



SCIENCE MUSEUM GROUP



SHAPE DETECTIVES

MAKING 	Age 5-7	Topic MATHS, GEOMETRY	 30 MIN
	Skills used MAKING OBSERVATIONS • CURIOSITY		

Overview for adults

Shapes and patterns can be found all around us – from flowers to footballs, seashells to staircases. This activity involves cutting out templates and looking through the openings to find these shapes in the real world.

What's the maths?

Mathematicians define straight-sided two-dimensional shapes according to the number of sides or 'vertices' (corners) they have. The number of sides is always equal to the number of vertices – so a square or a rectangle has four of each, while a triangle has three of each. All two-dimensional shapes with straight sides are called polygons; circles and ellipses (ovals) have curved sides.

Maths in your world

Architects, builders, designers and engineers make good use of all the simple shapes found in this activity to build structures and design products. Squares, rectangles and regular hexagons are great shapes for paving slabs or tiles because they fit together perfectly and cover a surface, or tessellate. Triangles are an ideal shape for building large structures such as bridges and towers that need to be very strong because they are rigid and cannot skew.

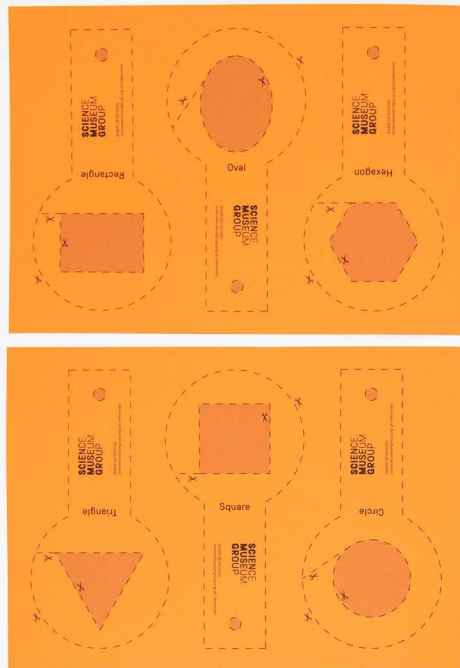
Did you know...?

A football is made up of two different repeating shapes. The black patches are pentagons and the white patches are hexagons.

Cut out and use your own shape finders to discover shapes hiding in the world around you. Can you spot them all?

You will need...

Shape
Detectives
templates



10cm of string
or a pipe cleaner



Hole punch



Tape



Scissors

Top tips: The shape finders will be sturdier if printed on thick paper or laminated.

The middle part of the template can be tricky to cut out using scissors. An adult could cut it out using a craft knife and cutting board.

Think and talk about...

- What are the similarities and differences between the shapes?
- Why do you think most doors and windows are rectangles?

Investigate...

- Which shape is the most common?
- What shapes are difficult to make with your hands?
- Try making your own new shape, and add it to your set.

Follow these steps...



- 1** Cut out the shape finder templates. Then cut along the dotted lines and cut out the shapes.



- 2** Tape the dotted lines back together.



- 3** Punch a hole in each template and then use the holes to tie them all together with a loop of string or a pipe cleaner.



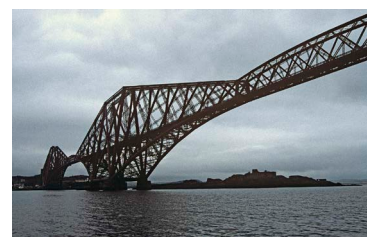
- 4** Search all around at school, at home, in a museum or out and about. Can you find something for every shape outline?

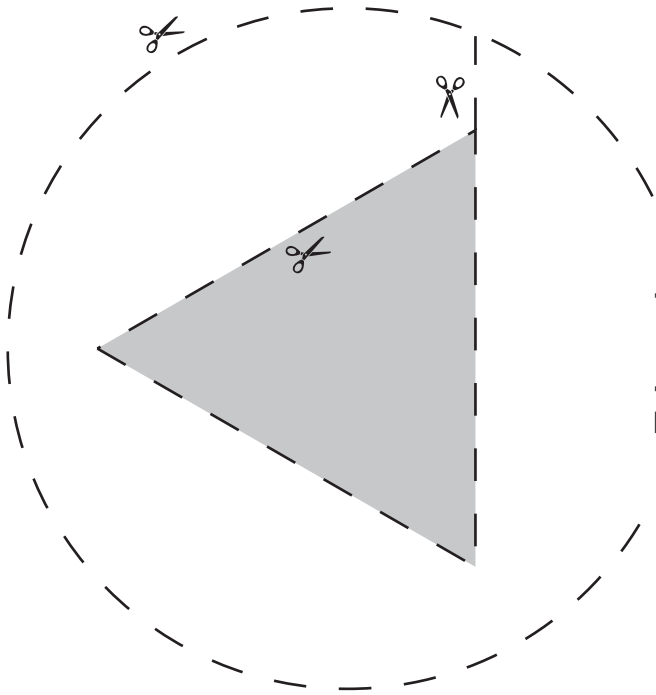


- 5** Try making shapes with your hands. What shapes can you make? What shapes can you find?

Maths in your world

You'll find squares, rectangles, hexagons, triangles and circles everywhere in your everyday life – in buildings, cars, furniture and even in nature. Triangles are particularly useful in structures such as towers and bridges because they are very strong.





Triangle

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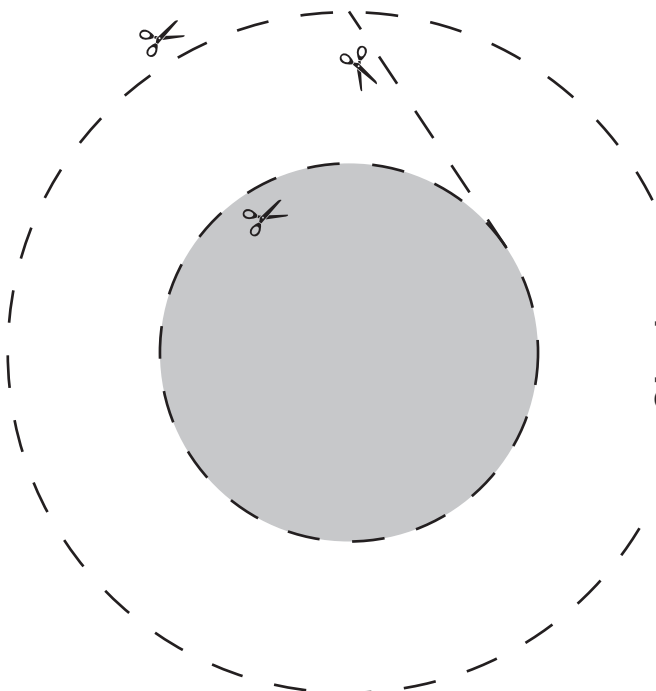
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Square

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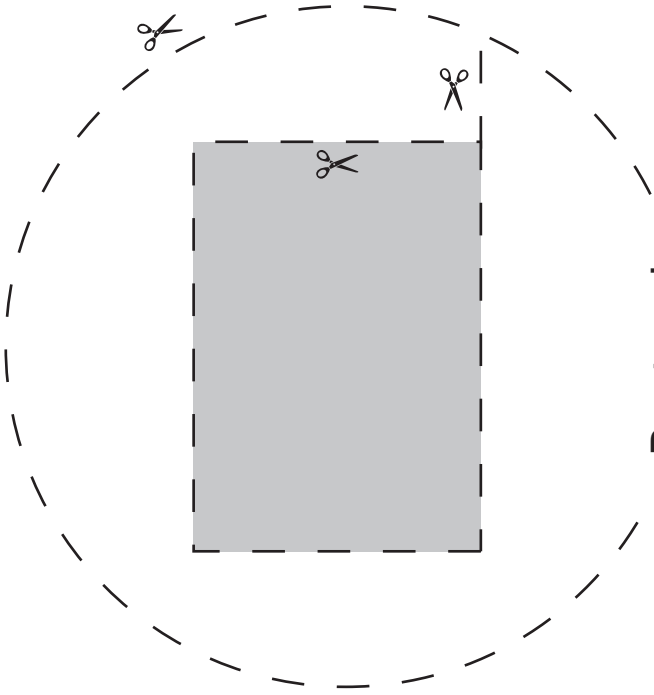


Circle

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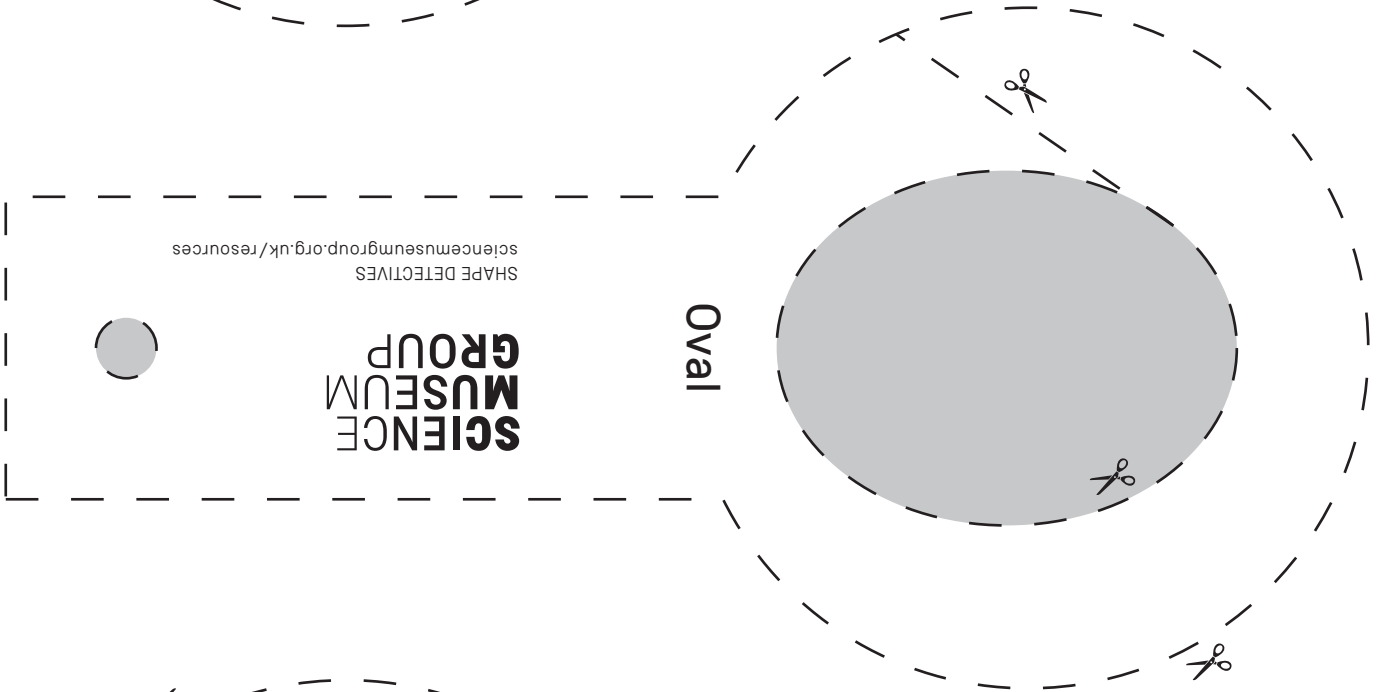


Rectangle

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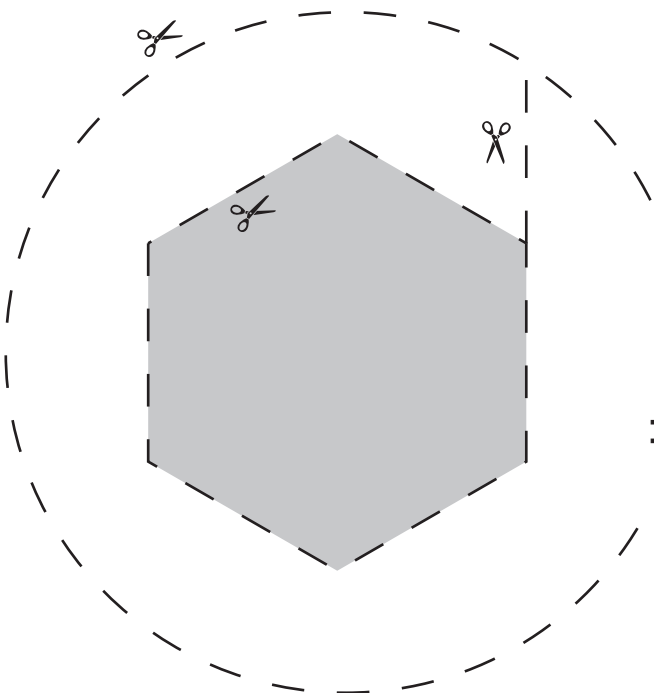


Oval

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Hexagon

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