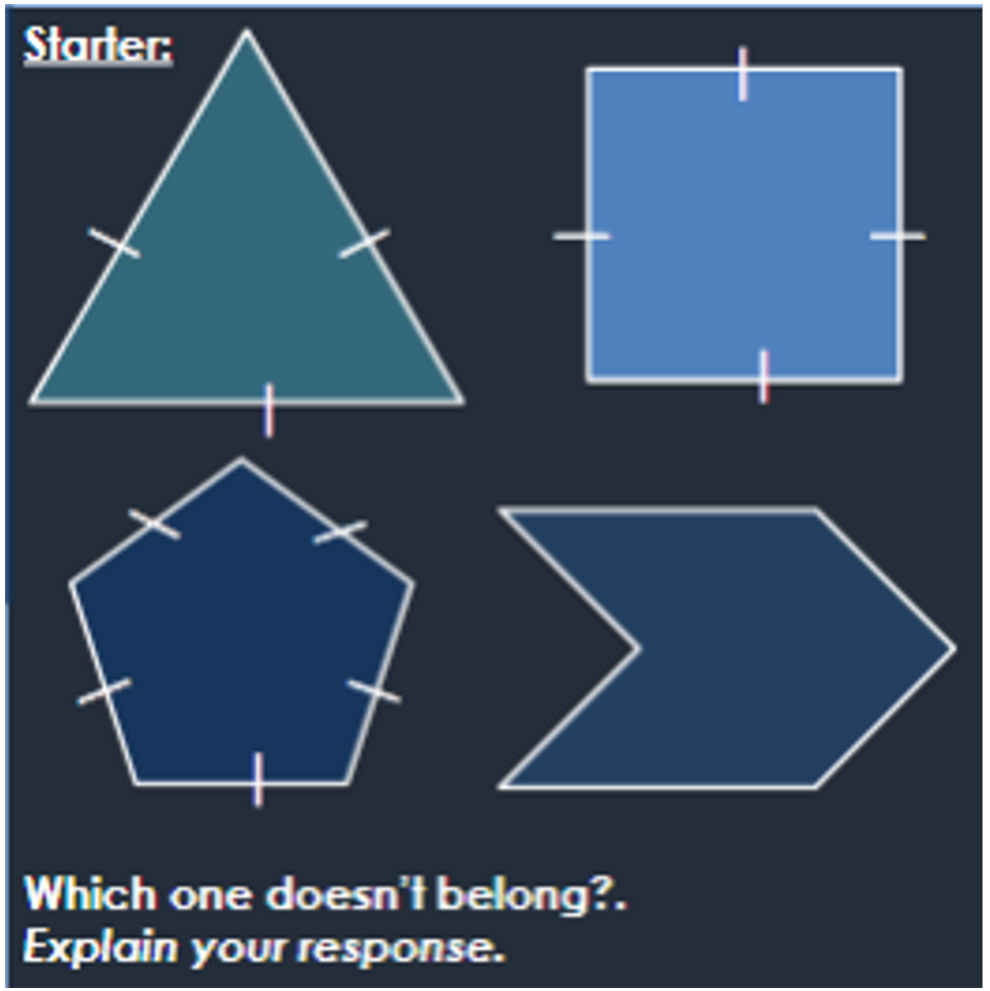


Odd One Out

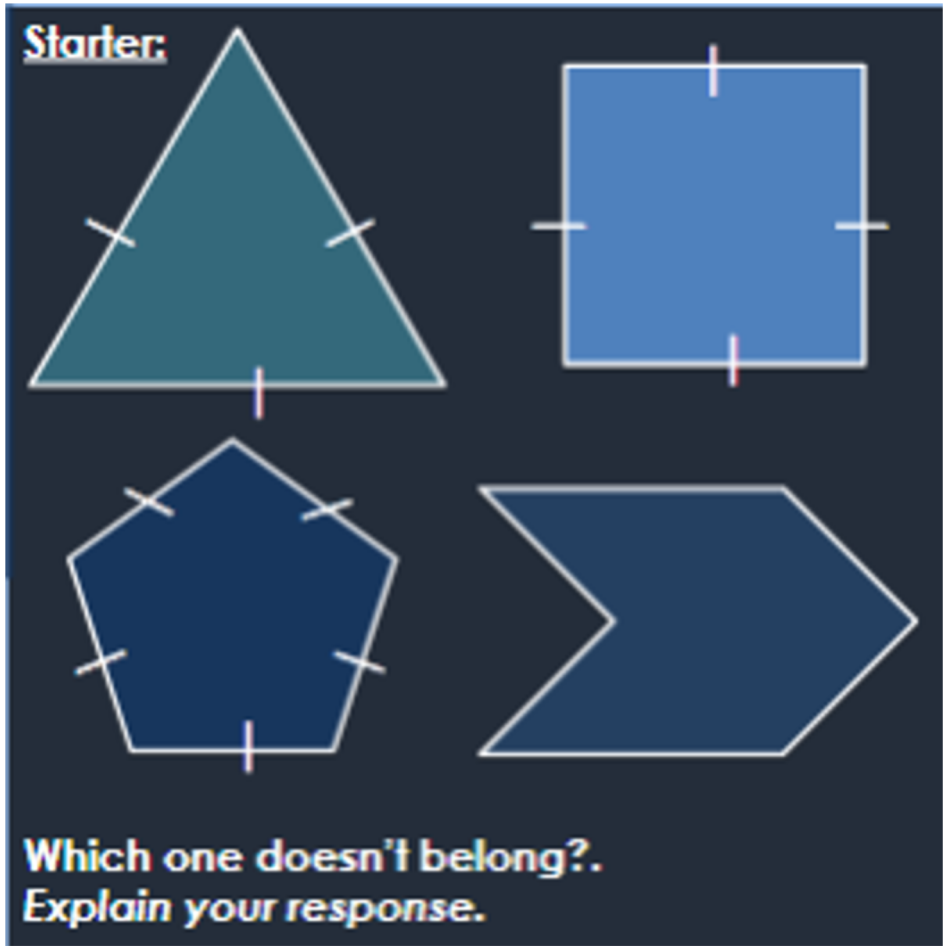


Top Tip:
Try to remember what a hash mark is and the purpose.

Odd One Out

ANSWER

The hexagon (final shape) doesn't belong. The other shapes are regular (all sides are the same length; each angle is equal to).



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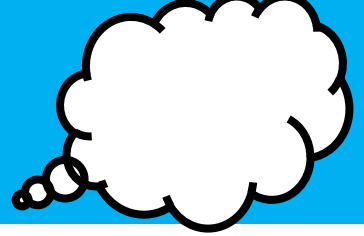


COMPLETE THE CHART ON THE WORKSHEET

Shape	Number of sides	Number of triangles	180° x number of triangles	Sum of internal angles
Quadrilateral	4	2	180° x 2	360 °
Pentagon	5	3		
Hexagon				
Heptagon				

What do you notice about the information in the chart?

ANGLES IN A PENTAGON

This pentagon is split into 3 triangles. Think about the sum of the angles in each triangle. Use this to help you work out the sum of the interior angles in the pentagon.

ANSWER

Each triangle has a sum of 180˚.

180˚ x 3 (there are three triangles) = 540˚

The sum of the interior angles in a pentagon is 540˚.

Top Tip:

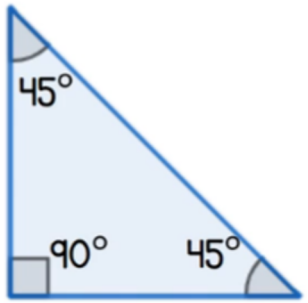
‘Sum’ is another word for ‘total’.

USEFUL VIDEO

https://vimeo.com/405761459

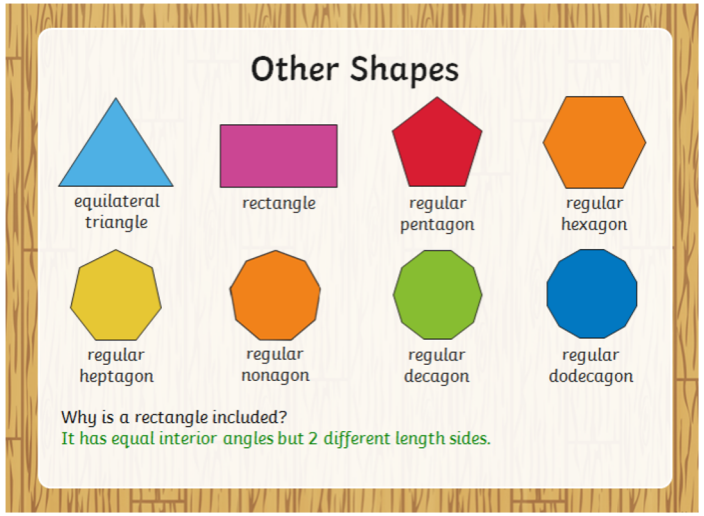
WHITEROSE- LESSON 1- ANGLES IN A POLYGON

Number of sides of polygon	Name of polygon	Sum of internal angles
3	Triangle	180°



EVALUATION

1. How many triangles does a heptagon have?
2. How many sides does a pentagon have?
3. What is the sum of internal angles for a quadrilateral?



Task

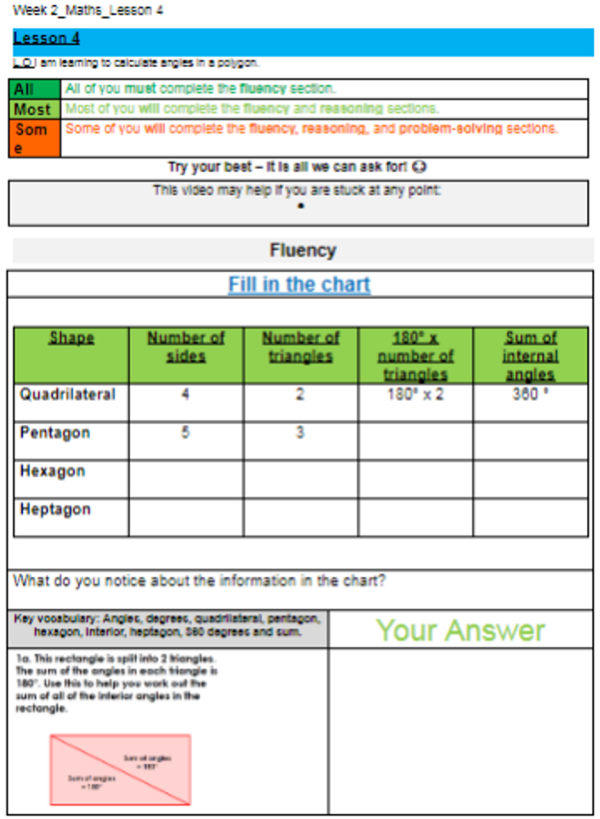
Once you have finished turn this assignment in on Google Classroom.

All	All of you **must** complete the **fluency** section.
Most	Most of you **will** compete the **fluency** and **reasoning** sections.
Some	Some of you **will** complete the **fluency, reasoning,** and **problem-solving** sections.

Try your best – it is all we can ask for! ☺

These videos may help if you are stuck at any point:

- https://corbettmaths.com/2012/08/10/angles-in-polygons/
- https://vimeo.com/405761459



Week 2_Maths_Lesson 4

Lesson 4

LQ I am learning to calculate angles in a polygon.

All	All of you must complete the fluency section.
Most	Most of you will complete the fluency and reasoning sections.
Some	Some of you will complete the fluency, reasoning, and problem-solving sections.

Try your best – it is all we can ask for! ☺

This video may help if you are stuck at any point:

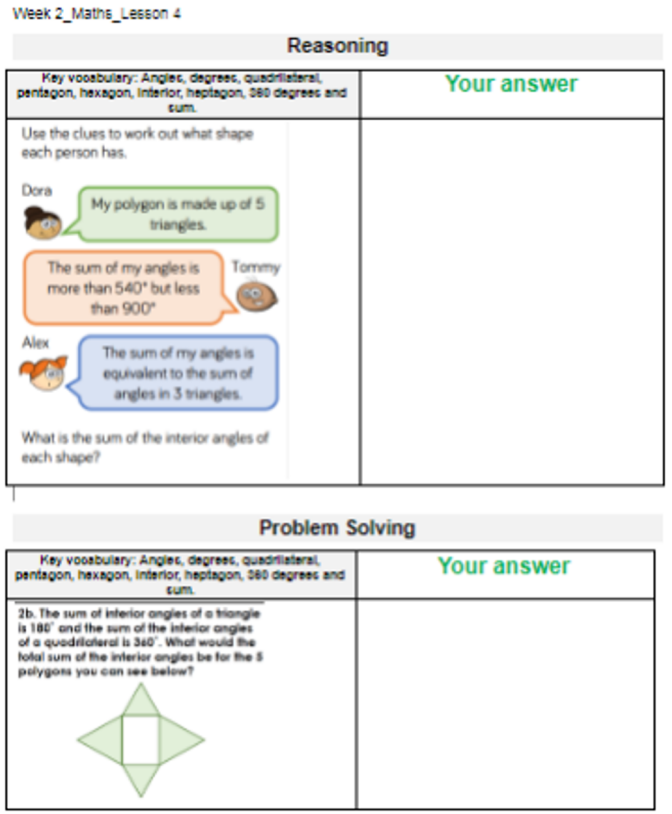
Fluency

Fill in the chart

Shape	Number of sides	Number of triangles	180° x number of triangles	Sum of internal angles
Quadrilateral	4	2	180° x 2	360 °
Pentagon	5	3		
Hexagon				
Heptagon				

What do you notice about the information in the chart?

Key vocabulary: Angles, degrees, quadrilateral, pentagon, hexagon, interior, heptagon, 360 degrees and sum.	Your Answer
1a. This rectangle is split into 2 triangles. The sum of the angles in each triangle is 180°. Use this to help you work out the sum of all of the interior angles in the rectangle.	



Week 2_Maths_Lesson 4

Reasoning

Key vocabulary: Angles, degrees, quadrilateral, pentagon, hexagon, interior, heptagon, 360 degrees and sum.	Your answer
Use the clues to work out what shape each person has. Dora: My polygon is made up of 5 triangles. Tommy: The sum of my angles is more than 540° but less than 900° Alex: The sum of my angles is equivalent to the sum of angles in 3 triangles. What is the sum of the interior angles of each shape?	

Problem Solving

Key vocabulary: Angles, degrees, quadrilateral, pentagon, hexagon, interior, heptagon, 360 degrees and sum.	Your answer
2b. The sum of interior angles of a triangle is 180° and the sum of the interior angles of a quadrilateral is 360°. What would the total sum of the interior angles be for the 5 polygons you can see below?	