Ready-to-go Lesson Slides Year 2

Please note:
2-D and 3-D shapes may be needed for some parts of this lesson.

Geometry: Properties of Shapes

Lesson 3

Spr3

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.

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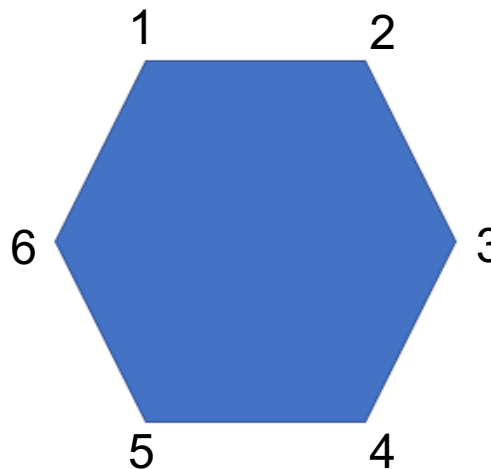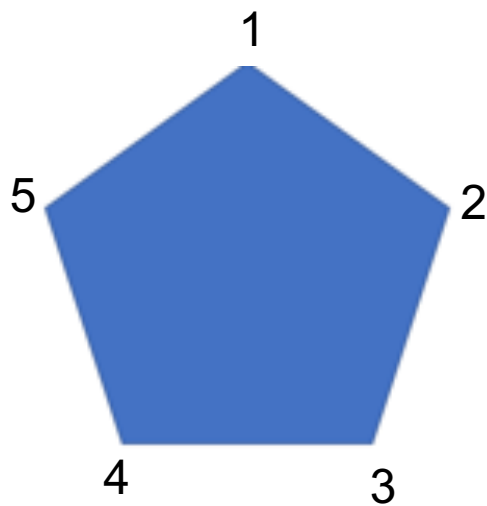
Boosting maths progress through 1-to-1 conversations…

THIRD SPACE LEARNING

To count the vertices on 2-D shapes

Starter: Lola has been asked to find how many **vertices** there are on these two shapes.
She has labelled them.
Is she right?

Success Criteria:

❑ I know that vertex means corner
❑ I know that vertices means corners
❑ I can identify and count the vertices on 2D shapes
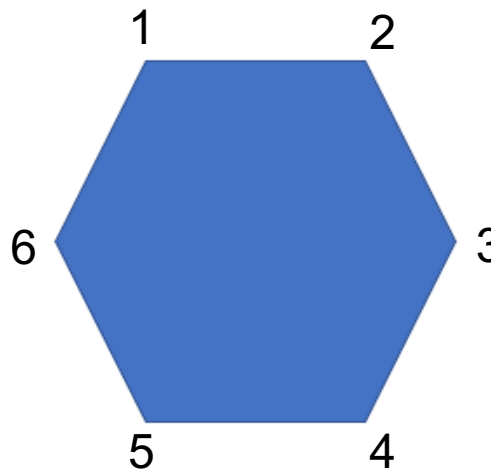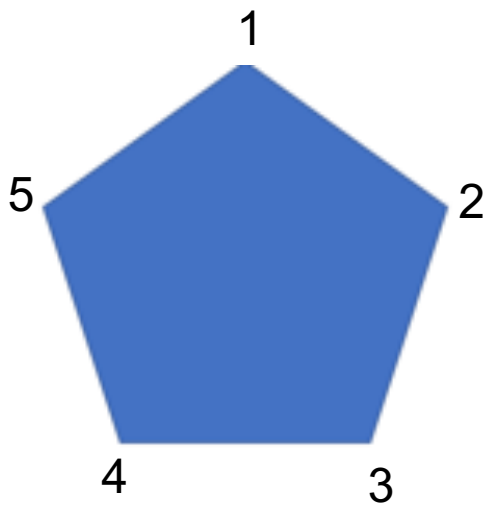❑ I can explain what a vertex is

In this lesson we will use the word vertices rather than corners.

To count the vertices on 2-D shapes

Starter: Lola has been asked to find how many **vertices** there are on these two shapes.
She has labelled them.
Is she right?

Yes, Lola is right. Vertices is another word for corners and she has labelled them correctly.

In this lesson we will use the word vertices rather than corners.

To count the vertices on 2-D shapes

Starter: Can you match the shape to the correct label?
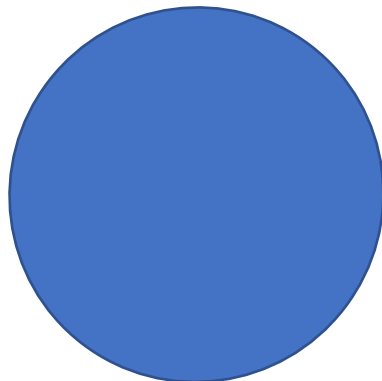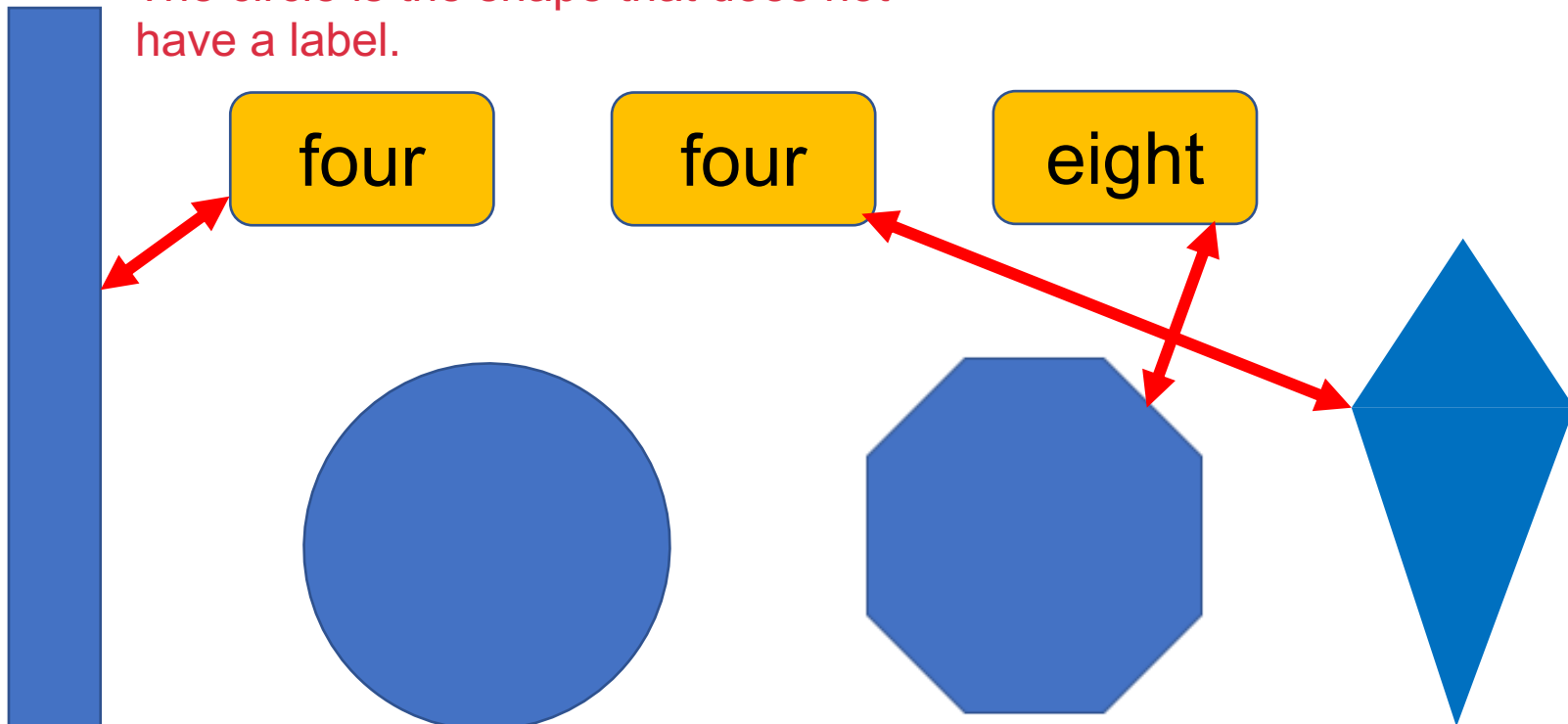
The label is the number of vertices a shape has.

Which shape does not have a label?

four   four   eight

To count the vertices on 2-D shapes

Starter: Can you match the shape to the
correct label?
The label is the number of vertices a
shape has.
Which shape does not have a label?
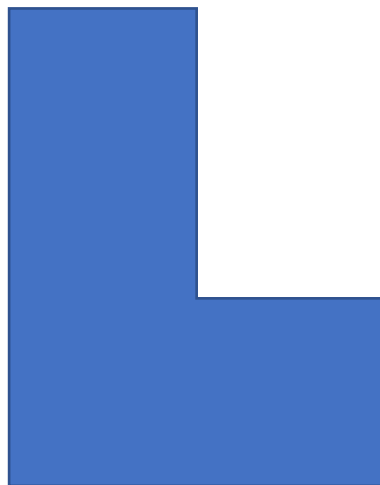The circle is the shape that does not
have a label.

four

four

eight

To count the vertices on 2-D shapes

Talking Time:

This is an irregular hexagon.

How many vertices does it have?
Can you label them to show that you are right?

Remember that a vertex is where two lines meet at a point.

To count the vertices on 2-D shapes

Talking Time:

This is an irregular hexagon.

How many vertices does it have?
Can you label them to show that you are right?

1   2

3   4

6   5
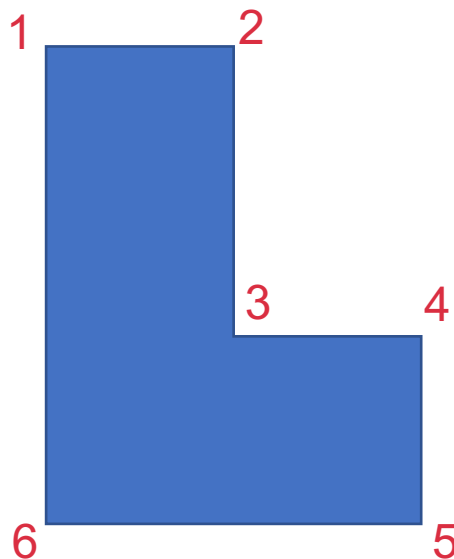
Extension:
If a regular hexagon and this irregular hexagon have six vertices, does that mean that ALL hexagons have six vertices?
Try drawing or making a few more irregular ones.

Remember that a vertex is where two lines meet at a point.

To count the vertices on 2-D shapes

Talking Time: Alena and Bishan are talking about
vertices on shapes.
They look at a circle.
Who is correct? Why?
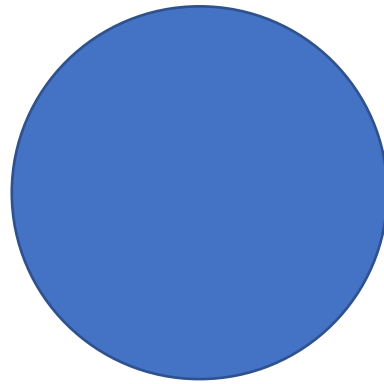
I think that the circle has no vertices.
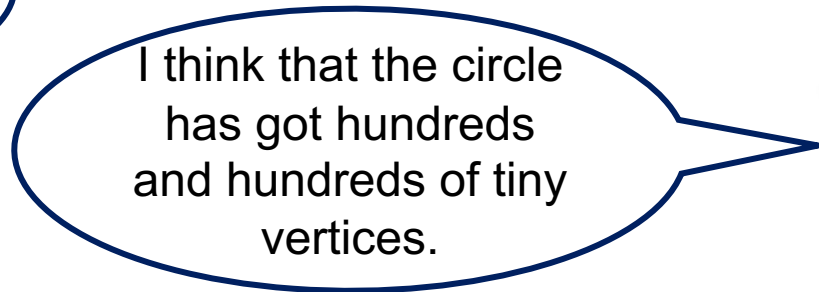
I think that the circle has got hundreds and hundreds of tiny vertices.

To count the vertices on 2-D shapes

Talking Time: Alena and Bishan are talking about vertices on shapes.
They look at a circle.
Who is correct? Why?

Alena is right.
The circle has only got one side. A vertex is where two lines meet at a point.
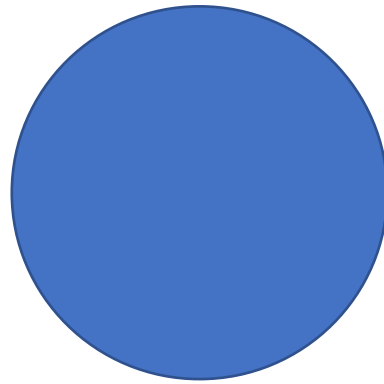
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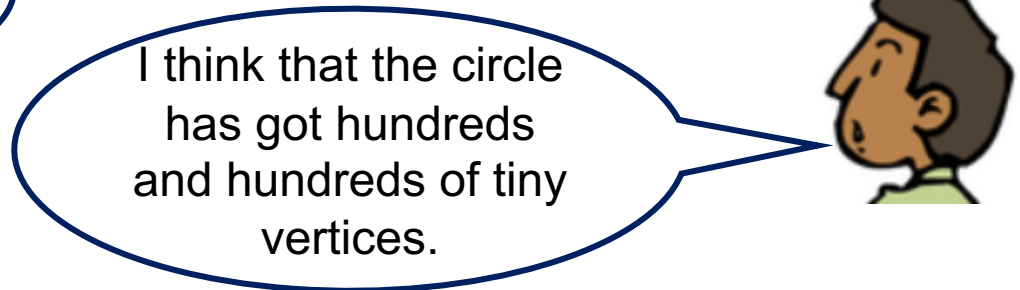
I think that the circle has got hundreds and hundreds of tiny vertices.

To count the vertices on 2-D shapes

Activity 1:

Can you work out which 2-D shape Ollie could be thinking about? Could there be more than one answer?

Which 2-D shape is Ollie definitely NOT thinking about? How do you know?
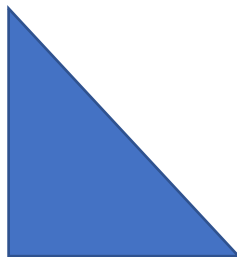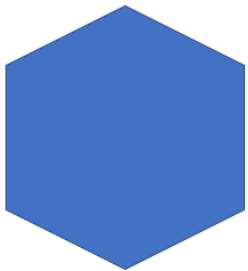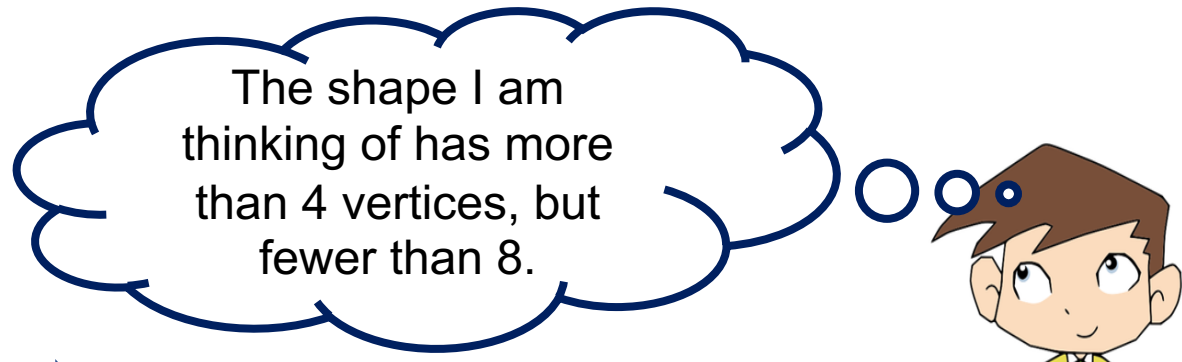
The shape I am thinking of has more than 4 vertices, but fewer than 8.

To count the vertices on 2-D shapes

Activity 1:

Can you work out which 2-D shape Ollie could be thinking about? Could there be more than one answer?

Ollie could be thinking about the pentagon with 5 vertices or the hexagon with 6 vertices.

Which 2-D shape is Ollie definitely NOT thinking about? How do you know?

It cannot be the triangle with 3 vertices.
It cannot be the square with 4.
It cannot be the octagon with 8.

The shape I am thinking of has more than 4 vertices, but fewer than 8.

To count the vertices on 2-D shapes

Talking Time:

Which of these 2-D shapes are pentagons?
Can you put a ring around each pentagon?
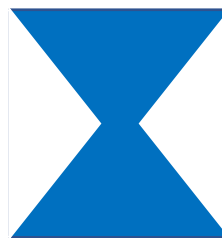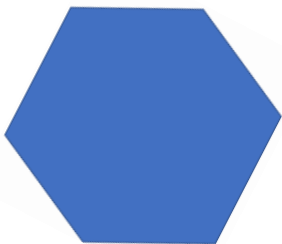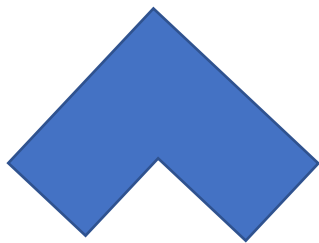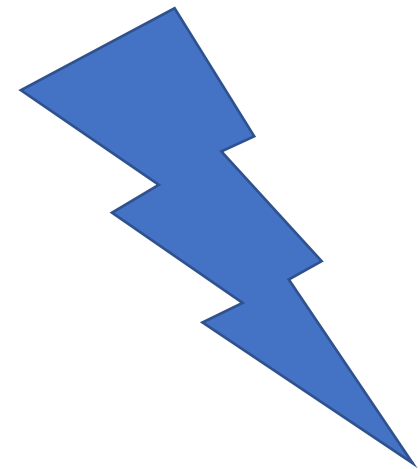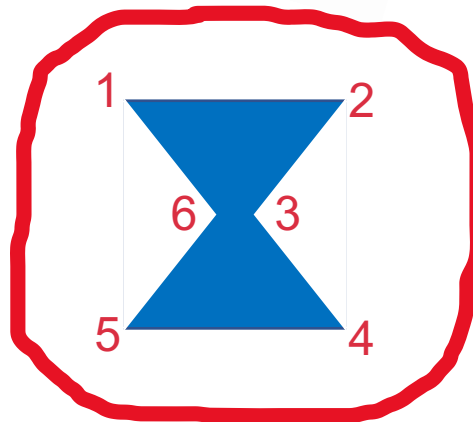Can you show that you are right by labelling the five vertices?

To count the vertices on 2-D shapes

Talking Time:

Which of these 2-D shapes are pentagons?
Can you put a ring around each pentagon?
Can you show that you are right by labelling the five vertices?

To count the vertices on 2-D shapes

Talking Time:

Which of these 2-D shapes are hexagons?
Can you put a ring around each hexagon?
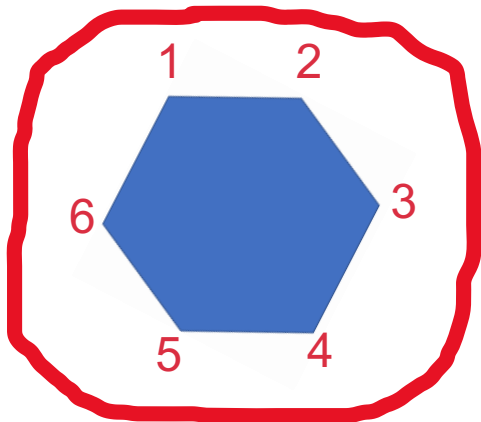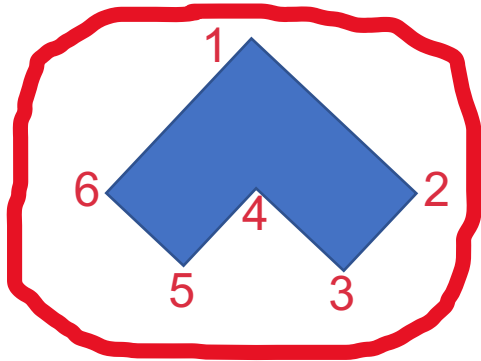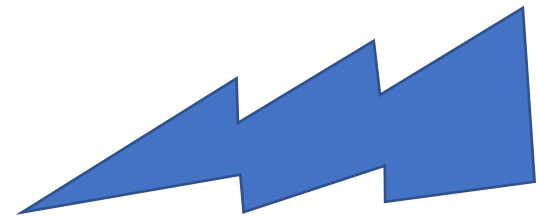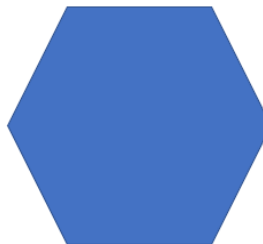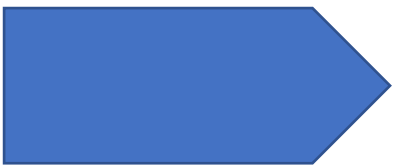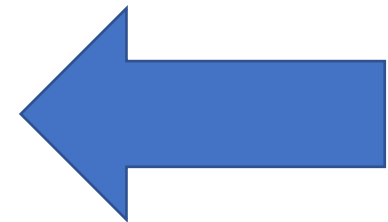Can you show that you are right by labelling the six vertices?

To count the vertices on 2-D shapes

Talking Time:

Which of these 2-D shapes are hexagons?
Can you put a ring around each hexagon?
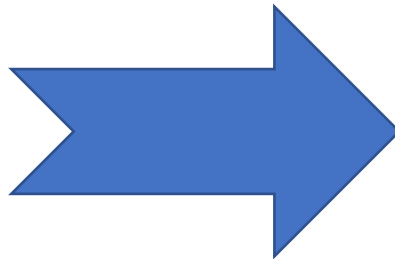Can you show that you are right by labelling the six vertices?

To count the vertices on 2-D shapes

Talking Time:

Only one of these shapes is an octagon.
Can you find it and put a ring around it?
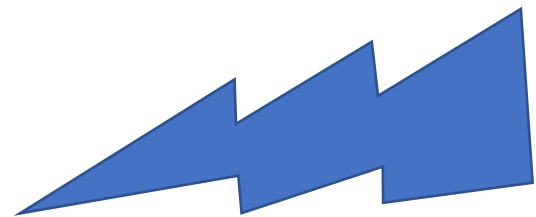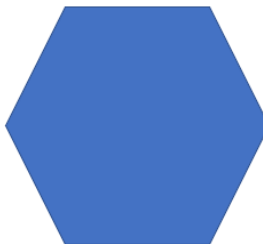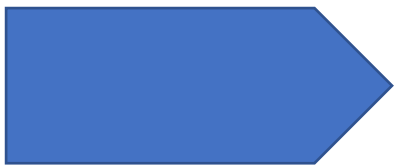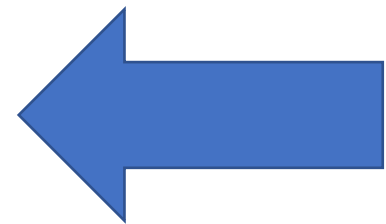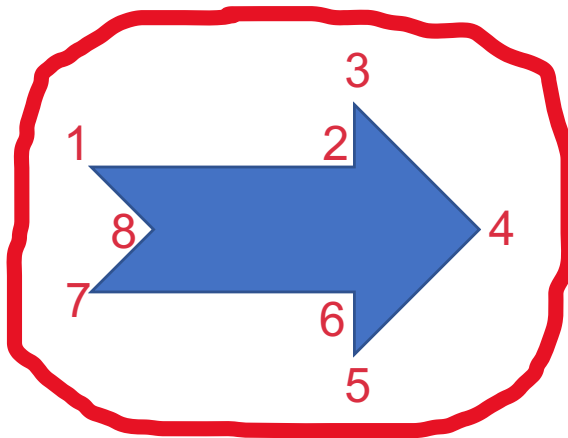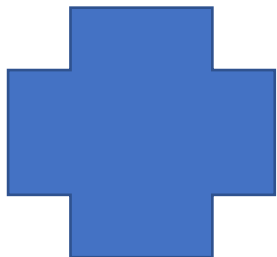Can you show that you are right by labelling the vertices?

To count the vertices on 2-D shapes

Talking Time:

Only one of these shapes is an octagon.
Can you find it and put a ring around it?
Can you show that you are right by labelling the vertices?

To count the vertices on 2-D shapes

Activity 2:

Alice is hiding a 2-D shape behind a screen.
Could the shape be a rectangle?
Can you explain your thinking?

To count the vertices on 2-D shapes

Activity 2:

Alice is hiding a 2-D shape behind a screen.
Could the shape be a rectangle?
Can you explain your thinking?

It cannot be a rectangle because we can already see four vertices and the vertices are not opposite each other.
A rectangle also usually has two equal shorter sides and two equal longer sides.
The three sides we can see are all the same length.
This shape is probably a hexagon.

To count the vertices on 2-D shapes

Talking Time:

Can you complete this table with the names of the shapes and the number of vertices?

name	shape	number of vertices

To count the vertices on 2-D shapes

Talking Time:

Can you complete this table with the names of the shapes and the number of vertices?

name	shape	number of vertices
circle		0
square		4
pentagon		5
octagon		8
triangle		3

To count the vertices on 2-D shapes

Talking Time:

Can you complete this table with the names of the **irregular** shapes and the number of vertices?

name	shape	number of vertices

Hint: it might help to start with the number of vertices

To count the vertices on 2-D shapes

Talking Time:

Can you complete this table with the names of the **irregular** shapes and the number of vertices?

name	shape	number of vertices
pentagon		5
hexagon		6
octagon		8
hexagon		6
octagon		8

Hint: it might help to start with the number of vertices

To count the vertices on 2-D shapes

Talking Time:

Noah is ordering the 2-D shapes below.
He is putting the shape with the least vertices first and going up to the shape with the most vertices at the end.
Can you help him to order the shapes on the track?
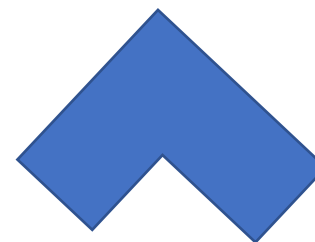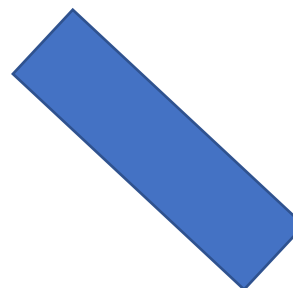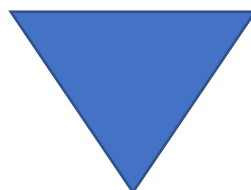

least ➔ most

To count the vertices on 2-D shapes

Talking Time:

Noah is ordering the 2-D shapes below.
He is putting the shape with the least vertices first and going up to the shape with the most vertices at the end.
Can you help him to order the shapes on the track?
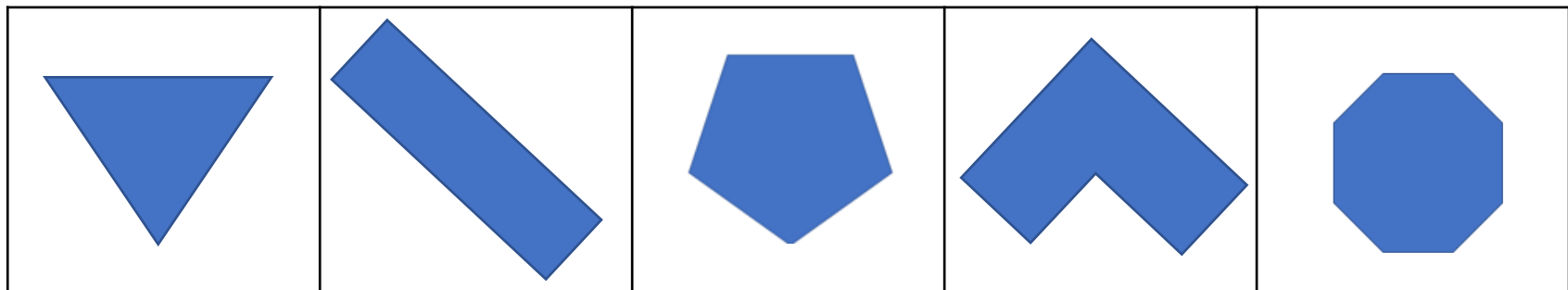
The triangle has 3 vertices.   The rectangle has 4 vertices.   The pentagon has 5 vertices.   The irregular hexagon has 6 vertices.   The octagon has 8 vertices.

least   most

To count the vertices on 2-D shapes
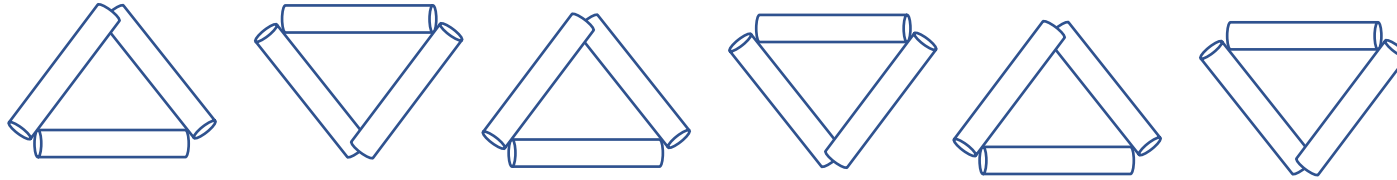
Evaluation:

Ava is making a pattern of triangles using paper straws.
She has created a table to keep track of the vertices for each shape.
What will the next shape be?
Can you fill in the table?

Extension:
How many vertices would the tenth shape have? What about the twentieth? How do you know?

Number of shapes	1	2	3	4	5	6			
Number of vertices	3	6	9	12	15	18			

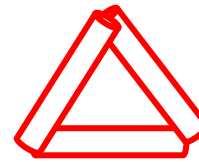# To count the vertices on 2-D shapes

Evaluation:

Ava is making a pattern of triangles using paper straws.
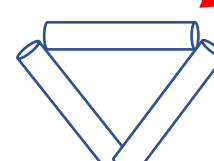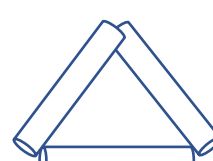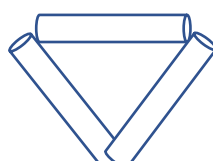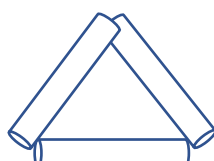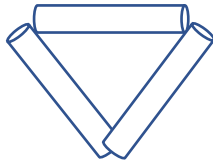She has created a table to keep track of the vertices for each shape.
What will the next shape be?
Can you fill in the table?

Success Criteria:

- ❑ I know that vertex means corner
- ❑ I know that vertices means corners
- ❑ I can identify and count the vertices on 2D shapes
- ❑ I can explain what a vertex is

Extension:
How many vertices would the tenth shape have? What about the twentieth? How do you know?

Number of shapes	1	2	3	4	5	6	7	8	9
Number of vertices	3	6	9	12	15	18	21	24	27

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