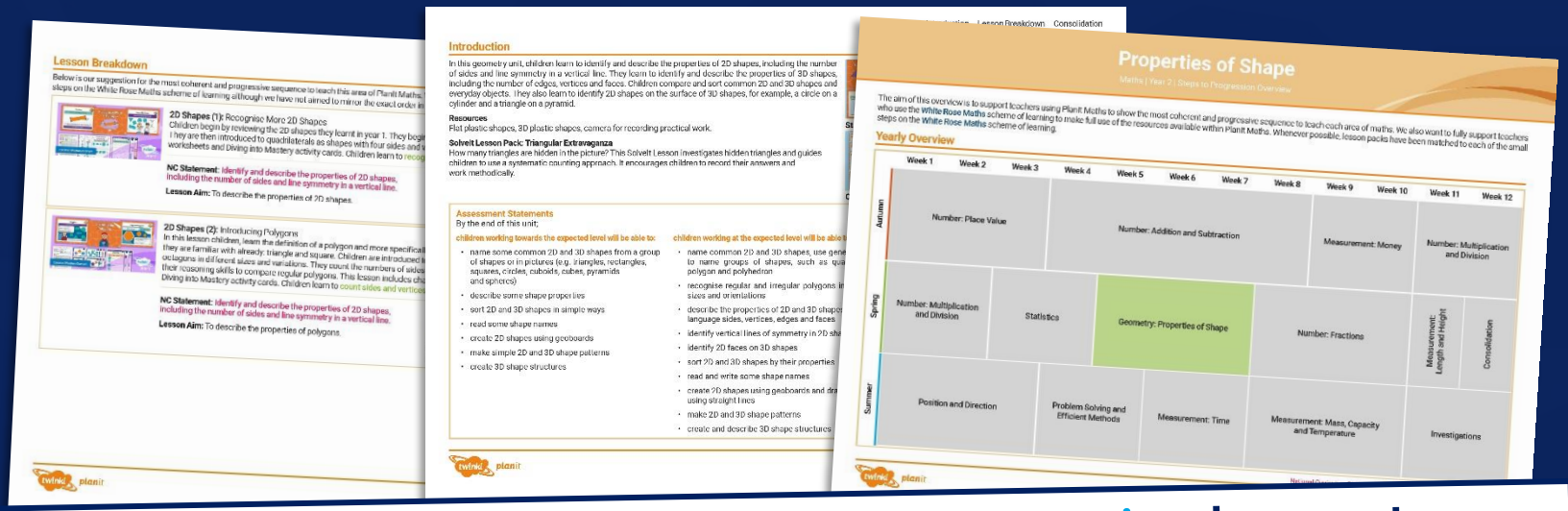
Maths

Properties of Shapes

Need a coherently planned sequence of lessons to complement this resource?



See our Properties of Shapes Steps to Progression document.

Twinkl PlanIt is our award-winning scheme of work with over 4000 resources.

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Introducing Polygons

Aim

- To describe the properties of polygons.

Success Criteria

- I can say what a polygon is.
- I can describe the number of sides and vertices a polygon has.
- I can compare polygons using mathematical language.

Remember It

Unscramble the letters to make the names of 2D shapes.
Write the names on your whiteboard.

Polygons

Whole Class

Polygons are a type of 2D shape.

Polygons have straight sides.

Polygons are closed shapes.

This means all of the sides meet up.

These shapes are all polygons:

Can you name any of these shapes?

Polygons

Whole Class

Are these shapes polygons? Explain your ideas.

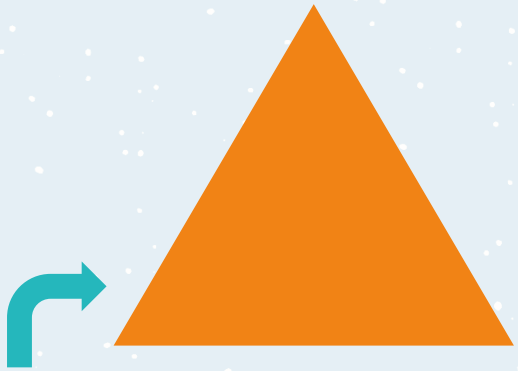
These shapes are not polygons because they have curved sides.

These shapes are not polygons because they have open sides.

Regular Polygons

Whole Class

Regular polygons have sides of equal length.
Here are some we know already:



A triangle with 3 equal sides.

Are all triangles regular polygons?

No, not all triangles have 3 equal sides.

Regular Polygons

Whole Class

Regular polygons have sides of equal length.
Here are some we know already:

A square with 4 equal sides.

Are all quadrilaterals regular polygons?

No, not all quadrilaterals have 4 equal sides.

Regular Polygons

Whole Class

Let's meet some new **regular polygons**.
How many **sides** do these shapes have?
How many **vertices**?

How are they the same?
How are they different?

These shapes all have **5 straight sides**.
The sides are equal.
They all have **5 vertices**.
Although they might look different,
they are all the same shape.
This shape is a **pentagon**.

Regular Polygons

Whole Class

How many **sides** do these shapes have?
How many **vertices**?

How are they the same?
How are they different?

These shapes all have **6 straight sides**.
The sides are equal.
They all have **6 vertices**.
Although they might look different, they are all the same shape.
This shape is a **hexagon**.

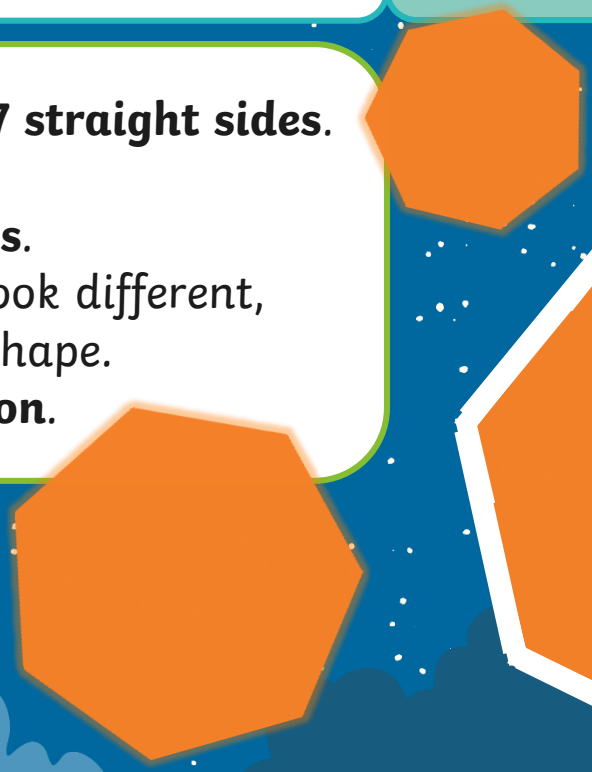
Regular Polygons

Whole Class

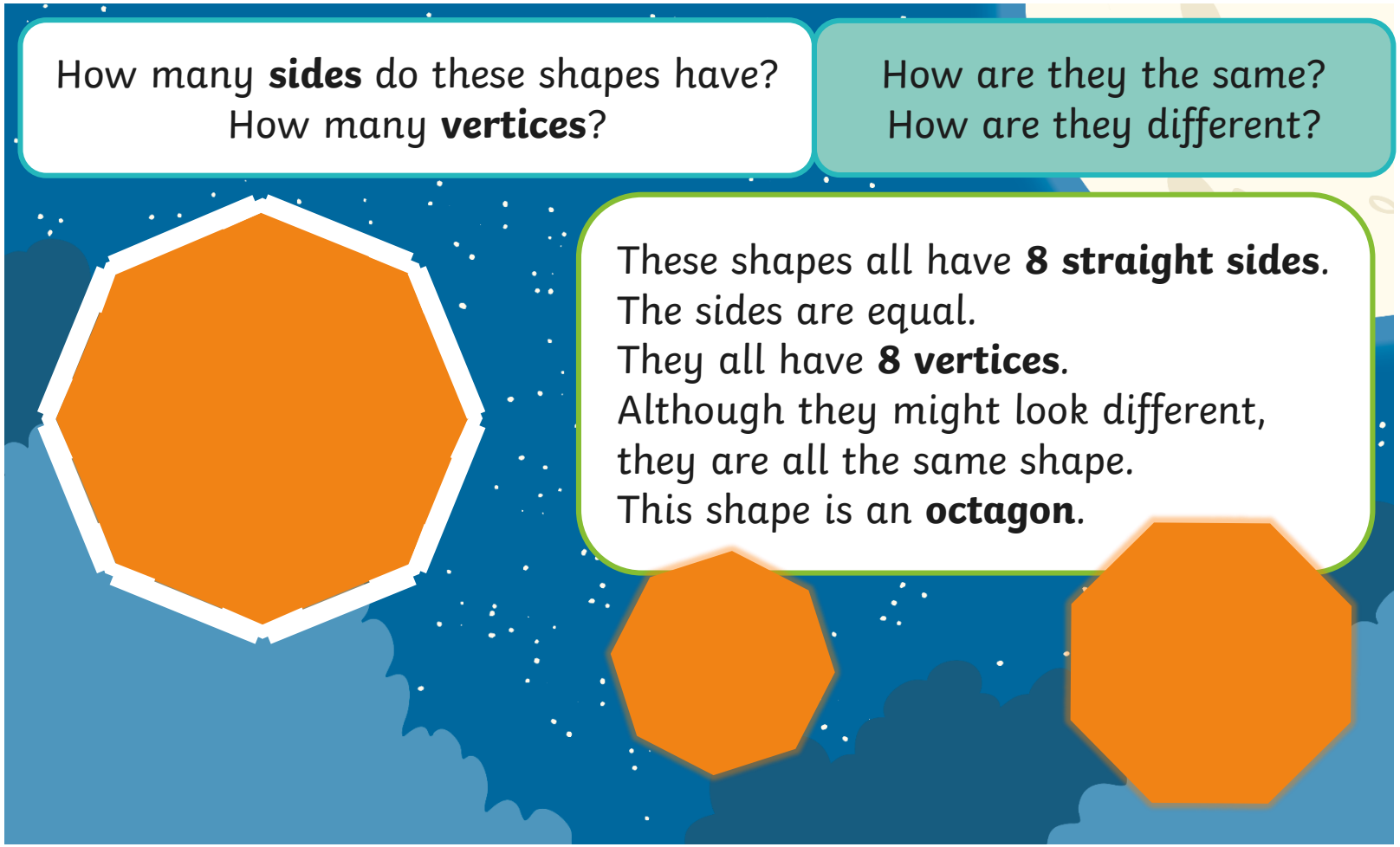
How many **sides** do these shapes have?
How many **vertices**?

How are they the same?
How are they different?

These shapes all have **7 straight sides**.
The sides are equal.
They all have **7 vertices**.
Although they might look different,
they are all the same shape.
This shape is a **heptagon**.



Regular Polygons



Regular Polygons

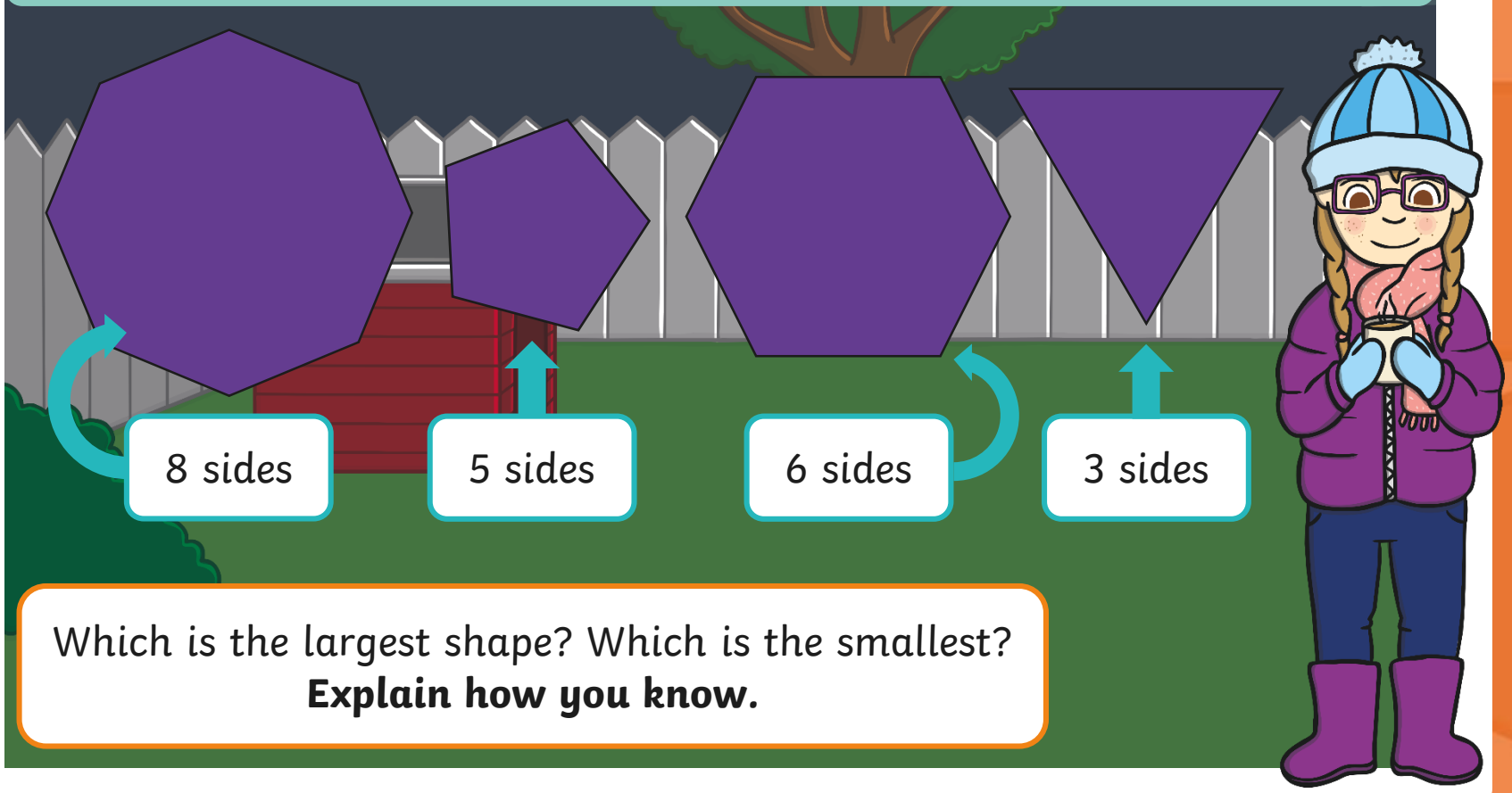
There are many more polygons with even more sides. You could go on forever learning about polygons with more and more sides.

Funky facts:
A polygon with **50 sides** is called a **pentacontagon**.
A polygon with **100 sides** is called a **hectogon**.

Luckily, we don't need to remember every single shape name. We can just call them polygons.

Comparing Polygons

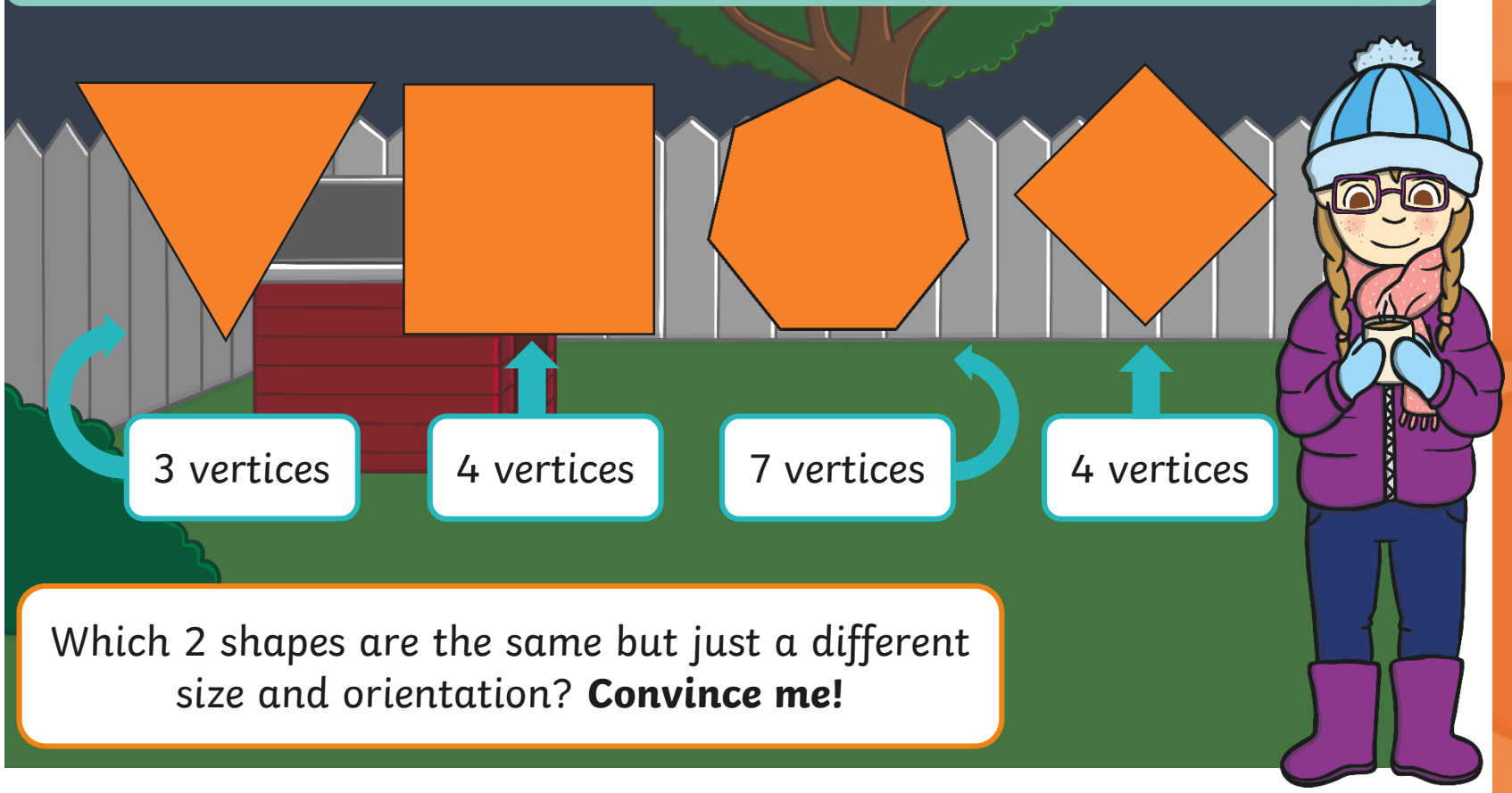
Here are 4 polygons. How many sides do they each have?



Which is the largest shape? Which is the smallest?
Explain how you know.

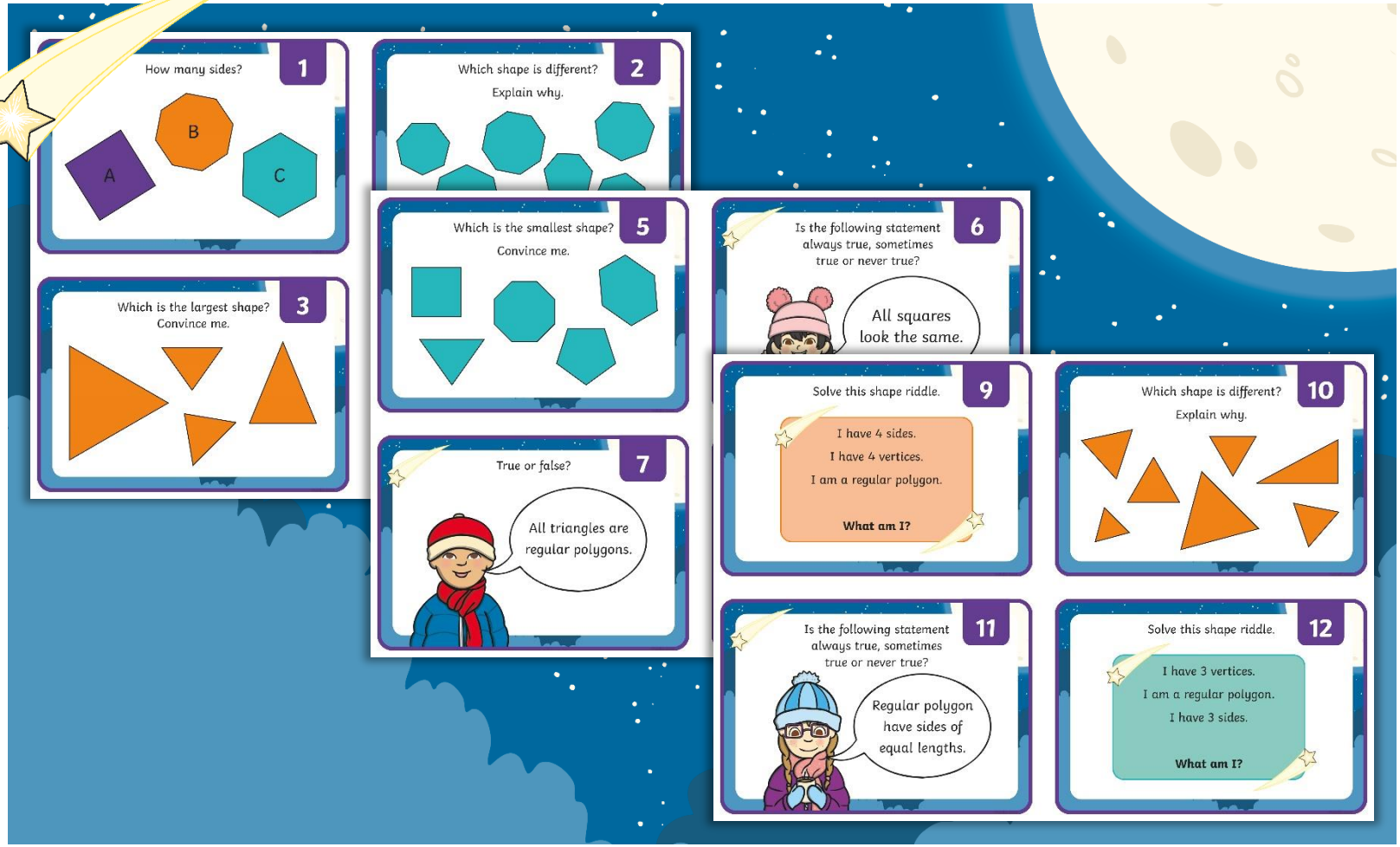
Comparing Polygons

Here are 4 polygons. How many vertices do they each have?



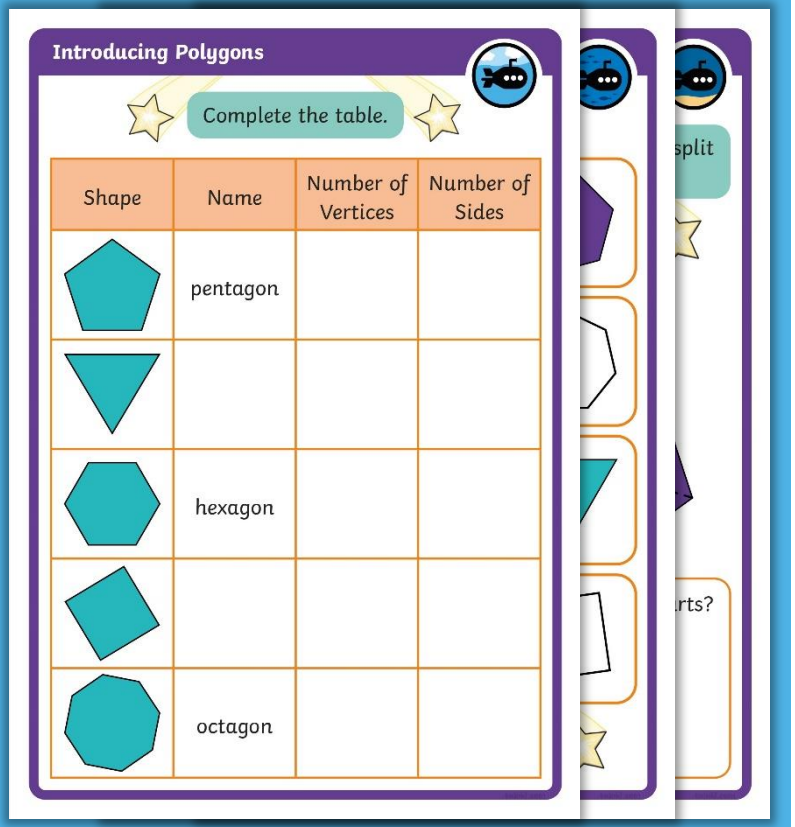
Which 2 shapes are the same but just a different size and orientation? **Convince me!**

Polygon Challenge Cards

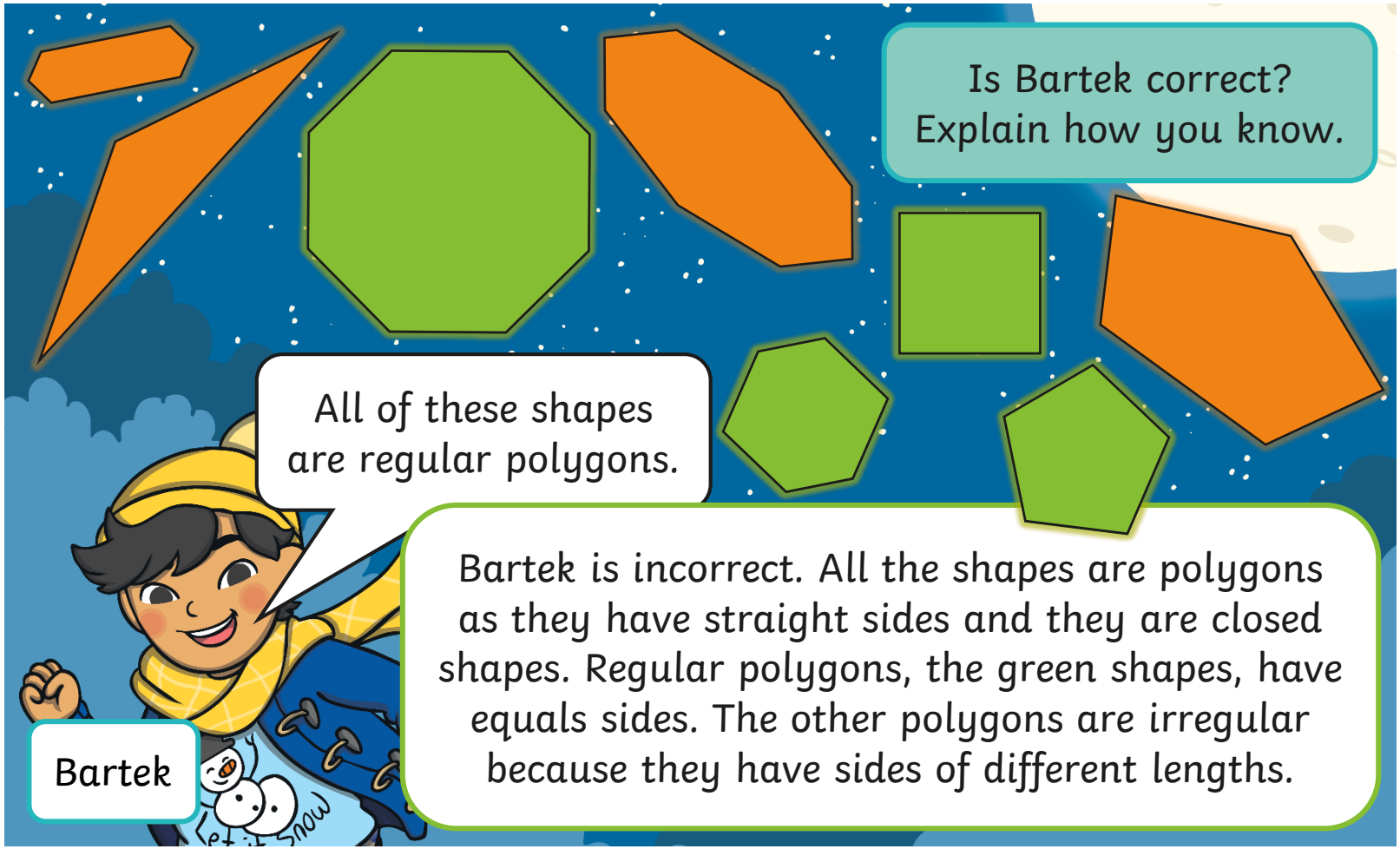


Diving into Mastery

Dive in by completing your own activity!



Spotting Regular Polygons



Aim

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Success Criteria

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