

# GET IN SHAPE FOR SUMMER



# THIS WEEKS THEME: SHAPE

Shape can sometimes seem like a really easy topic.

However sometimes what we know about shapes isn't quite right or not the whole story.

This week we are going to be making sure that we know everything there is to know about shape - at the right level for us of course.

As usual work out which level you need to work on by answering the questions for everyone. Notice with shape you may need to work on some earlier skills but be better at later ones. For example I had to brush up on **exactly** what a polygon was and wasn't to make sure my answers were correct so you might have forgotten too.

You might find that shape is the area of maths you are really good at and fly through to the end.

**By the way:  
What do you call a parrot that has flown away?  
A Polly-gon!**

**Polly**



**Polygon**

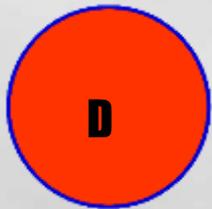
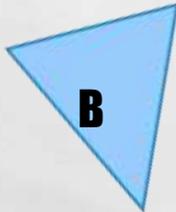
# SKILL 1 RECOGNISING 2D AND 3D SHAPES



# SKILL 1 QUESTIONS FOR EVERYONE

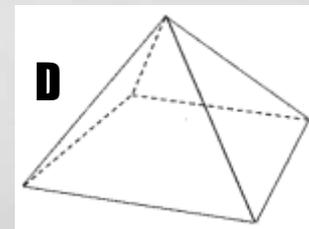
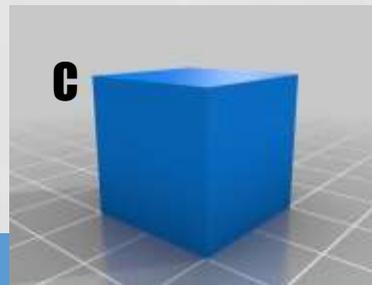
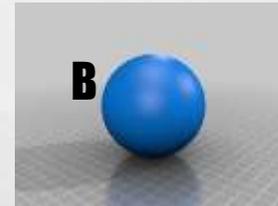
See if you can answer these questions for everyone. The answers are on the next slide:

1. Can you name these shapes?



2. Which of these shapes are 3D shapes – circle, sphere, cuboid rectangle and cone?

3. Can you name these shapes?



# SKILL 1 ANSWERS FOR EVERYONE

1. A = square B = triangle C = rectangle D = circle
2. Sphere, Cuboid, Cone
3. A = Cuboid B = Sphere C = Cube D = Pyramid

If you got these questions wrong or know you are not good at naming shapes watch these videos.

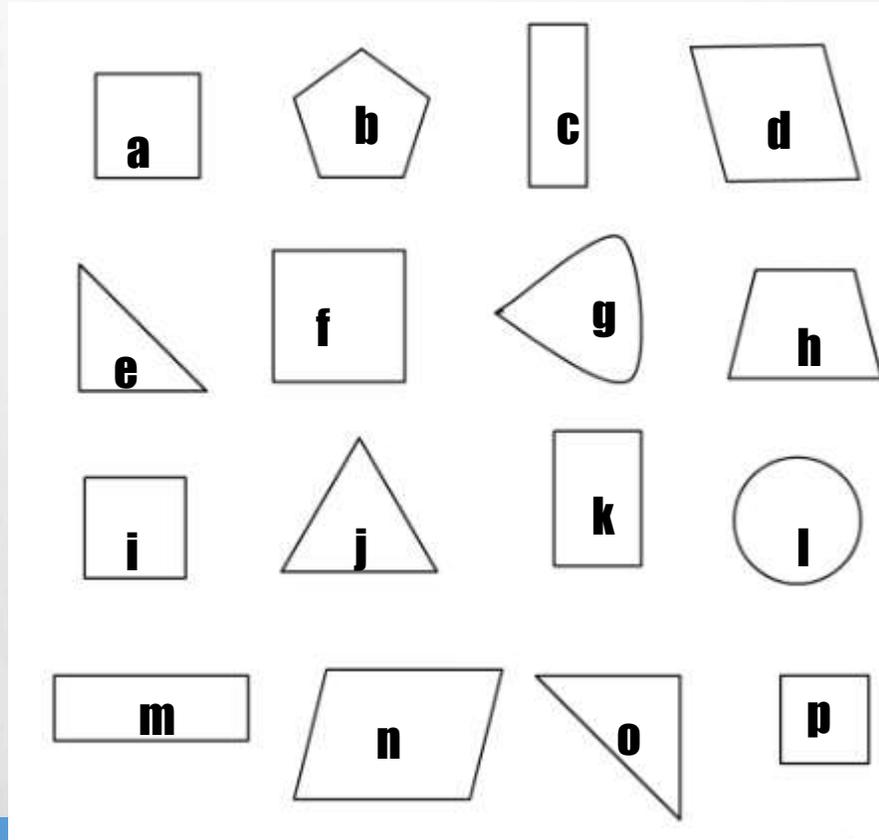
[HTTPS://WWW.YOUTUBE.COM/WATCH?V=OVITZLOOVLC](https://www.youtube.com/watch?v=OVITZLOOVLC)

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=2CG-UC556-Q](https://www.youtube.com/watch?v=2CG-UC556-Q)

# SKILL 1 ACTIVITIES

If you are now happy with the answers to all those questions go on to Skill 2. If you think this is the skill level you need to keep working on try these activities:

1. Draw a square in your book. Make sure all the sides are the same length and you use a ruler (or straight edge if you don't have a ruler).
2. Underneath your square write the letters of all the squares in this picture.
3. Draw a rectangle in your book. Make sure you use a ruler.
4. Underneath your rectangle write the letters of all the rectangles in this picture.

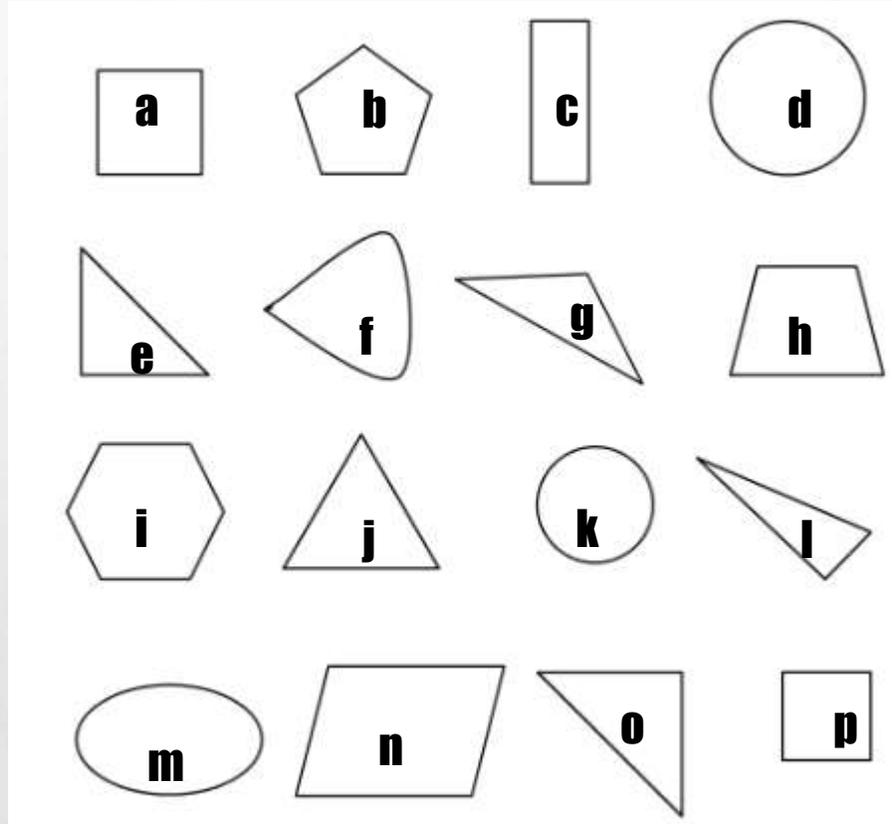


**Can you name any of the shapes that are not squares or rectangles?**

# SKILL 1 ACTIVITIES

Remember you don't have to do them all today – you have all week.

1. Draw a triangle in your book. Remember this is any shape with 3 straight sides. Use a ruler.
2. Underneath your triangle write the letters of all the triangles in this picture.
3. Draw a circle in your book by drawing round something circular.
4. Underneath your circle write the letters of all the circles in this picture.

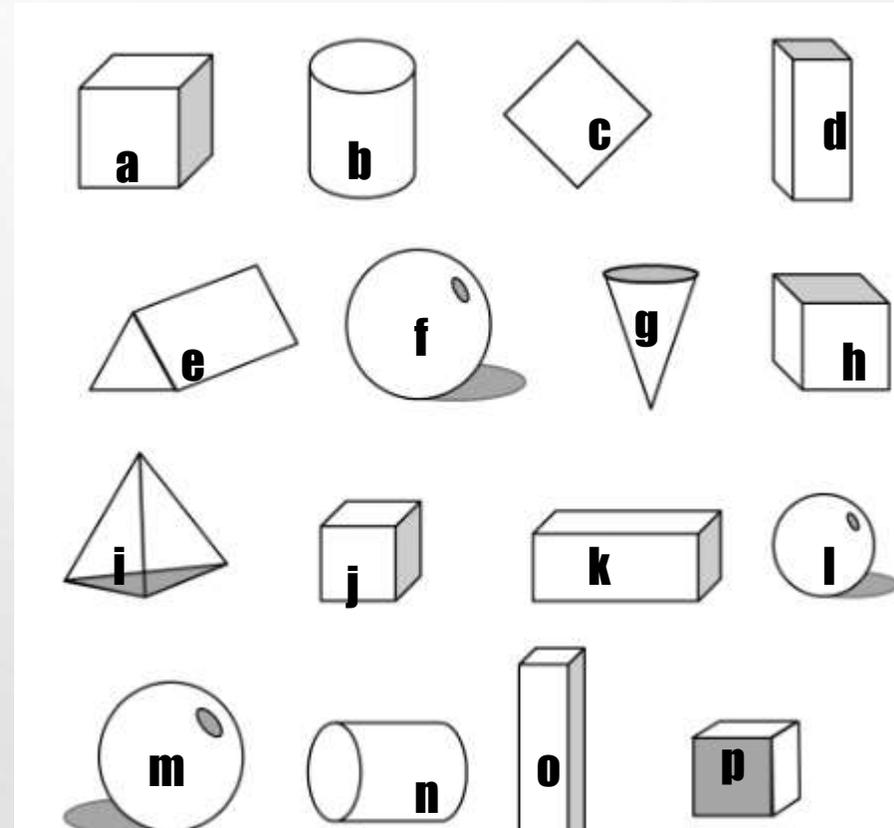


**Can you name any of the shapes that are not triangles or circles?**

# SKILL 1 ACTIVITIES

1. Write the word Sphere in your book. Under the word write down the letters of all the spheres in the picture.
2. Write the word Cube in your book. Under the word write down the letters of all the cubes in the picture.
3. Write the word Cuboid in your book. Under the word write down all the letters of the cuboids in this picture.

**Can you name any of the other 3D shapes in this picture?**

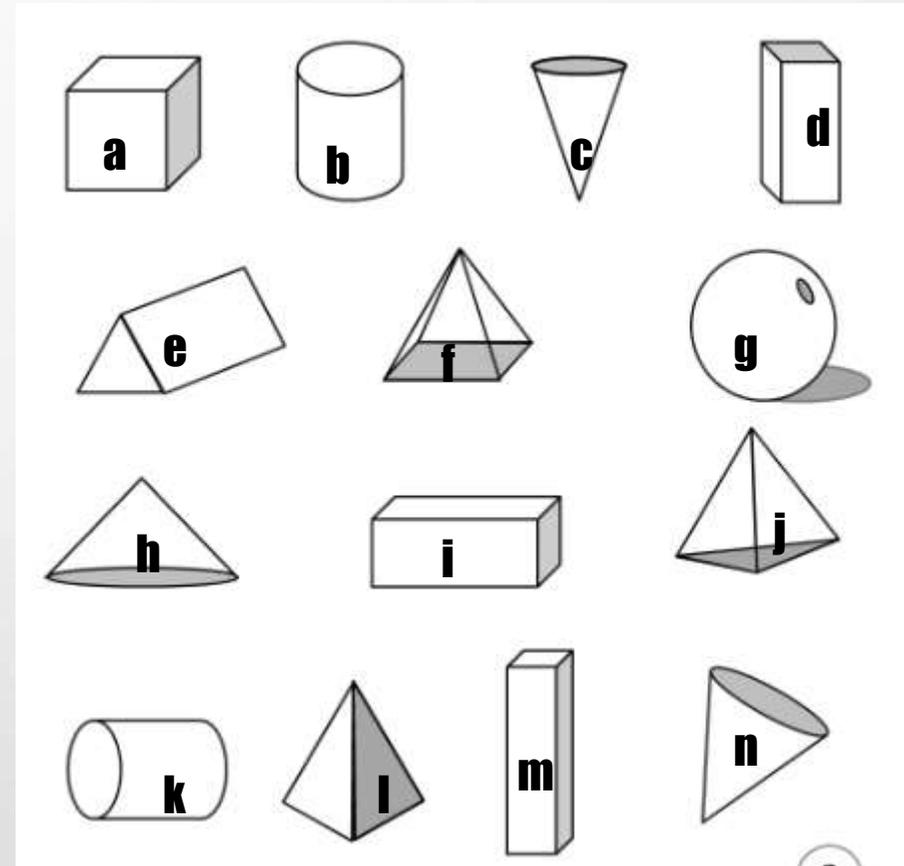


# SKILL 1 ACTIVITIES

Remember you don't have to do them all today – you have all week.

1. Write the word Cone in your book. Under the word write down the letters of all the cones in the picture.
2. Write the word Cylinder in your book. Under the word write down the letters of all the cylinders in the picture.
3. Write the word Pyramid in your book. Under the word write down all the letters of the pyramids in this picture.

**Can you name any of the other 3D shapes in this picture?**



# SKILL 1 ACTIVITIES

## Shape Treasure Hunt

Look around your house and see if you can identify any 2D shapes you find. You could also do this while you are out for a walk – look at the road signs or marks on the ground as well as houses and shops. You could make a list of all the shapes we have looked at and the first person to find all of them is the winner.

Find some 3D shapes in your house. For example you could look in your kitchen cupboards for boxes and cans or in your toys. What shapes are they? Hold them, turn them over and look at them from all sides. Can you find several examples of the same shape? What do they have in common? What is different? Can you group your shapes so a group has something in common? Is there a different way to group them?

# SKILL 1 ANSWERS

Squares

a, f, i, p

Rectangles

c, k, m and also a, f, i, p because squares are also rectangles!

Other shapes

b = pentagon

d, n = parallelogram

e, j, o = triangle

h = trapezium

l = circle

Some of those are tricky so well done if you got them all.

Triangles

e, g, j, l, o

Circles

d and k

Other shapes

a, p = square

b = pentagon

c = rectangle

h = trapezium

i = hexagon

m = ellipse (or oval)

n parallelogram

Some of those are tricky so well done if you got them all.

# SKILL 1 ANSWERS

Spheres

f, l, m

Cubes

a, h, j, p

Cuboids

d, k, o but also a, h, j, p as cubes are also cuboids

Other shapes

b, n = cylinder

c = square (not a 3D shape at all!)

e = triangular prism

g = cone

i = triangular based pyramid

l = circle

Some of those are tricky so well done if you got them all.

Cones

c, h, n

Cylinders

b and k

Pyramids

f, j, l

Other shapes

a = cube

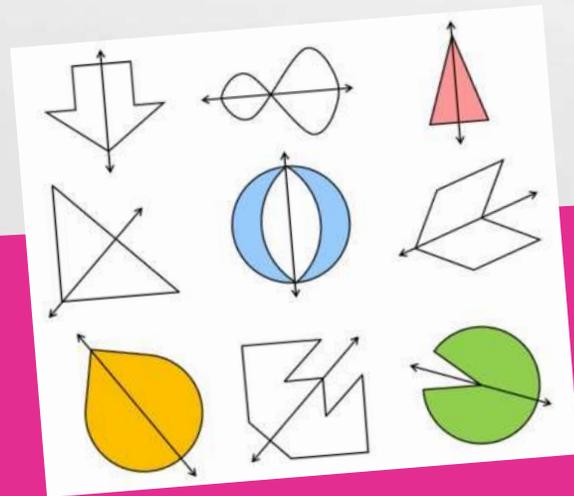
d, i, m = cuboid

e = triangular prism

g = sphere

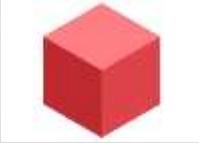
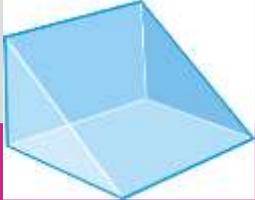
Some of those are tricky so well done if you got them all.

# SKILL 2 IDENTIFYING PROPERTIES OF SHAPES

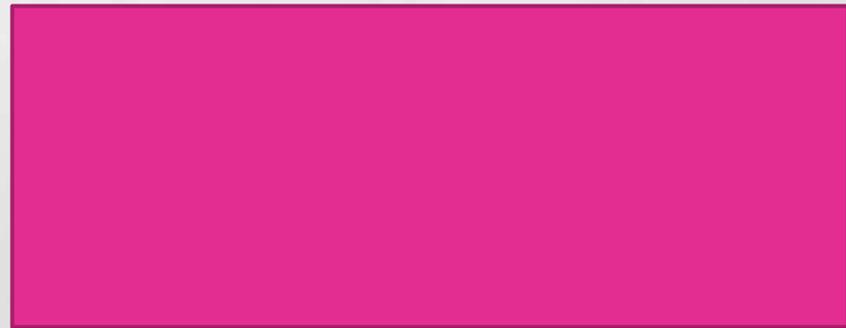


# SKILL 2 QUESTIONS FOR EVERYONE

See if you can answer these questions for everyone. The answers are on the next slide:

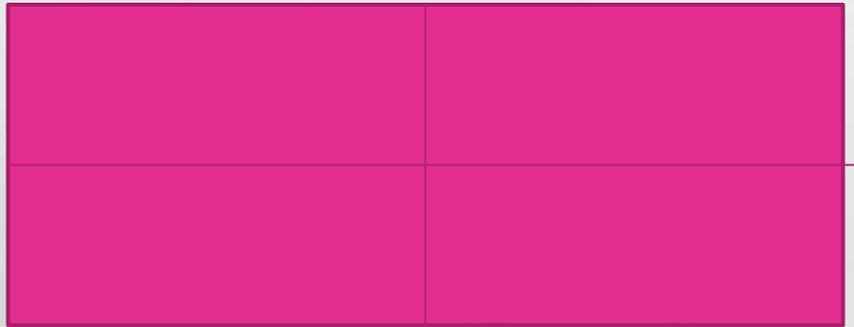
1. How many sides does a square have?
2. How many faces does this 3D shape have?  

3. How many edges does this shape have?  


4. How many vertices does a sphere have? Explain your answer.
5. How many lines of symmetry does this rectangle have?



# SKILL 2 ANSWERS FOR EVERYONE

1. 4
2. 6
3. 9
4. None. A vertex is where edges meet but a sphere has no edges or corners.
5. It has two lines of symmetry which are marked on below:



If you are happy with all these questions move on to Skill 3. Otherwise do the activities on the pink Skill 2 slides.

# SKILL 2 ACTIVITIES

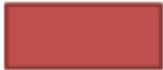
Remember you don't have to do them all today – you have all week.

Copy down these definitions:

The **sides** of a shape are the straight lines round the edge.

A **vertex** is where two or more sides meet. If there are more than one vertex you call them **vertices**.

Copy and fill in the table. What do you notice?

Shape	Name	Number of Sides	Number of Vertices
	Triangle		
	Square		
	Rectangle		
	<b>Trapezium</b>		
	Parallelogram		
	Pentagon		
	Hexagon		

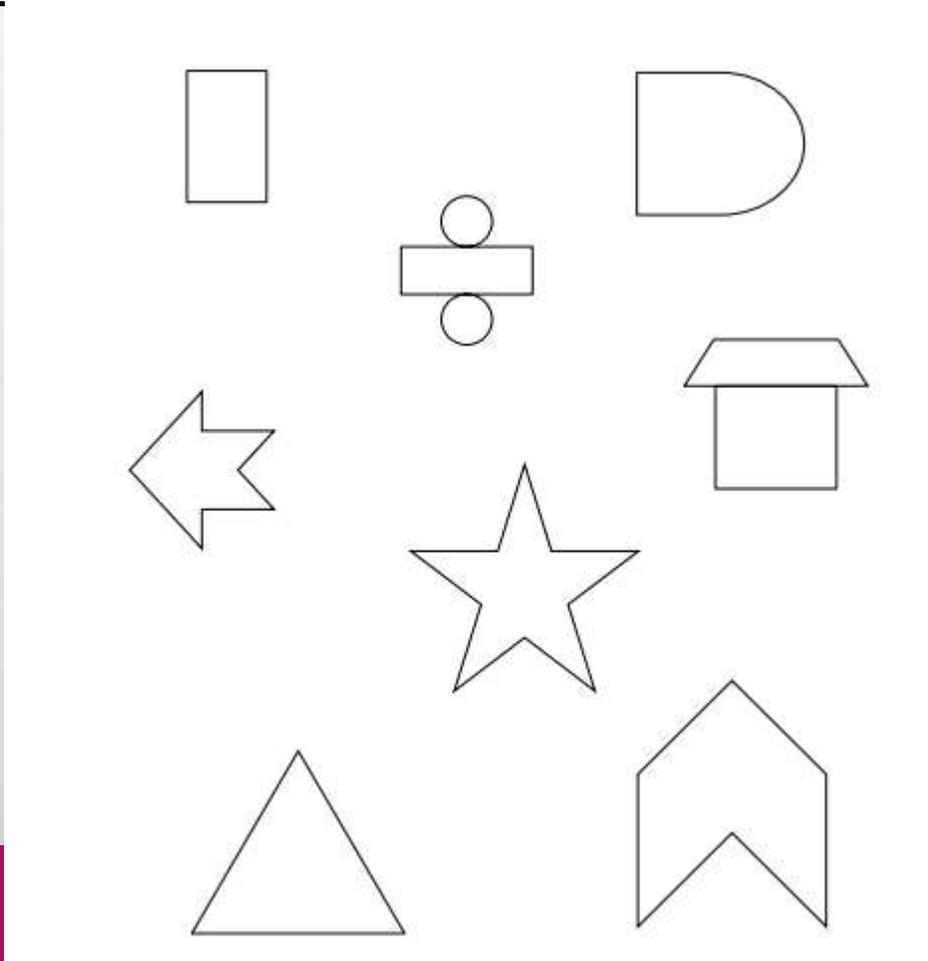
# SKILL 2 ACTIVITIES

Watch this clip:

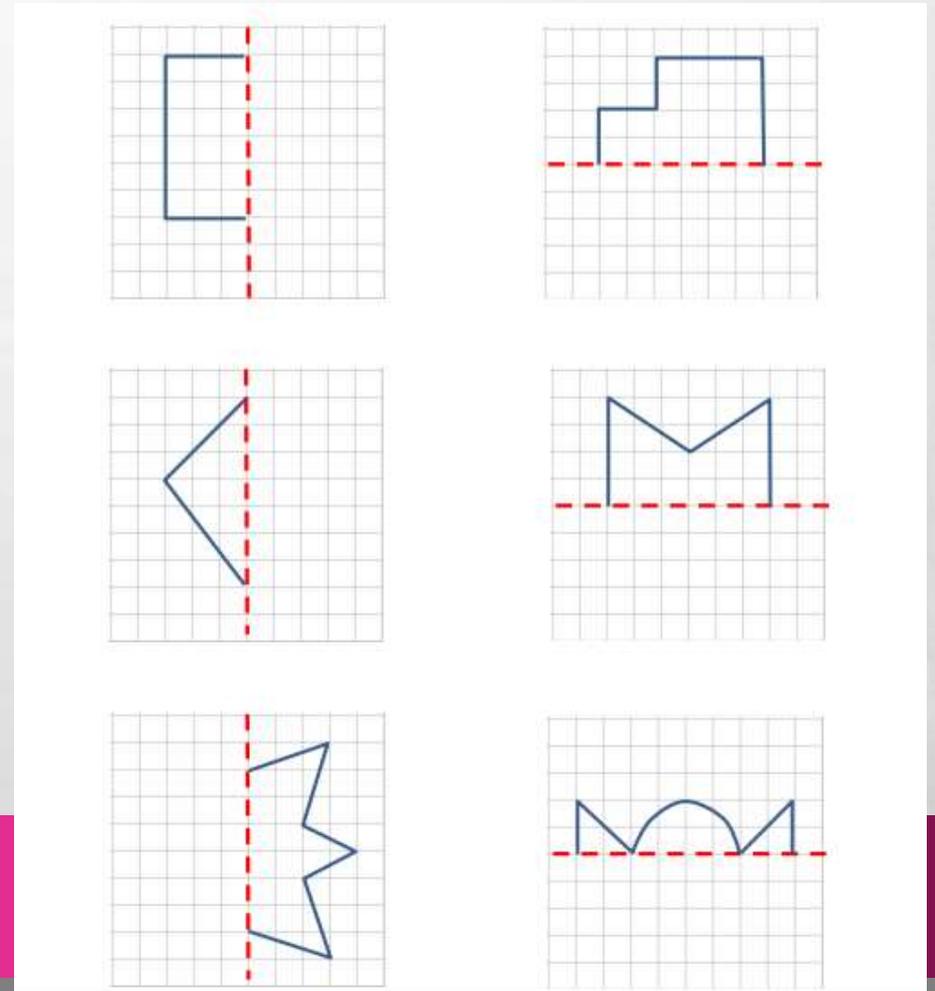
<https://www.bbc.co.uk/programmes/p017102f>

Remember you don't have to do them all today – you have all week.

Copy each shape and draw all the lines of symmetry on them.



Copy each shape and draw the other half to make a symmetrical shape.



# SKILL 2 ACTIVITIES

Remember you don't have to do them all today – you have all week.

Watch this clip:

<https://www.youtube.com/watch?v=3nLpD6bE4fE>

Copy and fill in the table. Do you notice any patterns?

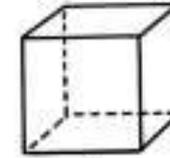
Shape	Name	Number of Faces	Number of Edges	Number of Vertices
	Triangular Pyramid			
	Square Pyramid			
	Cube			
	Cuboid			
	Triangular Prism			
	Pentagonal Prism			
	Hexagonal Prism			

# SKILL 2 ACTIVITIES

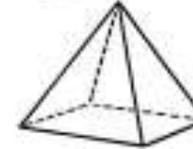
1. Look at the descriptions of the 3D shapes and choose which picture is being described. See if you can remember its name.
2. Describe the shape of the faces on each 3D shape on this page – for example you might say it has 6 square faces.

Remember you don't have to do them all today – you have all week.

1) This shape has no vertices and no faces; it does have curves.



2) This shape has no vertices and 2 faces; it also has curves.



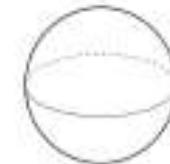
3) This shape has 5 vertices and 5 faces.



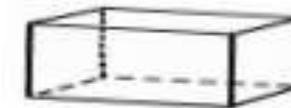
4) This shape has one vertex and one face.



5) This shape has 8 vertices and 6 faces; all of the faces are the same size.



6) This shape has 8 vertices and 6 faces; the faces are not all the same size.



# SKILL 2 ACTIVITIES

Watch this clip:

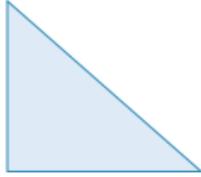
<https://www.youtube.com/watch?v=NVuMULQjb3o>

Copy the shapes and label any right angles.

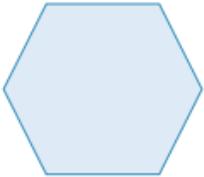
a)



b)



c)



d)



e)



f)

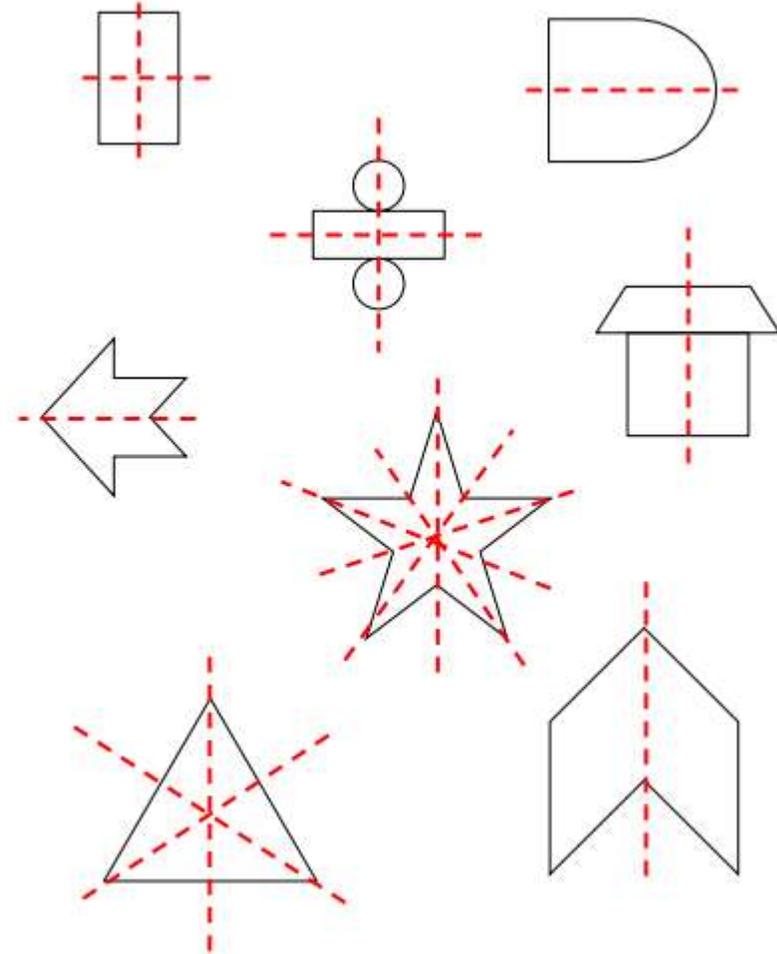


Next step: Write down whether each angle is a right angle, an obtuse angle or an acute angle.

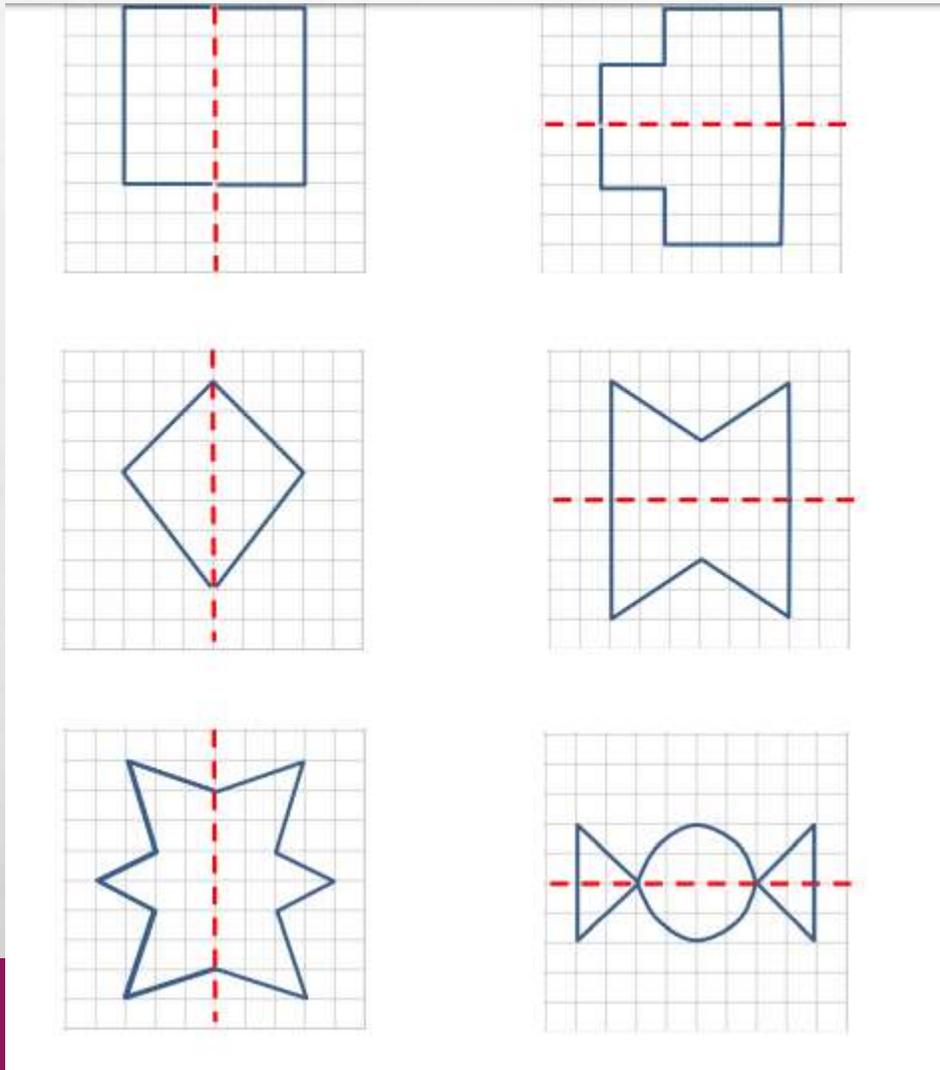
Right / Obtuse / Acute			
Right / Obtuse / Acute			
Right / Obtuse / Acute			
Right / Obtuse / Acute			

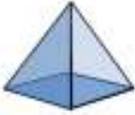
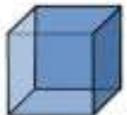
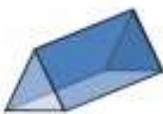
# SKILL 2 ANSWERS

Shape	Name	Number of Sides	Number of Vertices
	Triangle	3	3
	Square	4	4
	Rectangle	4	4
	<b>Trapezium</b>	4	4
	Parallelogram	4	4
	Pentagon	5	5
	Hexagon	6	6



# SKILL 2 ANSWERS



Shape	Name	Number of Faces	Number of Edges	Number of Vertices
	Triangular Pyramid	4	6	4
	Square Pyramid	5	8	5
	Cube	6	12	8
	Cuboid	6	12	8
	Triangular Prism	5	9	6
	Pentagonal Prism	7	15	10
	Hexagonal Prism	8	18	12

# SKILL 2 ANSWERS

1) This shape has no vertices and no faces; it does have curves.

**Sphere**

2) This shape has no vertices and 2 faces; it also has curves.

**Cylinder**

3) This shape has 5 vertices and 5 faces.

**Pyramid**

4) This shape has one vertex and one face.

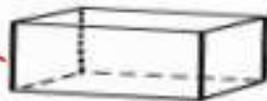
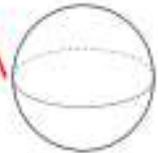
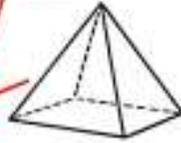
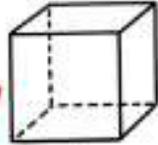
**Cone**

5) This shape has 8 vertices and 6 faces; all of the faces are the same size.

**Cube**

6) This shape has 8 vertices and 6 faces; the faces are not all the same size.

**Cuboid**



**6 square faces**

**Four triangular and one rectangular face**

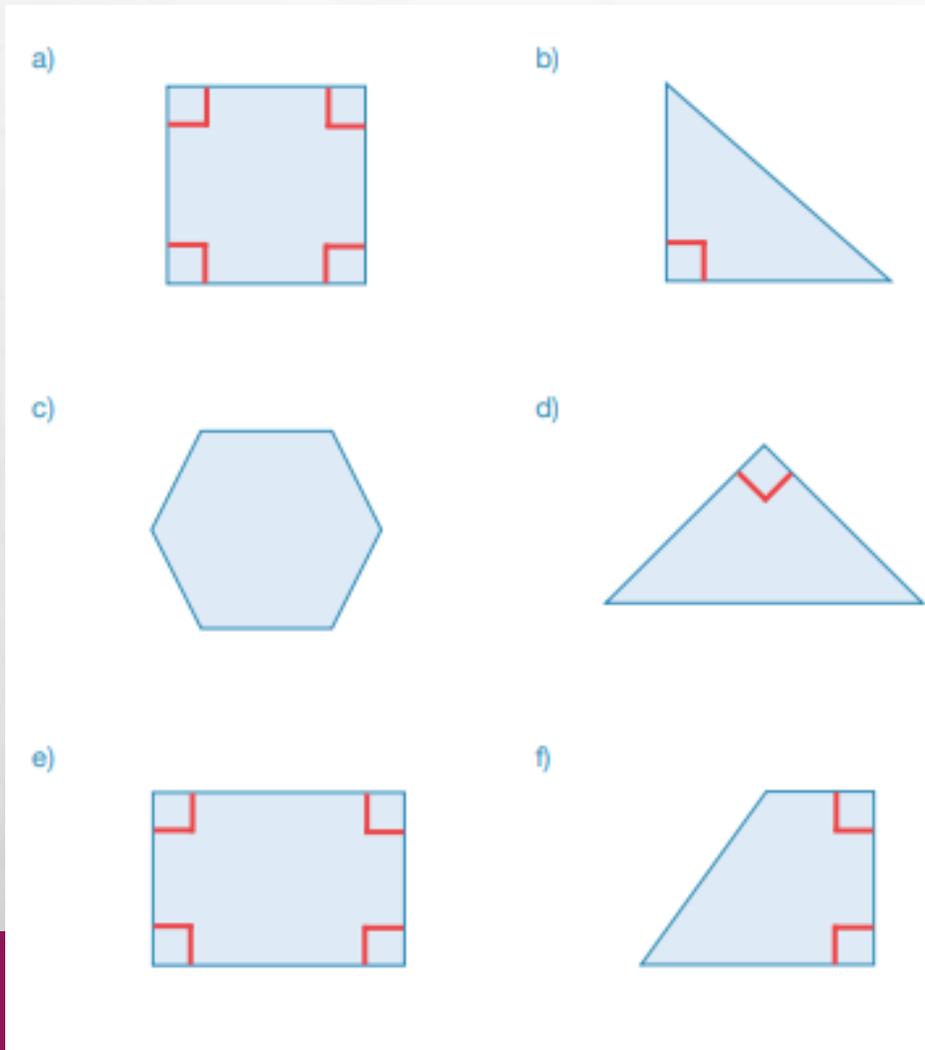
**Two circular faces**

**One circular face**

**No faces**

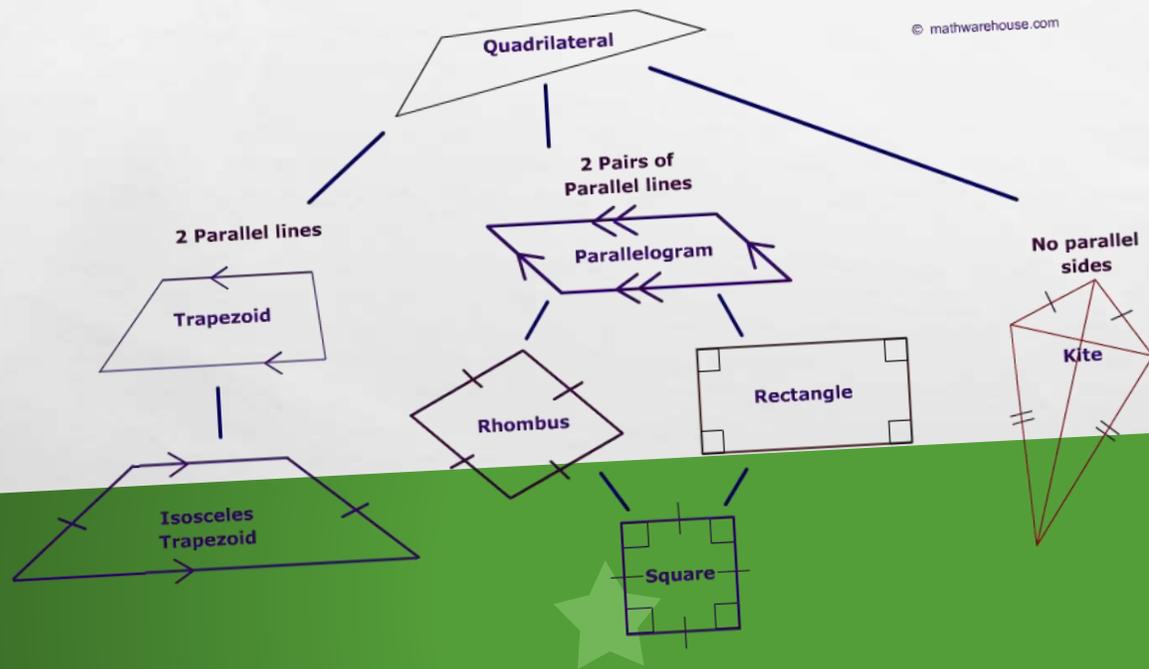
**Six rectangular faces**

# SKILL 2 ANSWERS



Obtuse	Acute	Right	Acute
Right	Obtuse	Acute	Acute
Obtuse	Obtuse	Acute	Right
Acute	Right	Right	Obtuse

# SKILL 3 CLASSIFYING SHAPES



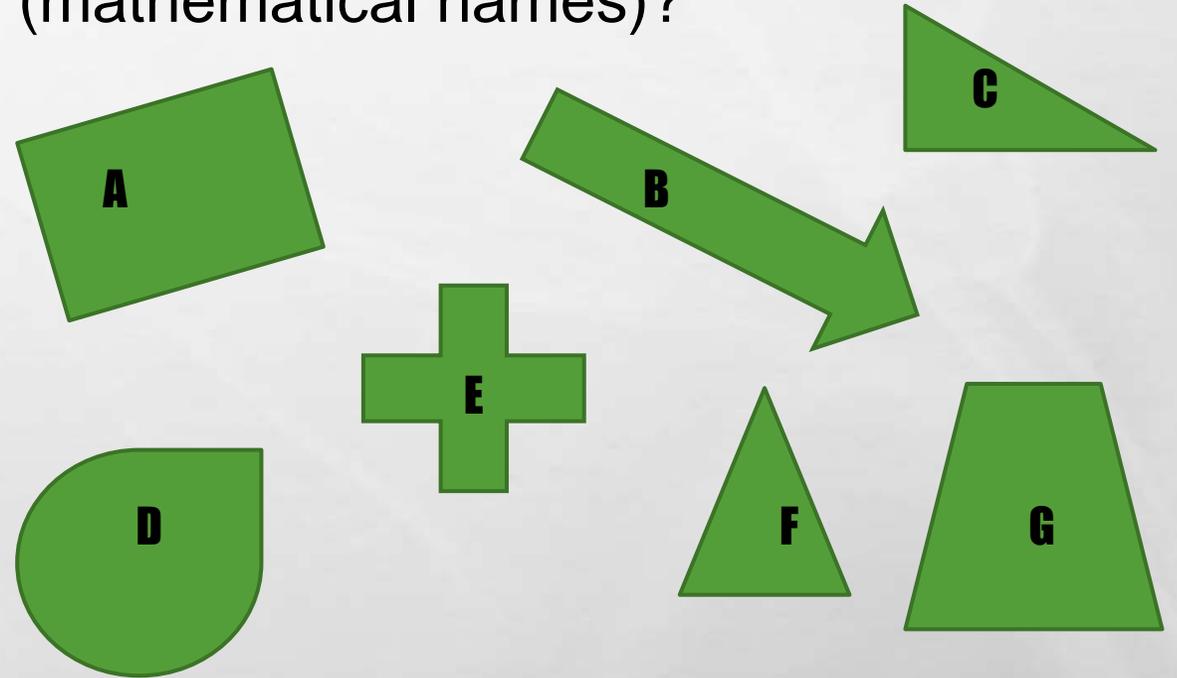
# SKILL 3 QUESTIONS FOR EVERYONE

See if you can answer these questions for everyone. The answers are on the next slide:

1. Which of these shapes are polygons?
2. Which of the shapes are quadrilaterals?
3. Which of the shapes are isosceles triangles?

4. Which of these shapes are regular?

5. Can you name all the shapes (mathematical names)?



# SKILL 3 ANSWERS FOR EVERYONE

1. All except D.
2. A and G.
3. F
4. None of them
5. A = Rectangle, B = Heptagon (7 sides), C = Right angled scalene triangle, D = non polygon, E = dodecagon (12 sides), F = Isosceles triangle, G = trapezium

If you don't know what a polygon, quadrilateral, regular or irregular shape is watch this clip:

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=IAOZHGX\\_I9S](https://www.youtube.com/watch?v=IAOZHGX_I9S)

If you don't know the different types of triangle watch this clip( Note we don't generally describe triangles as acute or obtuse in this country: [HTTPS://WWW.YOUTUBE.COM/WATCH?V=JQUTVGT9RXY](https://www.youtube.com/watch?v=JQUTVGT9RXY)

# SKILL 3 ACTIVITIES

If you are now happy with the answers to all those questions go on to Skill 4. If you think this is the stage you need to keep working on try these activities:

Watch these clips and answer the questions about polygons: <https://www.iconmath.com/lesson/270/> and <https://www.youtube.com/watch?v=UN57vvrMrY4>

Write polygon or non-polygon for each of the following figures:

Example 1:



Non-polygon

Example 2:



Polygon

1.



\_\_\_\_\_

2.



\_\_\_\_\_

3.



\_\_\_\_\_

4.



\_\_\_\_\_

5.



\_\_\_\_\_

6.



\_\_\_\_\_

7.



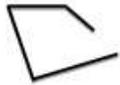
\_\_\_\_\_

8.



\_\_\_\_\_

9.



\_\_\_\_\_

10.



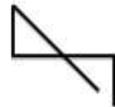
\_\_\_\_\_

11.



\_\_\_\_\_

12.



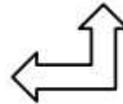
\_\_\_\_\_

13.



\_\_\_\_\_

14.



\_\_\_\_\_

Write regular or irregular for each of the following polygons:

Example 1:



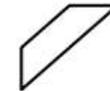
Irregular

Example 2:



Regular

1.



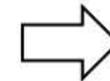
\_\_\_\_\_

2.



\_\_\_\_\_

3.



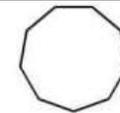
\_\_\_\_\_

4.



\_\_\_\_\_

5.



\_\_\_\_\_

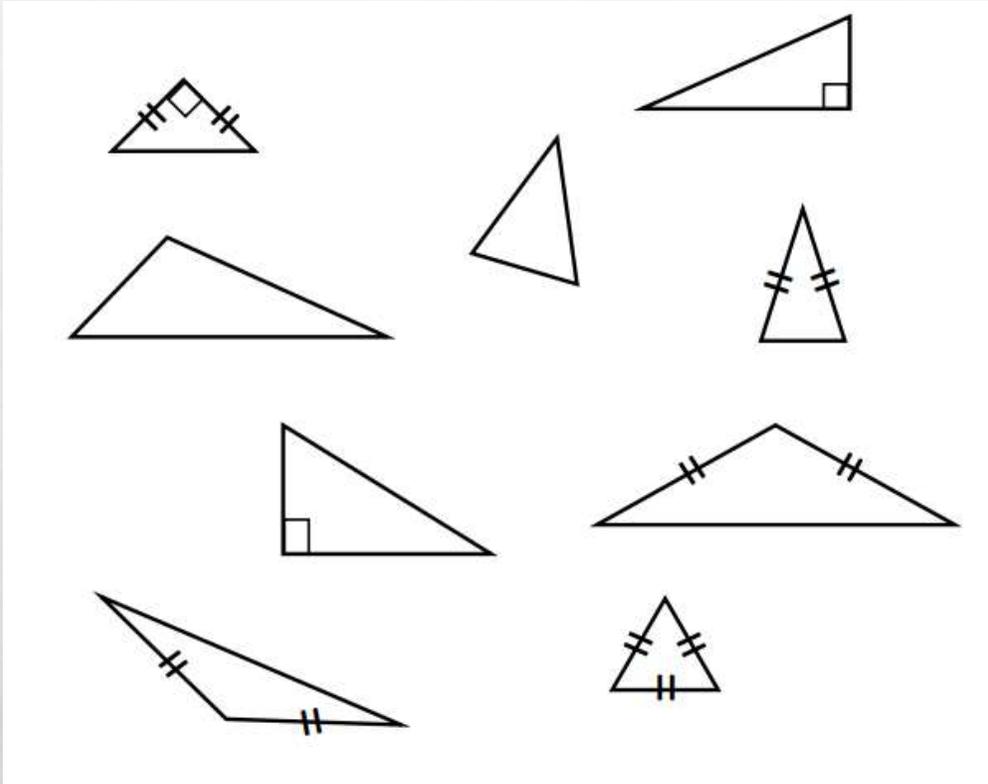
6.



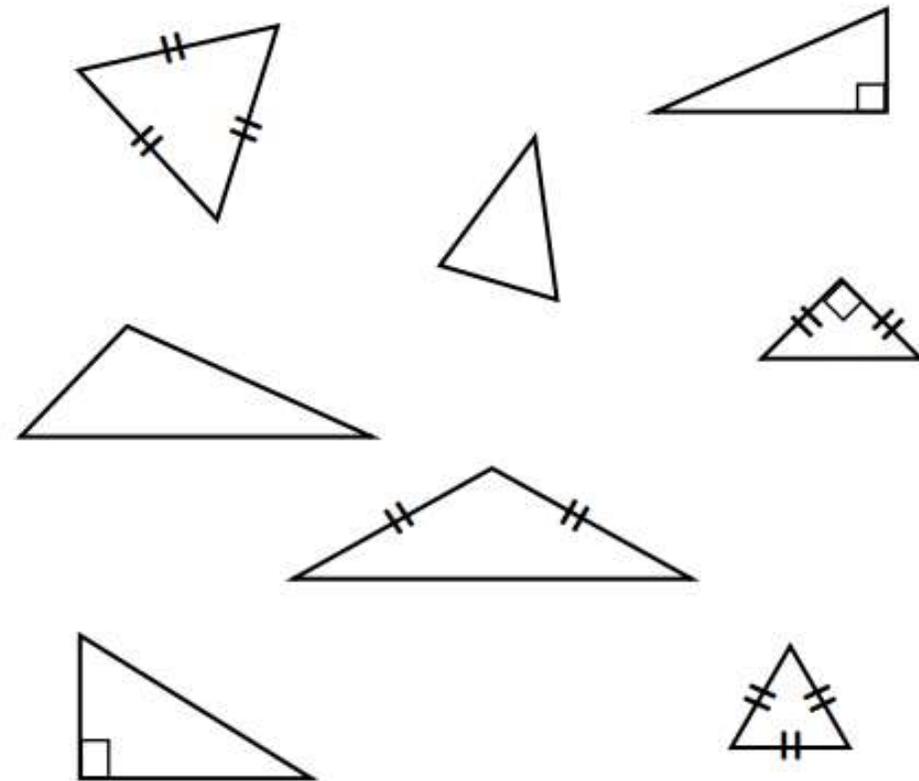
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# SKILL 3 ACTIVITIES

Which of these are right angled triangles?



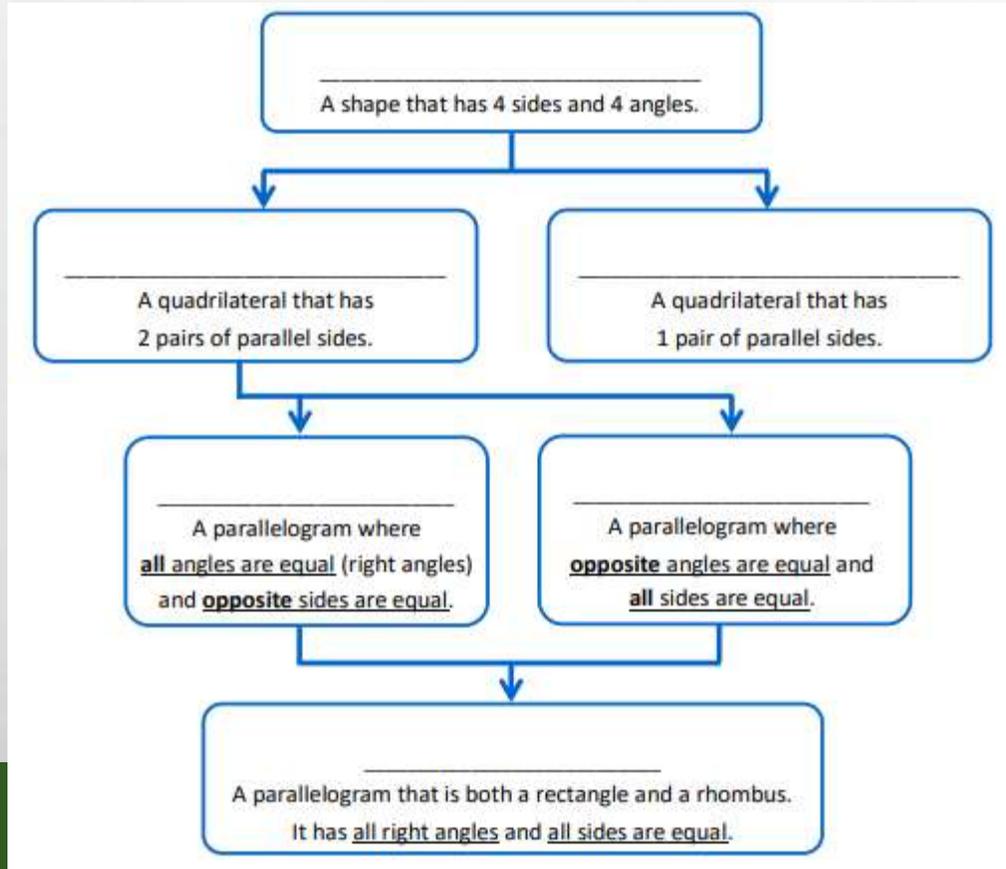
Write scalene, isosceles or equilateral beside each triangle.



# SKILL 3 ACTIVITIES

Watch the first 6 minutes of this clip first:  
<https://www.youtube.com/watch?v=yiREqzDsMP8>

Copy and complete this classification grid using the following words:  
Rectangle trapezium square parallelogram rhombus quadrilateral



Match the shapes to the correct name. Could there be more than one right answer?

Shapes and names to match:

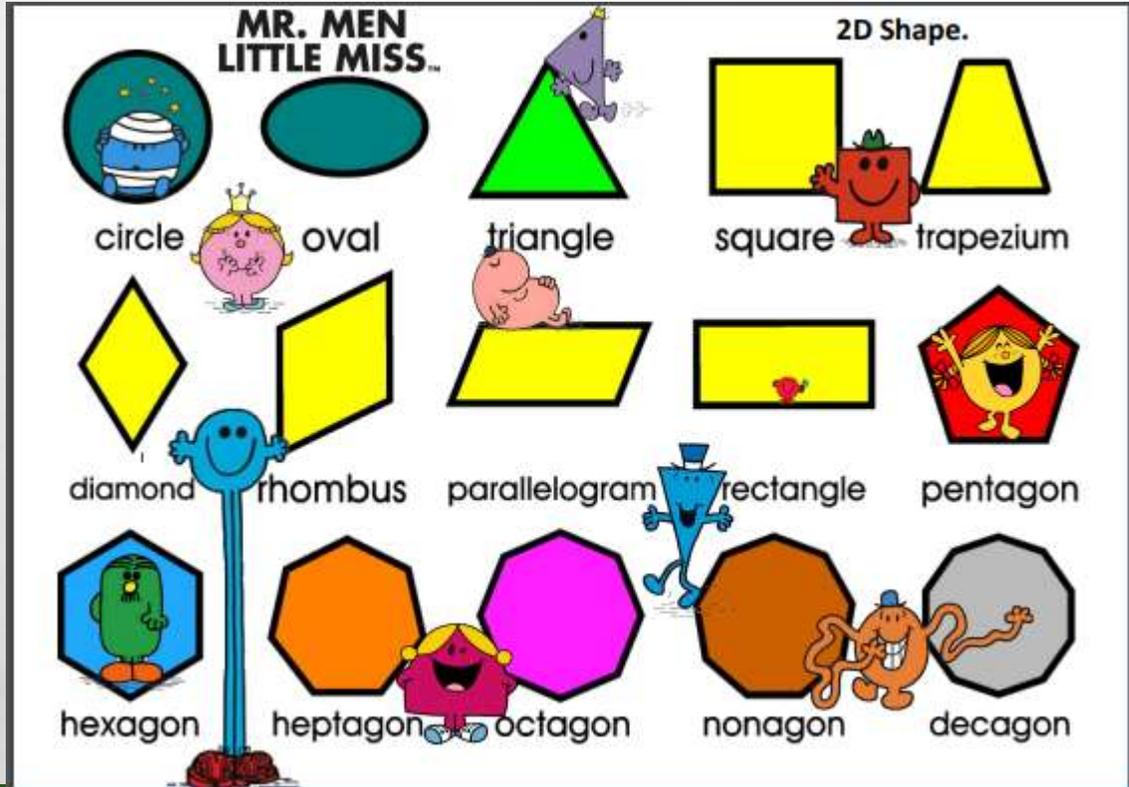
- Blue parallelogram
- Purple rectangle
- Red square
- Green rhombus
- Orange trapezium
- Blue square
- Cyan trapezium
- Orange rhombus
- Red rectangle
- Purple parallelogram

Names in blue boxes:

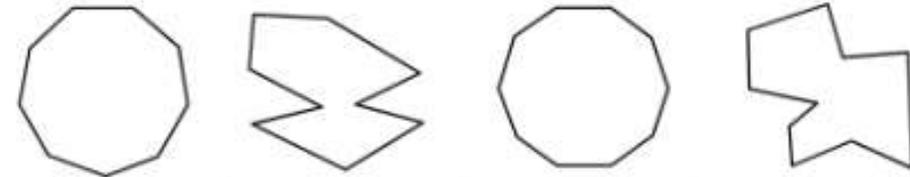
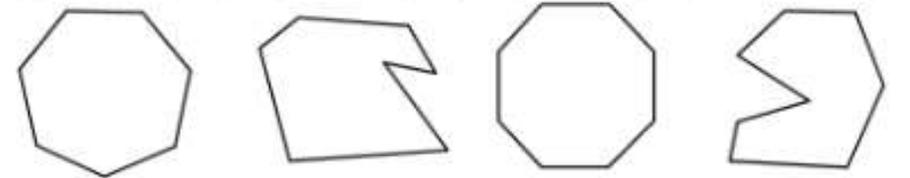
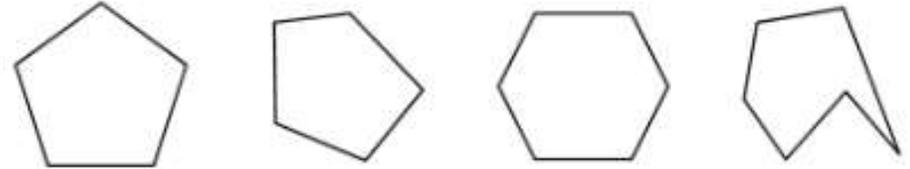
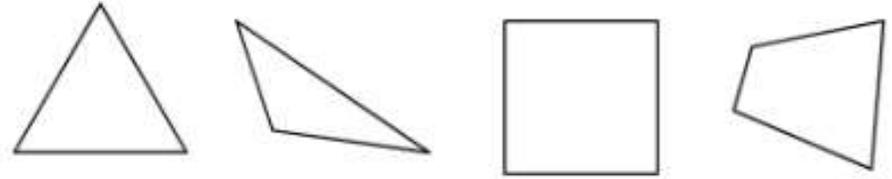
- Square
- Rectangle
- Rhombus
- Trapezium**
- Parallelogram
- Kite

# SKILL 3 ACTIVITIES

This shape mat gives the names of shapes with more than 4 sides. Use it to classify the shapes in the picture



As well as the name say if the shape is regular or irregular.



# SKILL 3 ACTIVITIES

Use your knowledge of shapes to say if it is possible to draw the shape described. If it is draw it, if not write impossible.

1) Can you draw a triangle with a line of symmetry?	2) Can you draw a quadrilateral with just 2 right angles?
3) Can you draw a triangle with exactly 2 right angles?	4) Can you draw a pentagon with just 1 mirror line?
5) Can you draw a quadrilateral with 1 pair of parallel lines?	6) Can you draw a triangle with two acute angles?

1) Can you draw a quadrilateral with no right angles?	2) Can you draw a triangle with more than 1 right angle?
3) Can you draw a quadrilateral with exactly 1 mirror line?	4) Can you draw a pentagon with 2 pairs of parallel lines?
5) Can you draw a triangle with 1 pair of parallel lines?	6) Can you draw a hexagon with exactly 2 lines of symmetry?

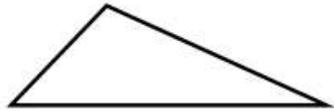
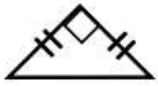
# SKILL 3 ANSWERS

1. Non-polygon
2. Polygon
3. Non-polygon
4. Non-polygon
5. Polygon
6. Non-polygon
7. Non-polygon
8. Polygon
9. Non-polygon
10. Polygon
11. Non-polygon
12. Non-polygon
13. Non-polygon
14. Polygon

1. Irregular
2. Irregular
3. Irregular
4. Regular
5. Regular
6. Irregular

# SKILL 3 ANSWERS

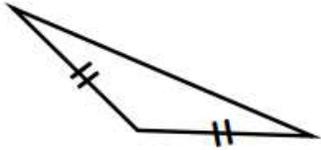
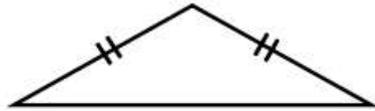
**Right angled triangle**



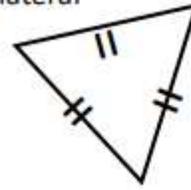
**Right angled triangle**



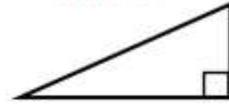
**Right angled triangle**



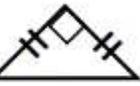
equilateral



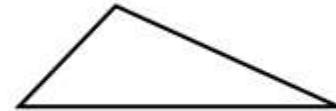
scalene



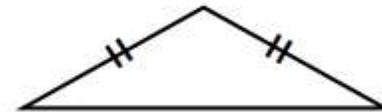
scalene



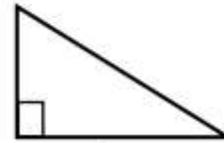
isosceles



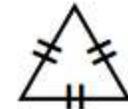
scalene



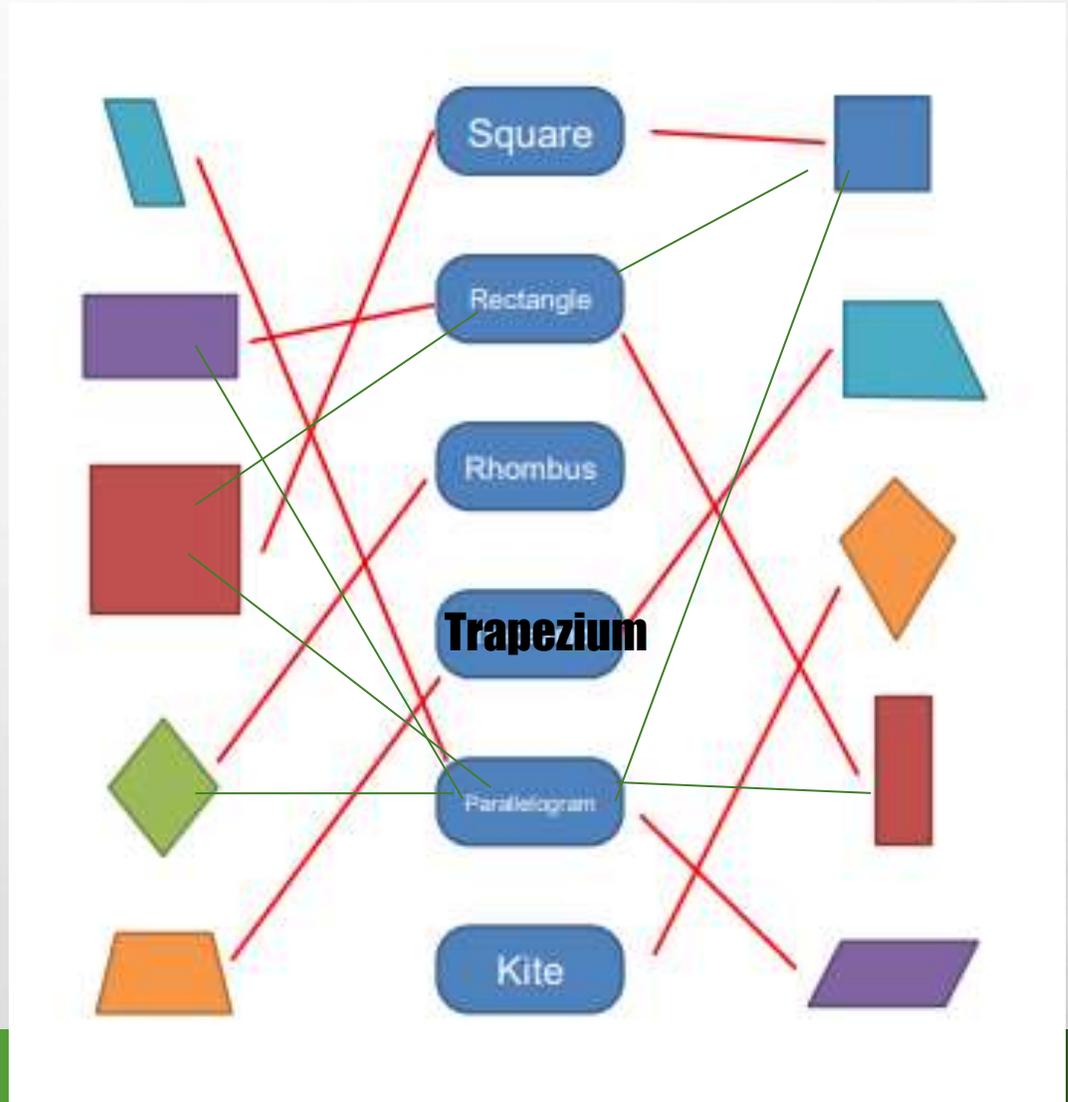
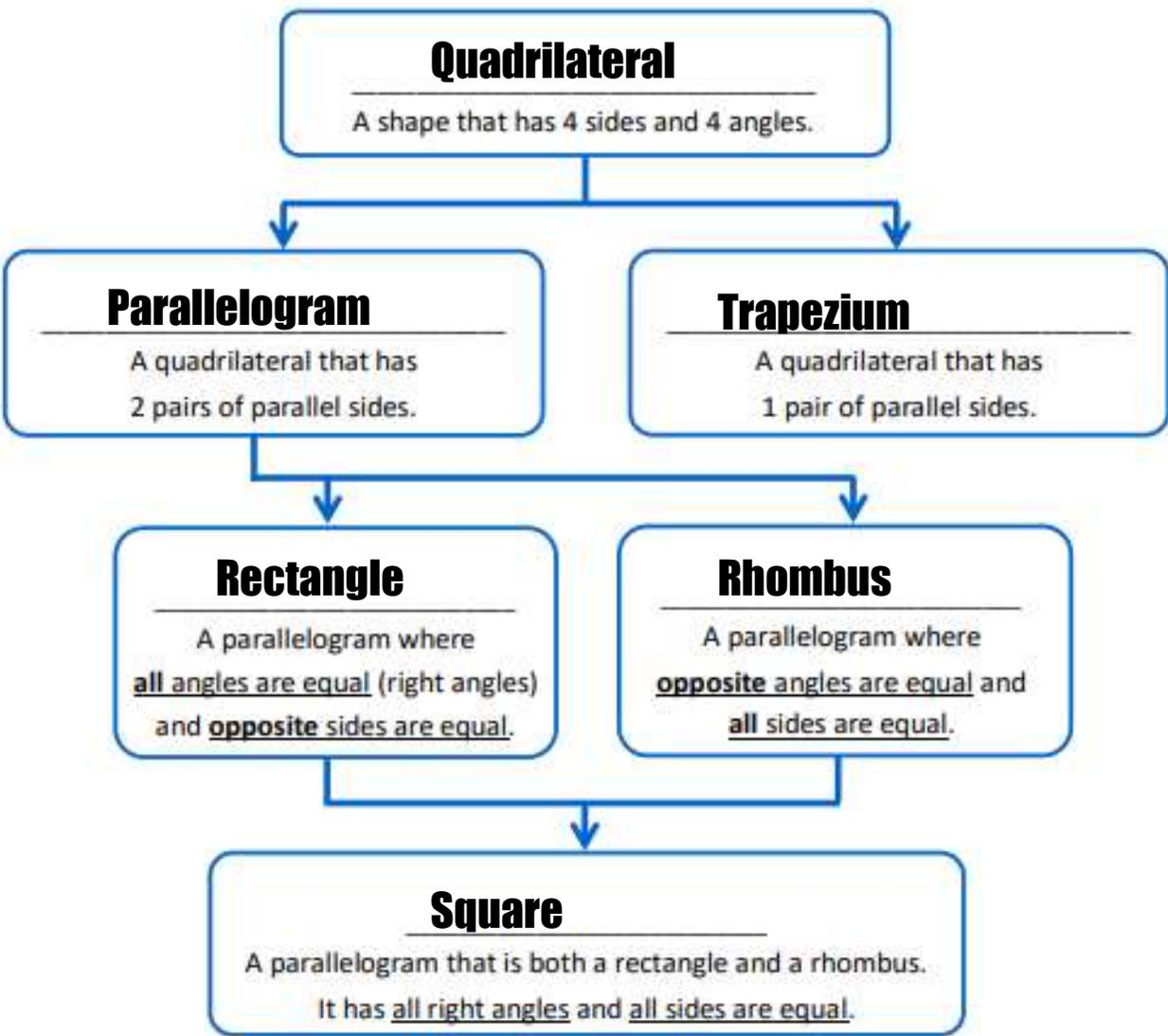
isosceles



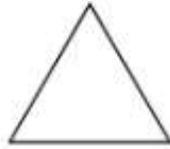
scalene



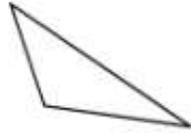
equilateral



# SKILL 3 ANSWERS



Equilateral Triangle  
(Regular Triangle)



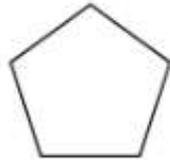
Irregular Triangle  
**(Scalene)**



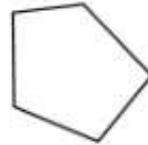
Square (Regular  
Quadrilateral)



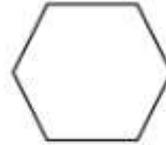
Irregular  
Quadrilateral



Regular Pentagon



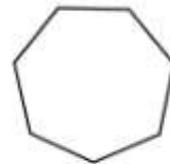
Irregular Pentagon



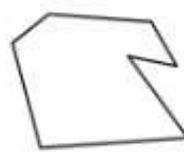
Regular Hexagon



Irregular Hexagon



Regular Heptagon



Irregular Heptagon



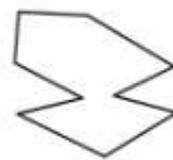
Regular Octagon



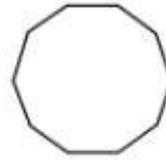
Irregular Octagon



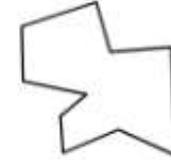
Regular Nonagon



Irregular Nonagon

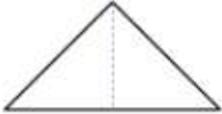
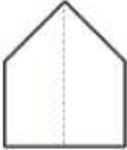
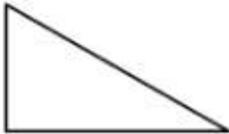


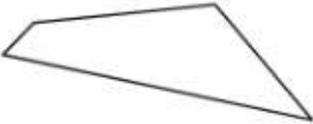
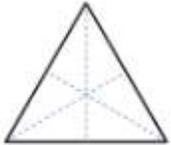
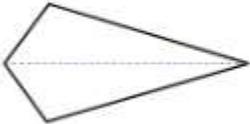
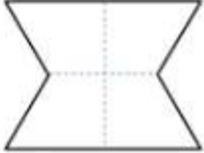
Regular Decagon



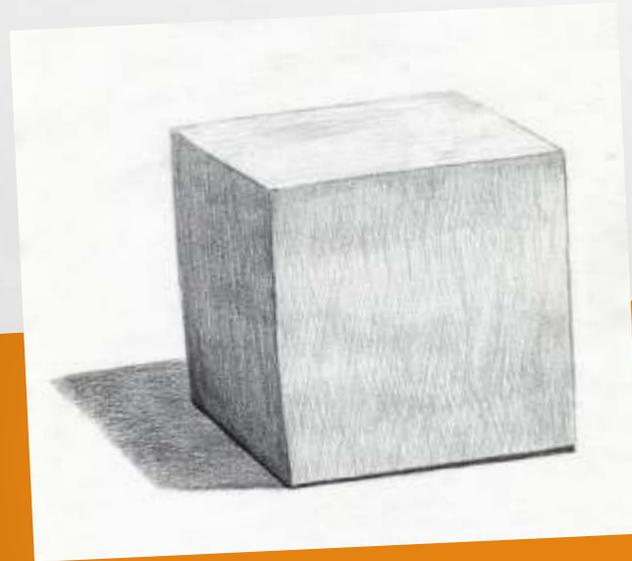
Irregular Decagon

# SKILL 3 ANSWERS

1) Can you draw a triangle with a line of symmetry?	2) Can you draw a quadrilateral with just 2 right angles?
	
3) Can you draw a triangle with exactly 2 right angles?	4) Can you draw a pentagon with just 1 mirror line?
impossible	
5) Can you draw a quadrilateral with 1 pair of parallel lines?	6) Can you draw a triangle with two acute angles?
	

1) Can you draw a quadrilateral with no right angles?	2) Can you draw a triangle with more than 1 mirror line?
	
3) Can you draw a quadrilateral with exactly 1 mirror line?	4) Can you draw a pentagon with 2 pairs of parallel lines?
	
5) Can you draw a triangle with 1 pair of parallel lines?	6) Can you draw a hexagon with exactly 2 lines of symmetry?
impossible	

# SKILL 4 DRAWING AND CONSTRUCTING SHAPES



# SKILL 4 QUESTIONS FOR EVERYONE

1. Can you draw 2D shapes?
2. Can you draw 3D shapes?
3. Can you draw and identify nets of shapes?

# SKILL 4 ANSWERS FOR EVERYONE

If you answered no to any of those questions (and those of you who have seen my drawing on the board know I probably did!) you need to do the activities at this level. I think we are in need of Mrs Mann but as she is in school we will have to resort to the internet for help!

# SKILL 4 ACTIVITIES

Note if you don't have a set square or ruler you can use the edge of a book or folder.

Watch this video and practise drawing squares: <https://www.youtube.com/watch?v=LMyRALEjScc>

Watch this video and practise drawing rectangles: <https://www.youtube.com/watch?v=3ayhL3880wQ>

Try drawing some other quadrilaterals. Perhaps you could look for a tutorial on the internet. Remember their properties to help you draw them. Can you draw some irregular quadrilaterals? Which are easier to draw? Why?

Watch this video and practise drawing circles: <https://www.youtube.com/watch?v=I5WLMPckpUA>

# SKILL 4 ACTIVITIES

If you don't have a compass you can use a pencil on a piece of string.

Watch this video and practise drawing equilateral triangles: <https://www.youtube.com/watch?v=pud6UpCxBRU>

Draw some other types of triangles. Are they all scalene or can you draw an isosceles triangle. Can you draw a right angled triangle.

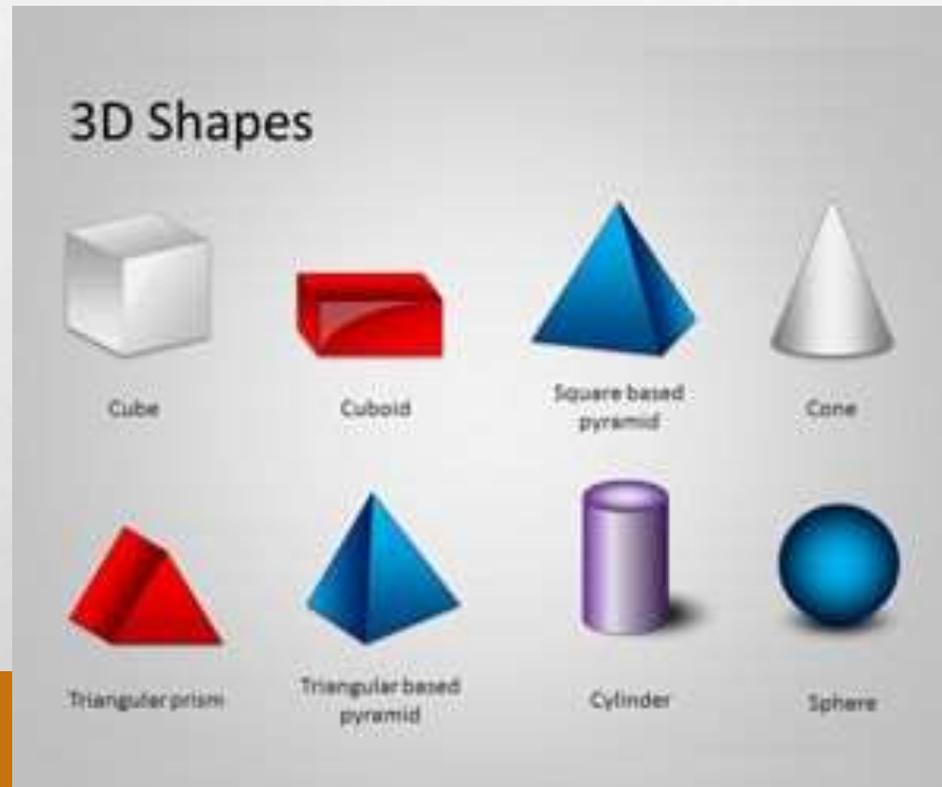
If you are a bit older you might like to try the next step in drawing triangles – drawing triangles with given lengths. The video is here: <https://www.youtube.com/watch?v=JmwRBptLbhc>

You might also want to have a look at the constructing triangles challenge here: <https://nrich.maths.org/8098>

# SKILL 4 ACTIVITIES

Watch this video and then have a go at drawing your own 3D shapes. Practise until you get really good! <https://www.youtube.com/watch?v=XJ1A5io8vc>

**What would we call what she calls a rectangular prism?**

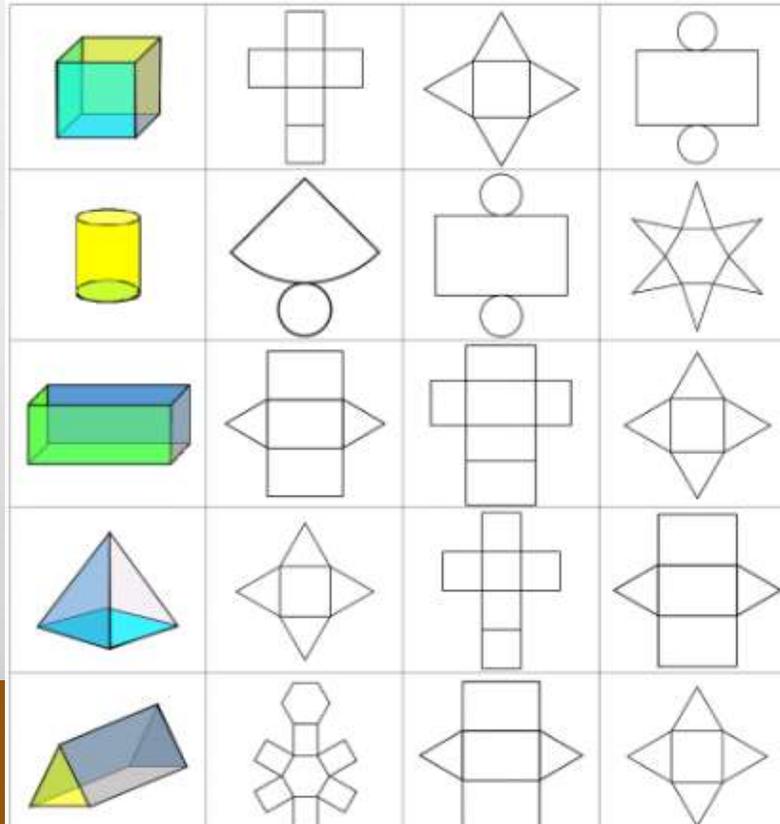


# SKILL 4 ACTIVITIES

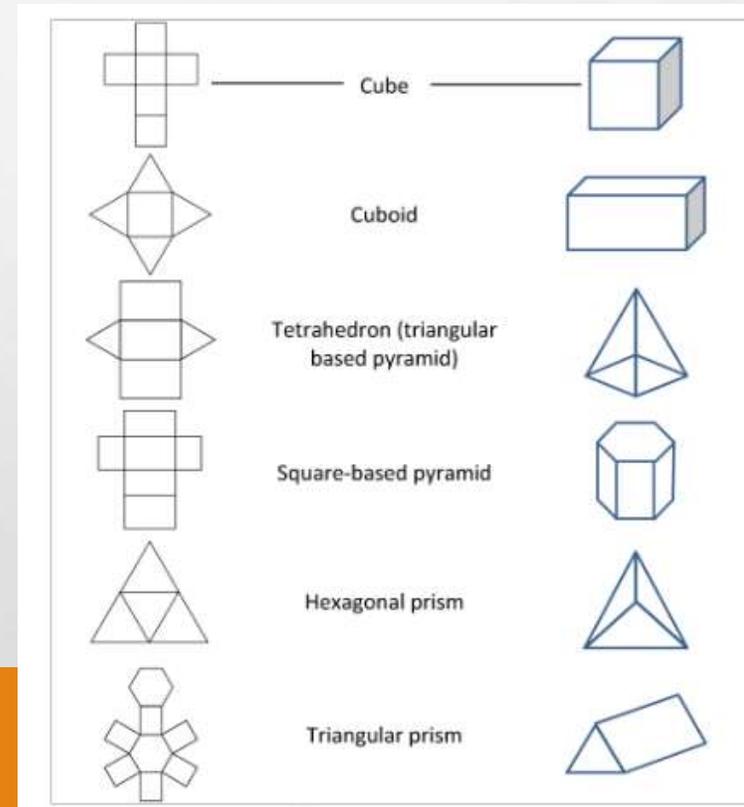
Have a look at this BBC Bitesize lesson on nets and answer these questions:

<https://www.bbc.co.uk/bitesize/topics/zt7kk2p/articles/z247tv4>

**Which net matches the 3D shape?**



**Match the net to the correct name and 3D shape.**



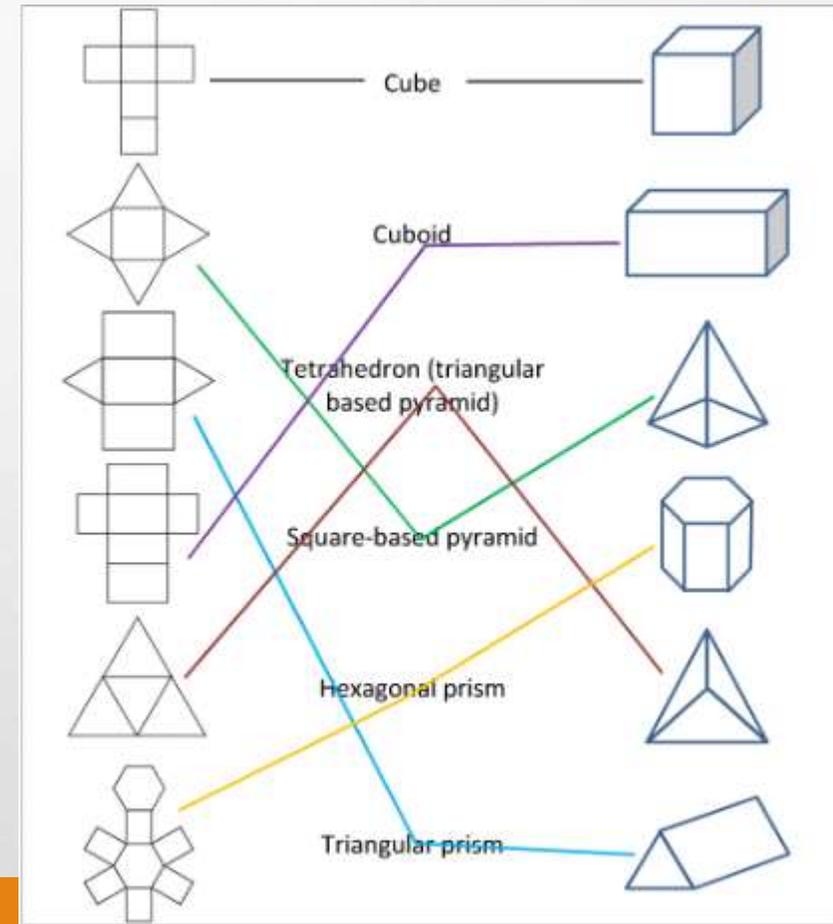
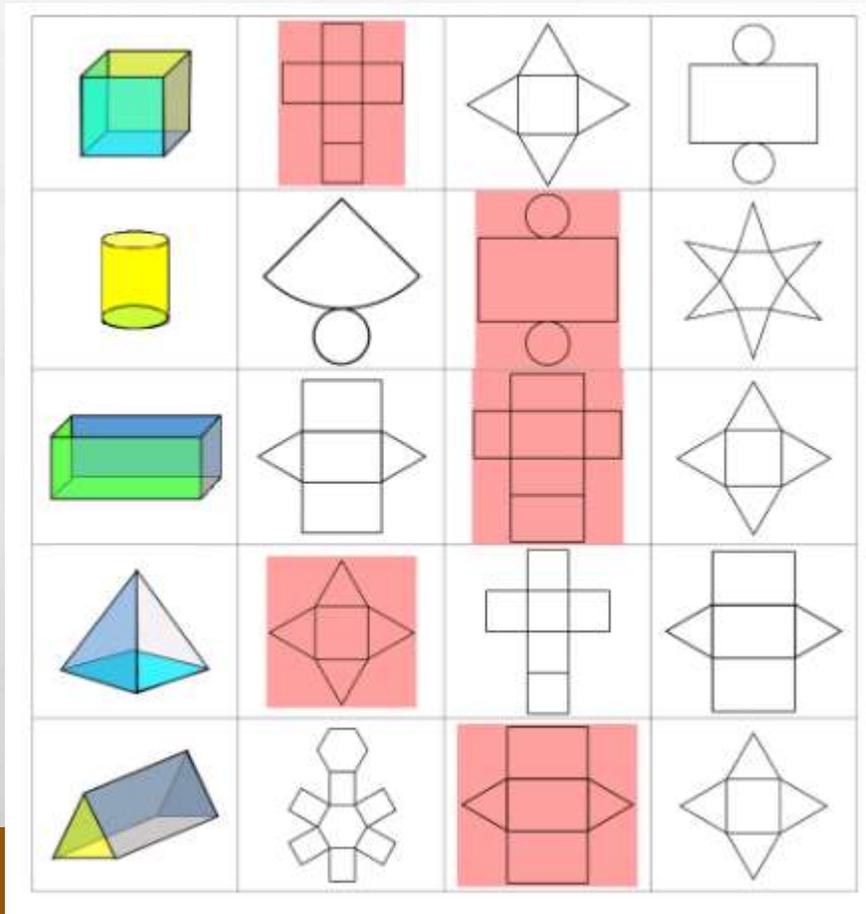
# SKILL 4 ACTIVITIES

Make some 3D shapes with whatever materials you have at home. You could use Lego, Playdough, Meccano, straws and bluetack, cocktail sticks and marshmallows or anything else you can think of.

You could also try printing off a net and folding it up to make a 3D shape.

I would love to see some pictures of what you create.

# SKILL 4 ANSWERS



# **SKILL 5 SOLVING PROBLEMS USING PROPERTIES OF SHAPES**



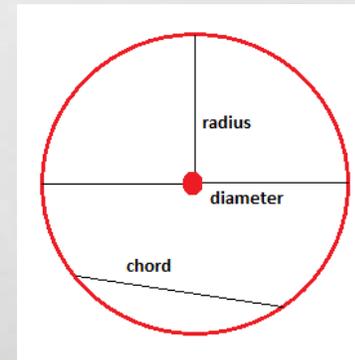
# SKILL 5 QUESTIONS FOR EVERYONE

If you have answered all the questions on the way  
this level is for you.

Get ready to put your shape knowledge to work!

**Facts you need to remember.**

- **There are 180 degrees in a triangle.**
- **There are 360 degrees in a quadrilateral.**



# SKILL 5 ACTIVITIES

For each of the statements below, tick whether they are always true, sometimes true or never true. Can you explain your reasoning by drawing or writing?

	STATEMENT	ALWAYS, SOMETIMES OR NEVER TRUE?	REASONING
1)	A rhombus is a regular shape.	ALWAYS SOMETIMES NEVER	
2)	A trapezium has a line of symmetry.	ALWAYS SOMETIMES NEVER	
3)	An isosceles triangle has no right angles.	ALWAYS SOMETIMES NEVER	
4)	A pentagon has 2 pairs of parallel lines.	ALWAYS SOMETIMES NEVER	
5)	A triangle has 3 lines of symmetry.	ALWAYS SOMETIMES NEVER	
6)	A rhombus is a parallelogram.	ALWAYS SOMETIMES NEVER	

	STATEMENT	ALWAYS, SOMETIMES OR NEVER TRUE?	REASONING
1)	A trapezium has exactly one right angle.	ALWAYS SOMETIMES NEVER	
2)	The radius of a circle is half the diameter.	ALWAYS SOMETIMES NEVER	
3)	The opposite angles of a parallelogram are equal.	ALWAYS SOMETIMES NEVER	
4)	A kite has a line of symmetry.	ALWAYS SOMETIMES NEVER	
5)	A triangle has exactly two mirror lines.	ALWAYS SOMETIMES NEVER	
6)	A parallelogram has exactly two lines of symmetry.	ALWAYS SOMETIMES NEVER	

# SKILL 5 ACTIVITIES

For each of the statements below, tick whether they are always true, sometimes true or never true. Can you explain your reasoning by drawing or writing?

	STATEMENT	ALWAYS, SOMETIMES OR NEVER TRUE?	REASONING
1)	The longest side of a scalene triangle is always larger than the other two sides added together.	ALWAYS SOMETIMES NEVER	
2)	The diameter of a circle is half the radius.	ALWAYS SOMETIMES NEVER	
3)	An irregular octagon has 4 pairs of parallel sides.	ALWAYS SOMETIMES NEVER	
4)	Angles in a triangle add up to $180^\circ$ .	ALWAYS SOMETIMES NEVER	
5)	If one shape is twice the size of another shape, then the shapes are congruent.	ALWAYS SOMETIMES NEVER	
6)	A regular triangle has all angles equal to $60^\circ$ .	ALWAYS SOMETIMES NEVER	

For each of the statements below, tick whether they are always true, sometimes true or never true. Can you explain your reasoning by drawing or writing?

	STATEMENT	ALWAYS, SOMETIMES OR NEVER TRUE?	REASONING
1)	A quadrilateral can have 3 acute angles.	ALWAYS SOMETIMES NEVER	
2)	If a rectangle has double the area of another rectangle then the two shapes are similar.	ALWAYS SOMETIMES NEVER	
3)	If you reflect a shape in a mirror line, then you get a shape which is congruent to the first one.	ALWAYS SOMETIMES NEVER	
4)	If the angles in a triangle are all different, then the triangle could be isosceles.	ALWAYS SOMETIMES NEVER	
5)	If a rectangle and a square have the same area, then the square will have a smaller perimeter.	ALWAYS SOMETIMES NEVER	
6)	A quadrilateral can have 2 reflex angles.	ALWAYS SOMETIMES NEVER	

# SKILL 5 ACTIVITIES

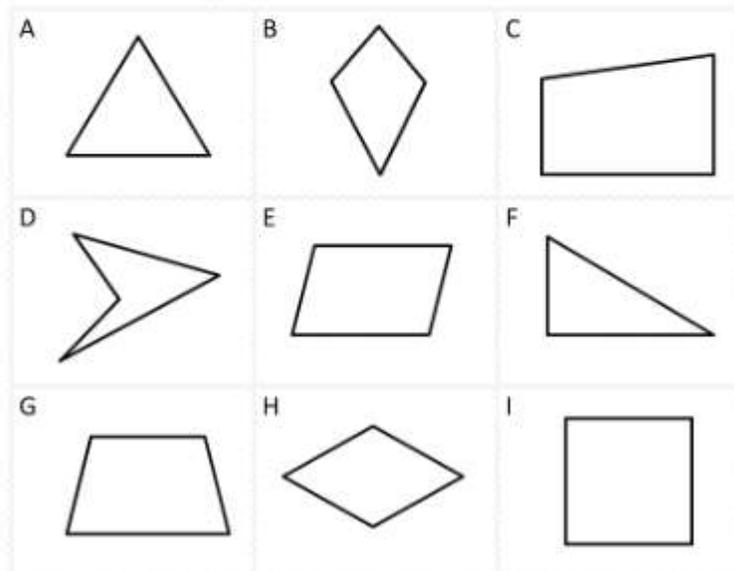


The answer for each riddle is one of the shapes in the middle.  
Find the correct answer to each, and success is within your reach!

- 1) • I am a quadrilateral.  
• I am not a regular shape.  
• I have 2 acute angles.  
• My sides are all equal length.  
• Who am I?
- 2) • I have no parallel sides.  
• I am not regular.  
• I have no lines of symmetry.  
• I have a reflex angle.  
• Who am I?

Shape \_\_\_\_

Shape \_\_\_\_

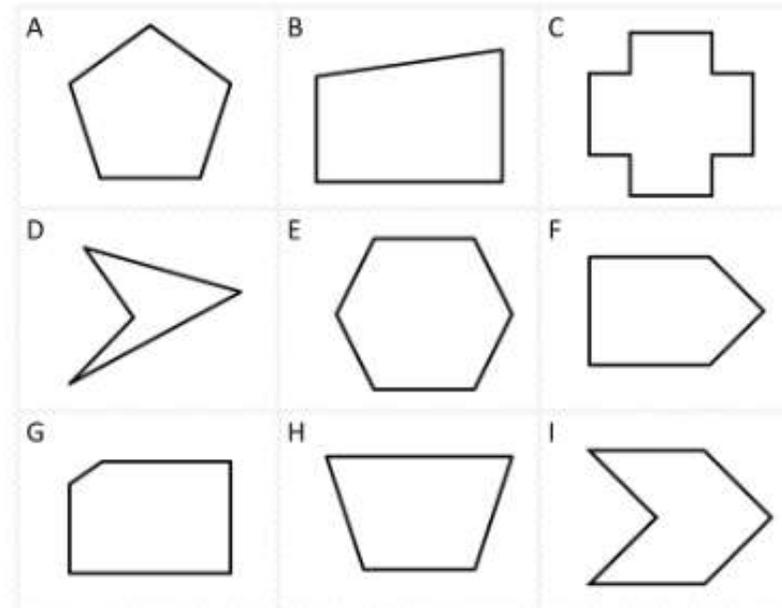


The answer for each riddle is one of the shapes in the middle.  
Find the correct answer to each, and success is within your reach!

- 1) • I am not a quadrilateral.  
• I have parallel lines.  
• I am a hexagon.  
• I have a reflex angle.  
• Who am I?
- 2) • I am not regular.  
• I have fewer than 8 sides.  
• I have 2 pairs of parallel lines.  
• I have 2 obtuse angles.  
• Who am I?

Shape \_\_\_\_

Shape \_\_\_\_



# SKILL 5 ACTIVITIES

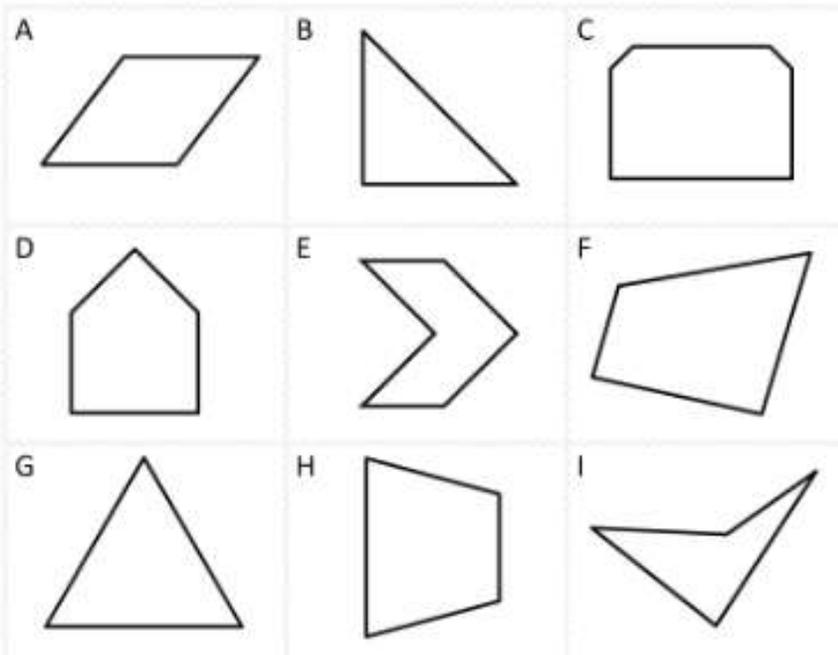


The answer for each riddle is one of the shapes in the middle.  
Find the correct answer to each, and success is within your reach!

- 1)
  - I have a line of symmetry.
  - I have some parallel lines.
  - I have more than 2 right angles.
  - I have more than 4 sides.
  - Who am I?
- 2)
  - I have no parallel lines.
  - I have two acute angles.
  - I am not a quadrilateral.
  - I have a line of symmetry.
  - Who am I?

Shape \_\_\_\_

Shape \_\_\_\_

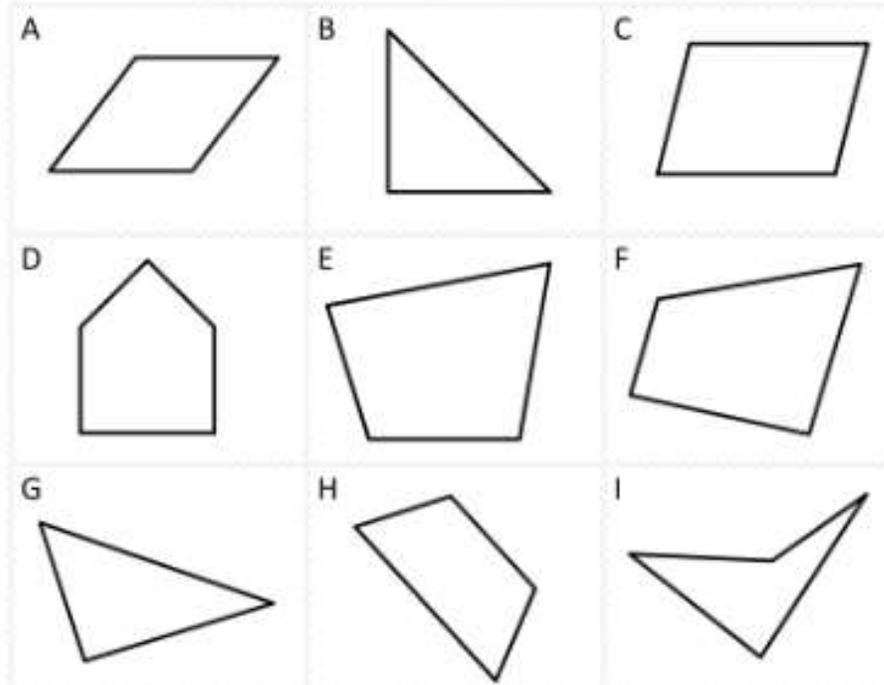


The answer for each riddle is one of the shapes in the middle.  
Find the correct answer to each, and success is within your reach!

- 1)
  - I am not a regular shape.
  - I have no parallel lines.
  - I have some acute and some obtuse angles.
  - Who am I?
- 2)
  - I have some parallel lines.
  - I have a line of symmetry.
  - I have no right angles.
  - My sides are not all the same length.
  - Who am I?

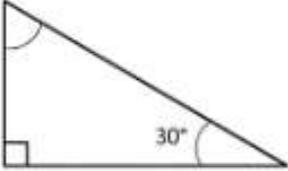
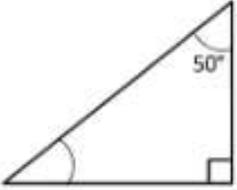
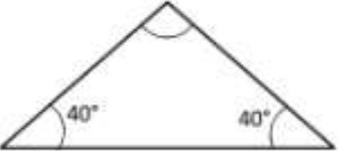
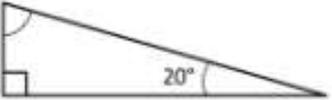
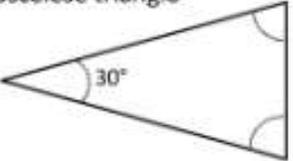
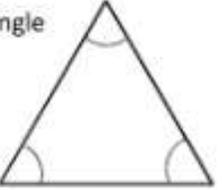
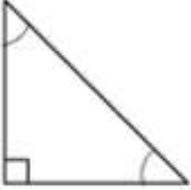
Shape \_\_\_\_

Shape \_\_\_\_



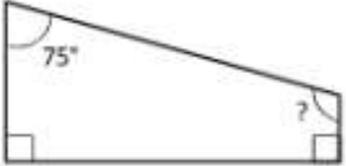
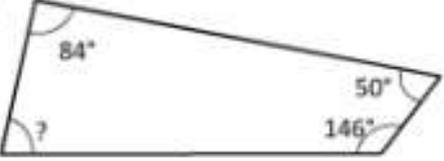
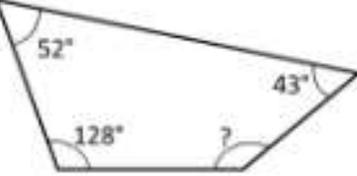
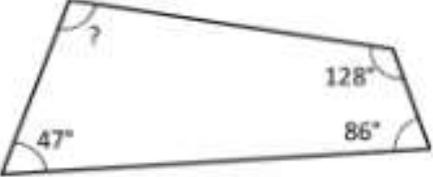
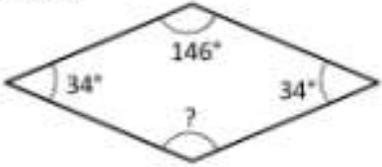
# SKILL 5 ACTIVITIES

Work out the missing angles. Remember that the angles in a triangle add up to  $180^\circ$ . The angles are not drawn to scale, so do not try to measure them!

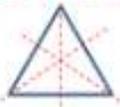
1) 	2) 
3) 	4) 
5) Isosceles triangle 	6) Equilateral triangle 
7) 	8) Isosceles triangle 

Remember that the angles in a quadrilateral add up to  $360^\circ$ . The angles are not drawn to scale, so do not try to measure them!

Find the value of each angle marked with a "?"

1) 	2) 
3) 	4) 
5) 	6) 
7) A rhombus 	8) 

# SKILL 5 ANSWERS

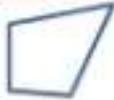
	STATEMENT	ALWAYS, SOMETIMES OR NEVER TRUE?	REASONING
1)	A rhombus is a regular shape.	ALWAYS <b>SOMETIMES</b> NEVER	The only types of rhombi that are regular are squares.
2)	A trapezium has a line of symmetry.	ALWAYS <b>SOMETIMES</b> NEVER	Some trapeziums have a line of symmetry, some don't. 
3)	An isosceles triangle has no right angles.	ALWAYS <b>SOMETIMES</b> NEVER	You can get a right isosceles triangle. 
4)	A pentagon has 2 pairs of parallel lines.	ALWAYS <b>SOMETIMES</b> NEVER	A shape with 2 pairs of parallel lines can be made into a pentagon, like the shape below. 
5)	A triangle has 3 lines of symmetry.	ALWAYS <b>SOMETIMES</b> NEVER	An equilateral triangle has 3 lines of symmetry. 
6)	A rhombus is a parallelogram.	<b>ALWAYS</b> SOMETIMES NEVER	All rhombi are also parallelograms, as they have 2 pairs of parallel lines. 

## ALWAYS, SOMETIMES OR NEVER TRUE?

	STATEMENT	ALWAYS, SOMETIMES OR NEVER TRUE?	REASONING
1)	A trapezium has exactly one right angle.	ALWAYS SOMETIMES <b>NEVER</b>	A trapezium either has none, two or four right angles. (*) 
2)	The diameter of a circle is half the radius.	ALWAYS SOMETIMES <b>NEVER</b>	The radius of a circle is always equal to half the diameter, not the other way round!
3)	The opposite angles of a parallelogram are equal.	<b>ALWAYS</b> SOMETIMES NEVER	This is always true.  <b>Equal angles:</b> The red angles are equal. The blue angles are equal.
4)	A kite has a line of symmetry.	<b>ALWAYS</b> SOMETIMES NEVER	All kites have at least one line of symmetry. 
5)	A triangle has exactly two mirror lines.	ALWAYS SOMETIMES <b>NEVER</b>	A triangle can have none, one or three lines of symmetry but never two!
6)	A parallelogram has exactly two lines of symmetry.	ALWAYS <b>SOMETIMES</b> NEVER	Parallelograms can have 0, 2 or 4 lines of symmetry. This rectangle, which is a parallelogram, has two. 

# SKILL 5 ANSWERS

	STATEMENT	ALWAYS, SOMETIMES OR NEVER TRUE?	REASONING
1)	The longest side of a scalene triangle is always larger than the other two sides added together.	ALWAYS SOMETIMES <b>NEVER</b>	If you straightened the two smaller sides of the triangle out into a single straight line, it would have to be longer than the longest side.
2)	The diameter of a circle is half the radius.	ALWAYS SOMETIMES <b>NEVER</b>	The diameter of a circle is <b>double</b> the radius. 
3)	An irregular octagon has 4 pairs of parallel sides.	ALWAYS <b>SOMETIMES</b> NEVER	All regular octagons have 4 pairs of parallel sides. Some irregular octagons also have this property; most do not! 
4)	Angles in a triangle add up to 180°.	<b>ALWAYS</b> SOMETIMES NEVER	This statement is true for all triangles. There is a good proof on this webpage. <a href="http://www.mathsisfun.com/proof180deg.html">www.mathsisfun.com/proof180deg.html</a>
5)	If one shape is twice the size of another shape, then the shapes are congruent.	ALWAYS SOMETIMES <b>NEVER</b>	The two shapes are <b>similar</b> not congruent. Congruent shapes have the same size and shape as each other.
6)	A regular triangle has all angles equal to 60° and is also called an equilateral triangle.	<b>ALWAYS</b> SOMETIMES NEVER	As the angles in a triangle have to add up to 180°, and a regular shape has all angles equal, the angles in an equilateral triangle have to be 60°.

	STATEMENT	ALWAYS, SOMETIMES OR NEVER TRUE?	REASONING
1)	A quadrilateral can have 3 acute angles.	ALWAYS <b>SOMETIMES</b> NEVER	This is true for some concave quadrilaterals. 
2)	If a rectangle has sides twice as long as another rectangle, then the area will be twice as large.	ALWAYS SOMETIMES <b>NEVER</b>	The area will be 4 times larger than the original rectangle. 
3)	If you reflect a shape in a mirror line, then you get a shape which is congruent to the first one.	<b>ALWAYS</b> SOMETIMES NEVER	Congruent shapes has the same length sides and the same angles – just as a reflection does.
4)	If the angles in a triangle are all different, then the triangle could be isosceles.	ALWAYS SOMETIMES <b>NEVER</b>	Isosceles triangles have to have two identical angles. 
5)	If a rectangle and a square have the same area, then the square will have a smaller perimeter.	<b>ALWAYS</b> SOMETIMES NEVER	This is always true (unless the rectangle in question is the same shape as the square). The square is the most efficient shape (apart from a circle) for maximizing area from its length.
6)	A quadrilateral can have 3 obtuse angles.	ALWAYS <b>SOMETIMES</b> NEVER	This is true for some quadrilaterals like this kite. 

# SKILL 5 ANSWERS

- 1) • I am a quadrilateral.  
• I am not a regular shape.  
• I have 2 acute angles.  
• My sides are all equal length.  
• Who am I?

Shape **H**

- 2) • I have no parallel sides.  
• I am not regular.  
• I have no lines of symmetry.  
• I have a reflex angle.  
• Who am I?

Shape **D**

- 1) • I am not a quadrilateral.  
• I have parallel lines.  
• I am a hexagon.  
• I have a reflex angle.  
• Who am I?

Shape **I**

- 2) • I am not regular.  
• I have fewer than 8 sides.  
• I have 2 pairs of parallel lines.  
• I have 2 obtuse angles.  
• Who am I?

Shape **G**

- 1) • I have a line of symmetry.  
• I have some parallel lines.  
• I have more than 2 right angles.  
• I have more than 4 sides.  
• Who am I?

Shape **D**

- 2) • I have no parallel lines.  
• I have two acute angles.  
• I am not a quadrilateral.  
• I have a line of symmetry.  
• Who am I?

Shape **B**

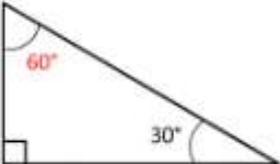
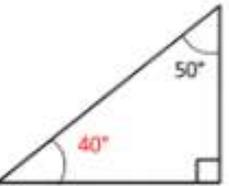
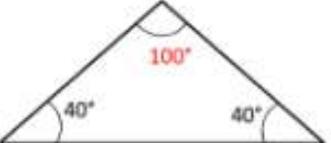
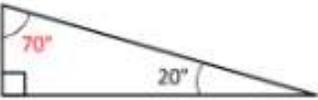
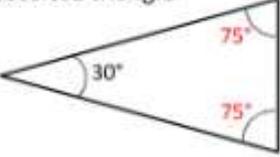
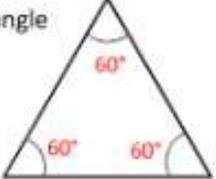
- 1) • I am not a regular shape.  
• I have no parallel lines.  
• I have some acute and some obtuse angles.  
• Who am I?

Shape **E**

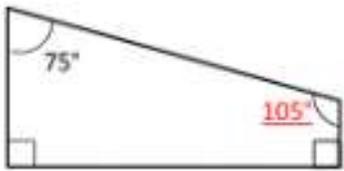
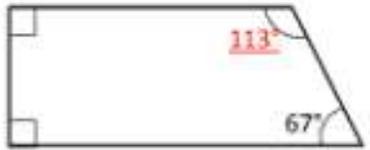
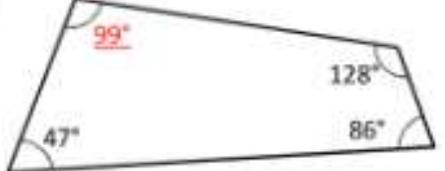
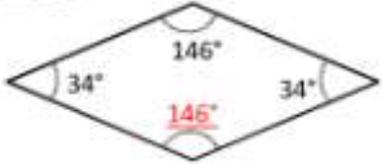
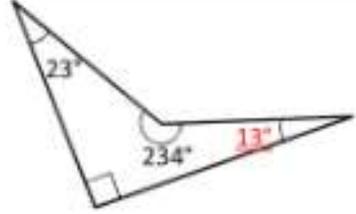
- 2) • I have some parallel lines.  
• I have a line of symmetry.  
• I have no right angles.  
• My sides are not all the same length.  
• Who am I?

Shape **H**

# SKILL 5 ANSWERS

1) 	2) 
3) 	4) 
5) Isosceles triangle 	6) Equilateral triangle 
7) 	8) Isosceles triangle 

Find the value of each angle marked with a "?"

1) 	2) 
3) 	4) 
5) 	6) 
7) A rhombus 	8) 

# MESSAGE FROM DR BAKER

That is all of the maths for this term!

I hope you have had some fun and learnt some things working on maths at home but I also hope that you can get back in to school in September and learn lots more maths back where school belongs.

Don't forget to keep doing a little bit of maths over the holidays so you don't forget what you have learnt – even if it is just your times tables or looking out for shapes.

I hope you all have a lovely summer. It has been wonderful working with you all this year even if it was not the year we expected at the start.

Good luck to all the Year 6s as you move on to your new schools – you will all do fantastically.

I will miss you all.