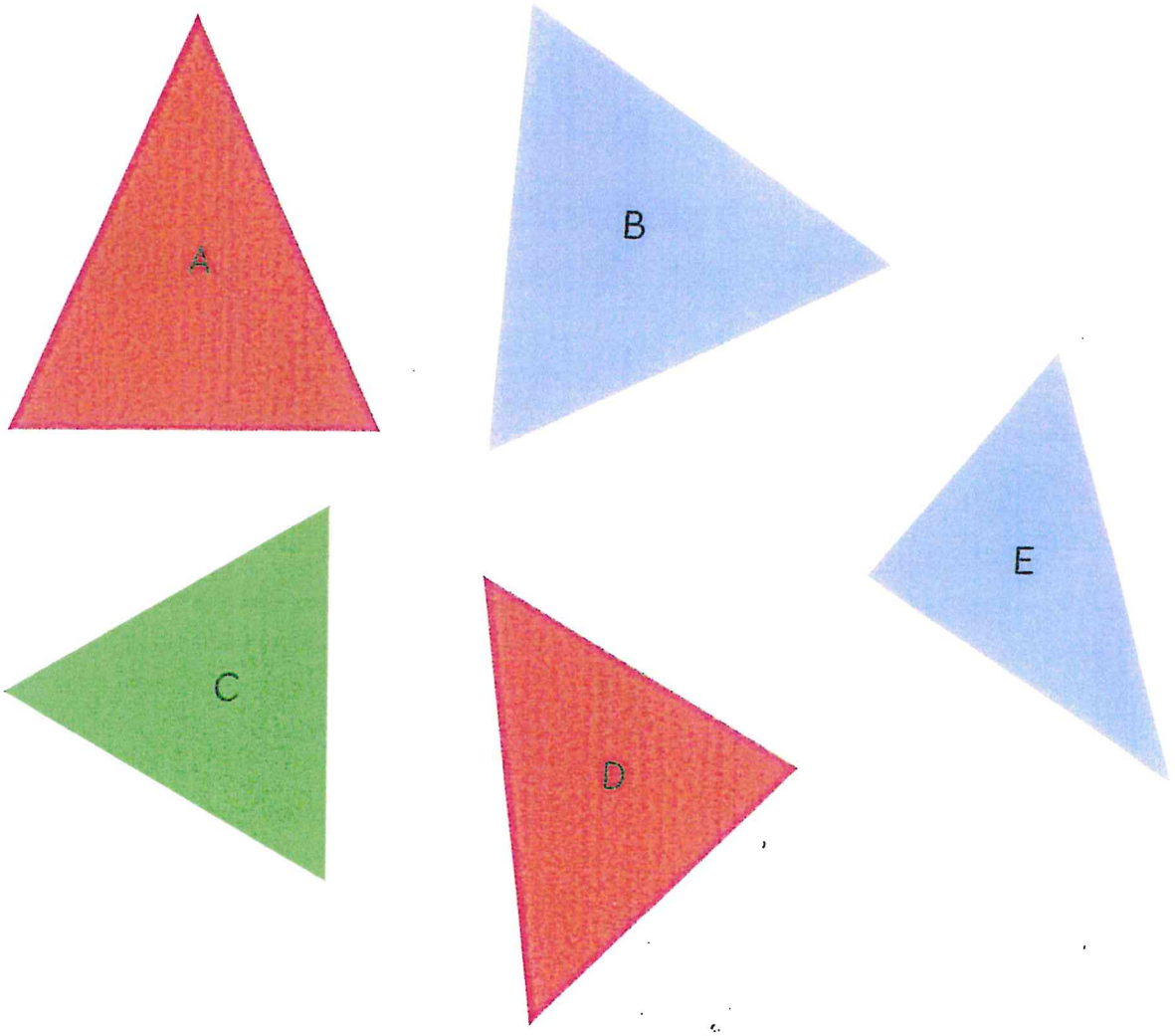
Monday 25/1/21

Classifying Triangles

Lesson 3

In Focus



How are they alike?

How are they different?

Let's Learn

1  looks at the lengths of the sides.

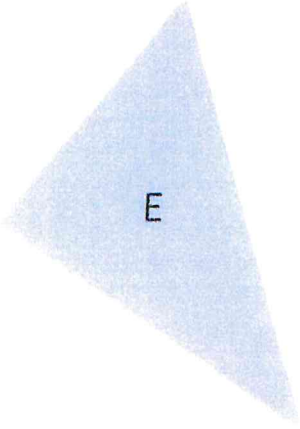
all three sides are of equal length	only two sides are of equal length	all three sides are of different length
B, C	A, D	E

equilateral triangles

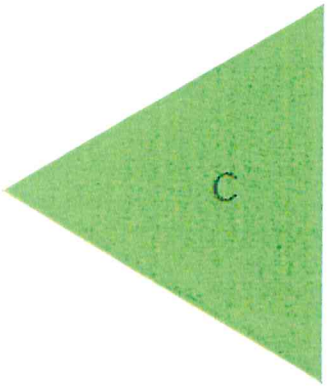
isosceles triangles

scalene triangles

2  looks at the perimeter.



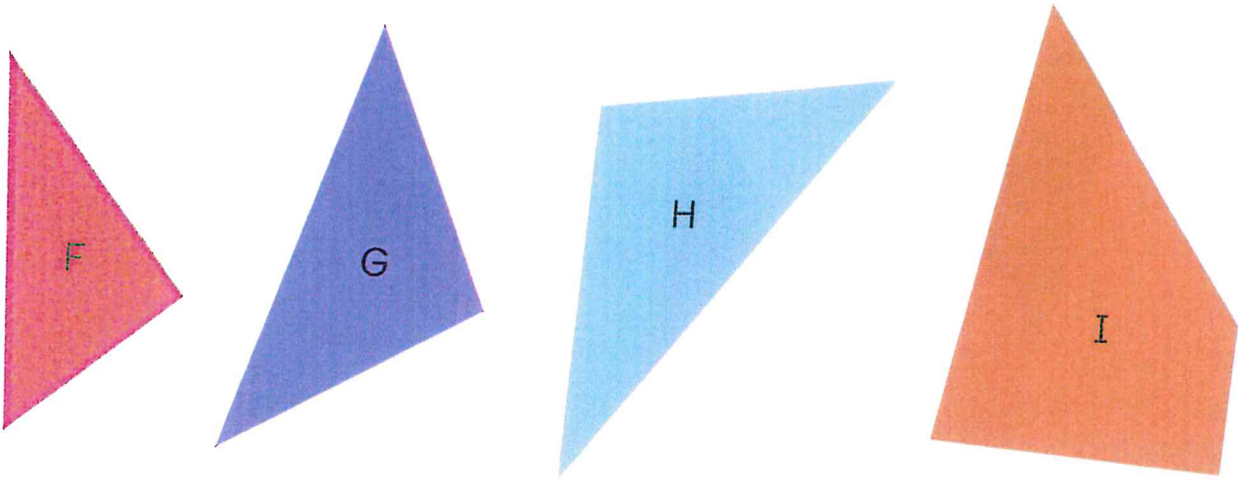
They have the same perimeter.



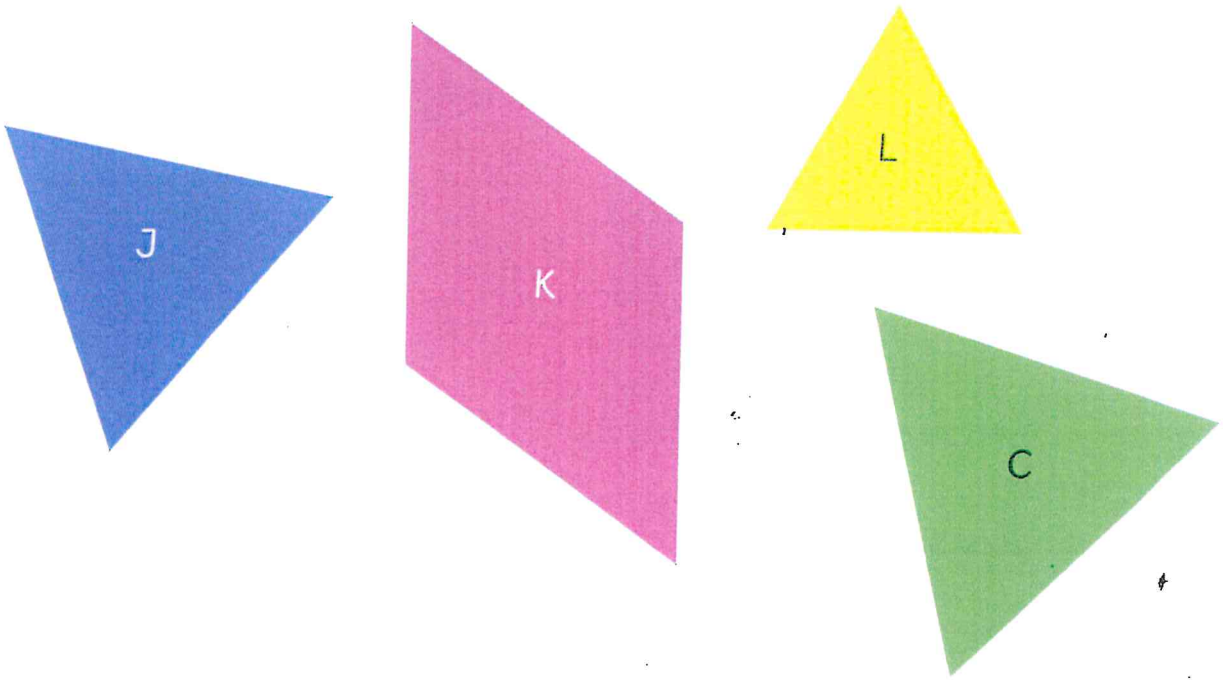
Is  correct?

Guided Practice

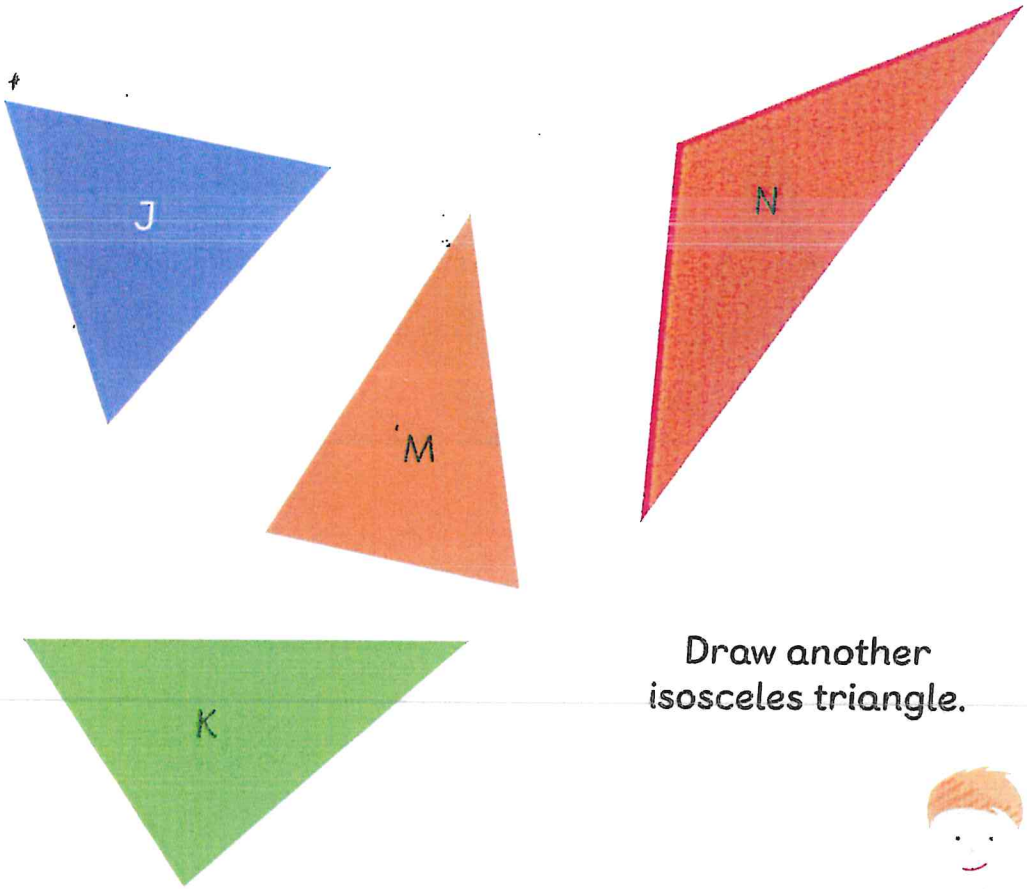
1 In a scalene triangle, all three sides have different lengths.
Which of these are scalene triangles?



2 In an equilateral triangle, all three sides have the same length.
Which of these are equilateral triangles?



3 In an isosceles triangle, two sides are of equal lengths.
Which of these are isosceles triangles?



Draw another isosceles triangle.

Complete Worksheet **3** – Page **126 - 128**

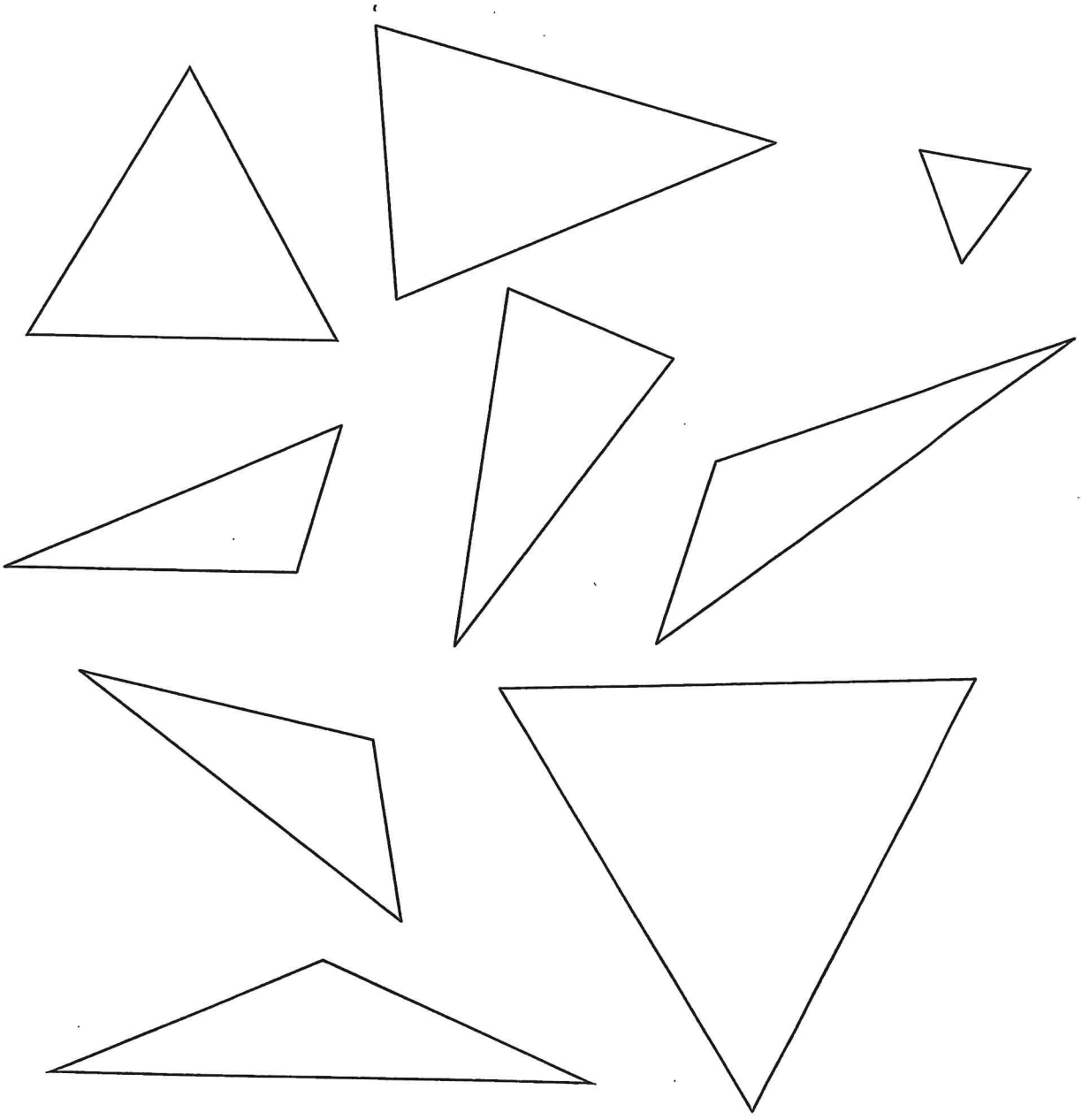
Name: _____ Class: _____ Date: _____

Worksheet 3

Classifying Triangles

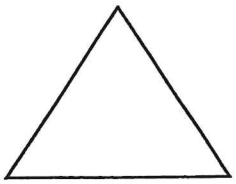
1 Look at the triangles.

(a) Colour the scalene triangles green.
(b) Colour the equilateral triangles red.
(c) Colour the isosceles triangles blue.

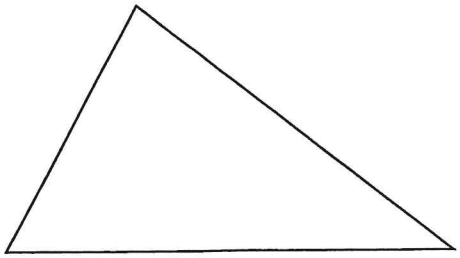


2 Label each triangle.

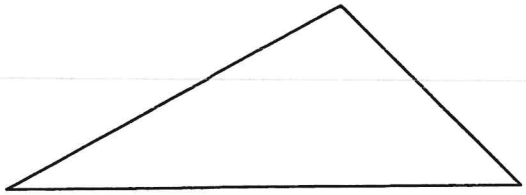
(a)



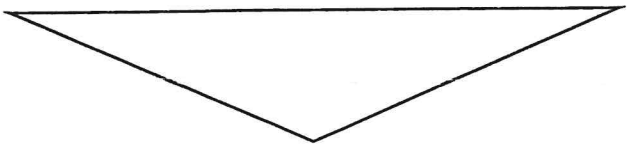
(b)



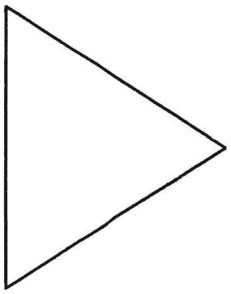
(c)



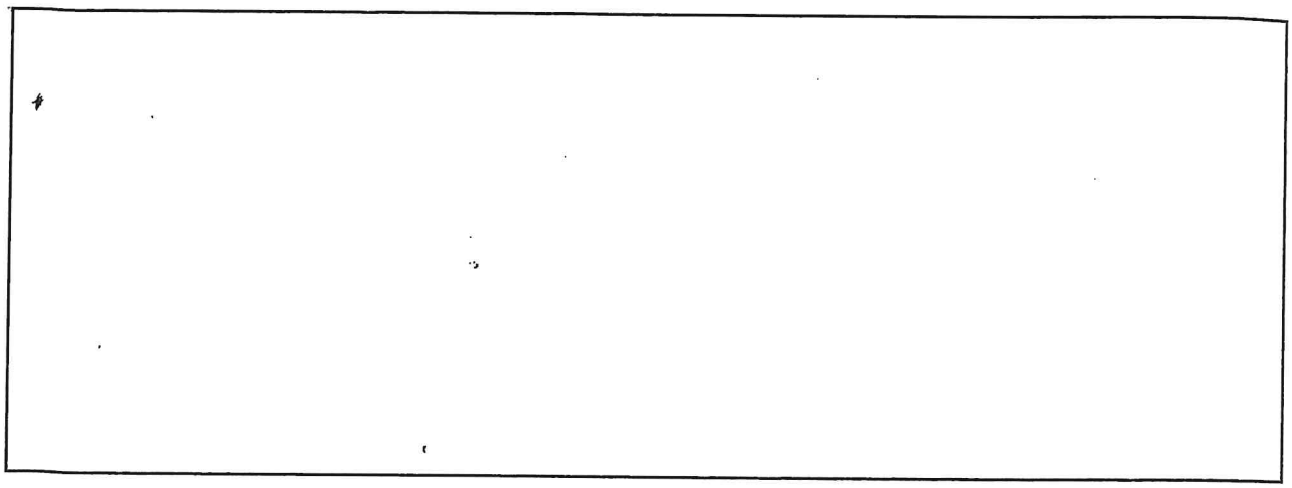
(d)



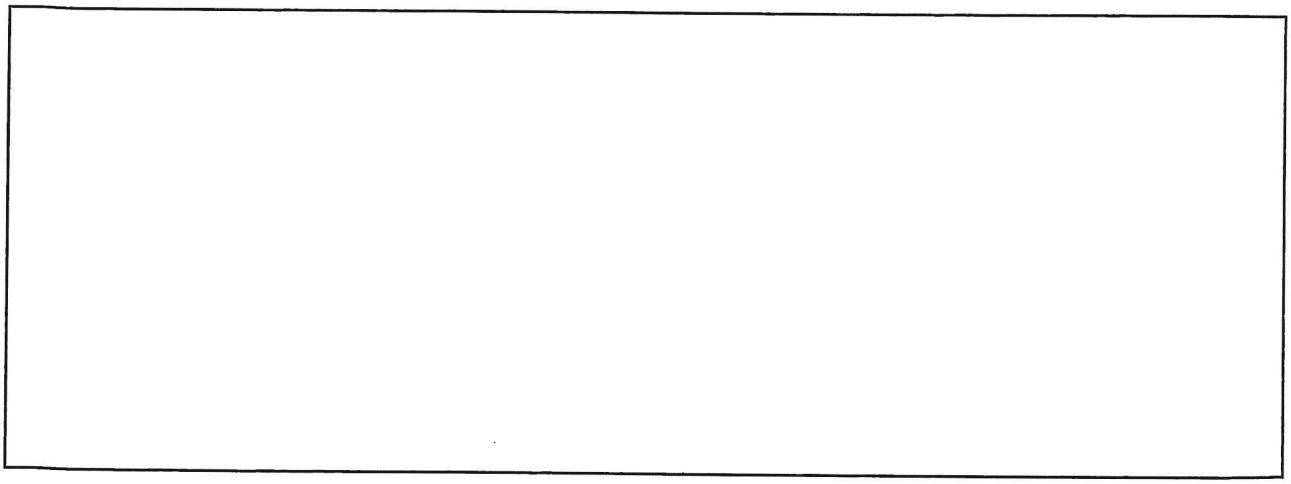
(e)



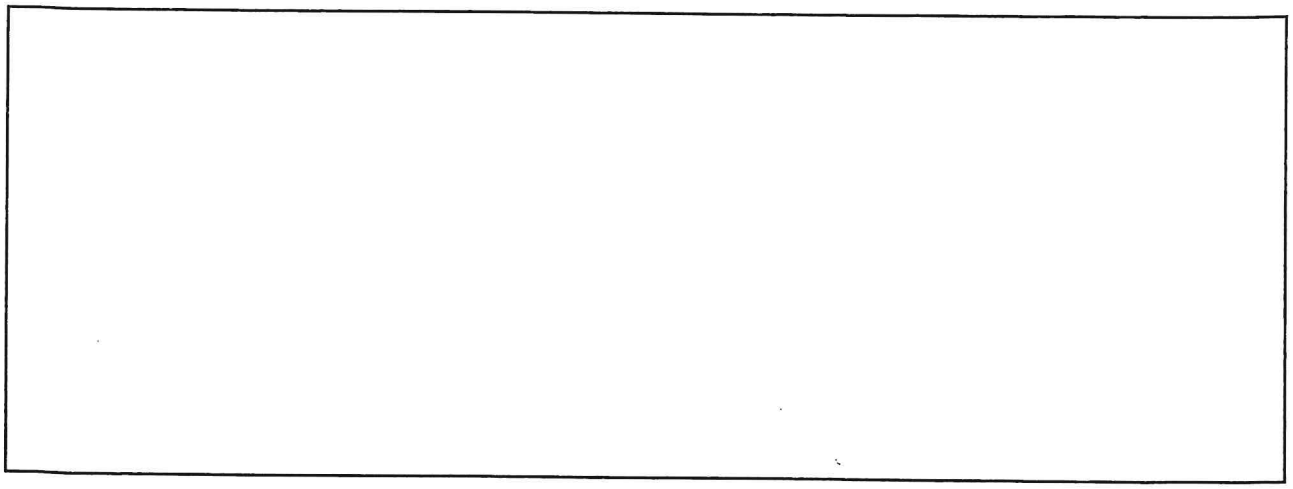
3 Draw two different scalene triangles.



4 Draw two different equilateral triangles.



5 Draw two different isosceles triangles.

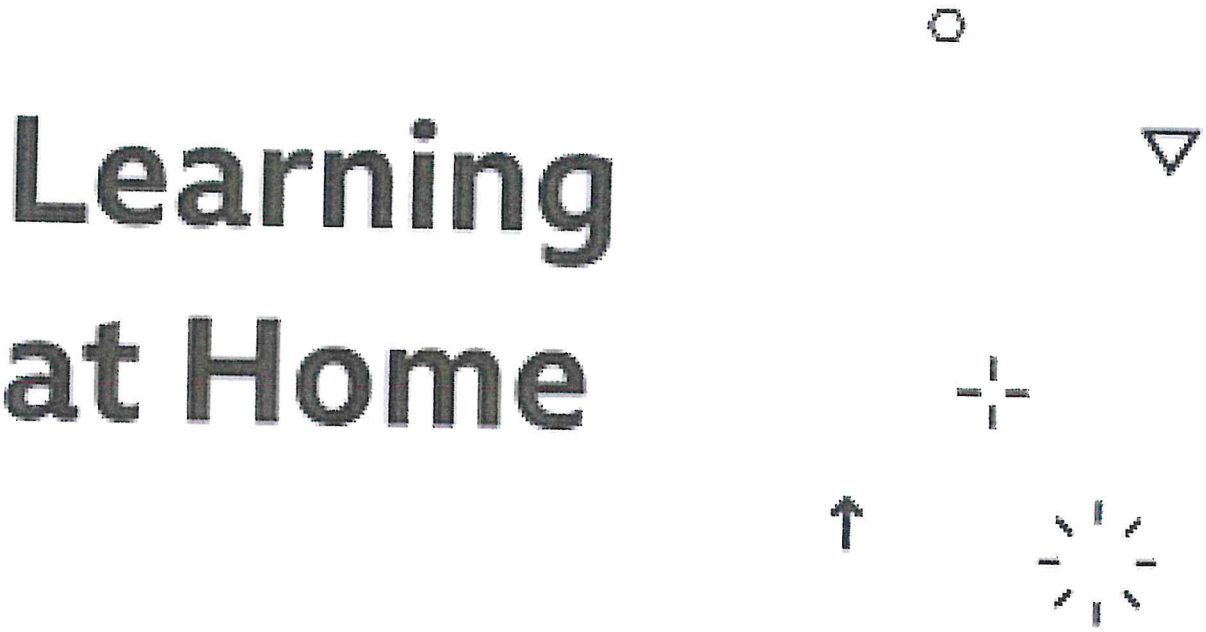


Classifying quadrilaterals

Part of Learning at Home

Add to My Bitesize

Tuesday



Learning focus

Learn about the different types of quadrilaterals and their properties.

This includes:

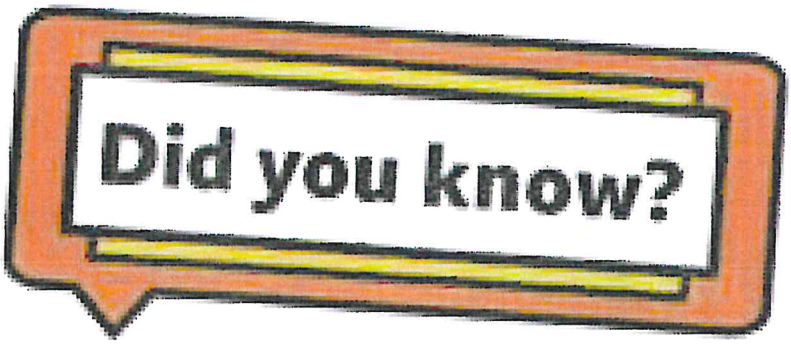
- a learning summary
- one video
- three activities

Learn

You can classify shapes based on their properties.

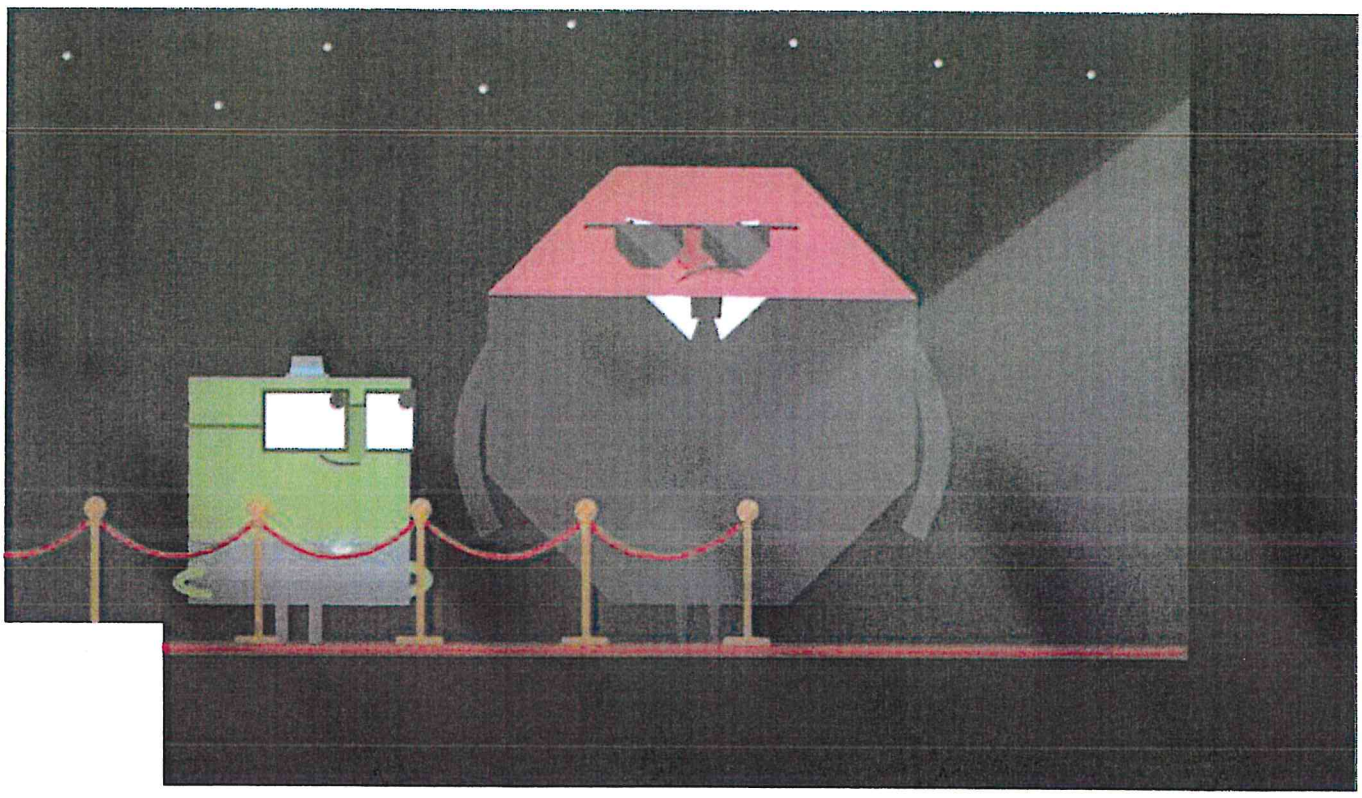
Properties are qualities that a shape has. Examples of shape properties are:

- number of sides
- length of sides
- number of angles (corners)
- types of angle (acute, obtuse, right-angle)
- perpendicular and parallel lines



Watch the video below from KS2 Maths which is all about **polygons.** Polygons are 2D shapes with 3 or more straight sides.

All quadrilaterals are polygons, but there are other types of polygons too.



Quadrilaterals

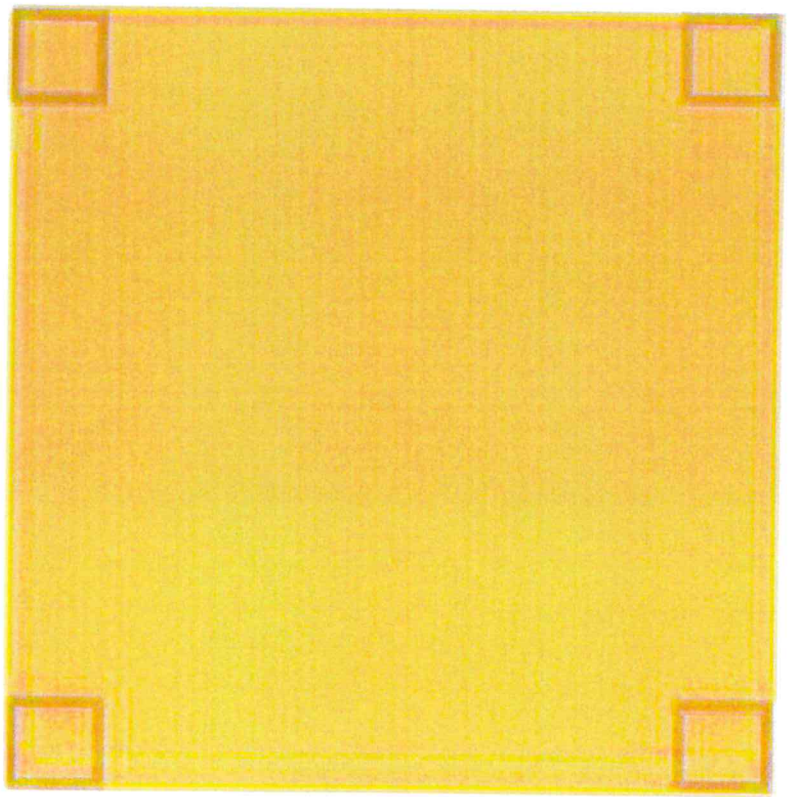
Quadrilaterals have **4 straight sides** and **4 angles**. These are the common properties.

Here are some examples of quadrilaterals and their properties:

Square

Properties:

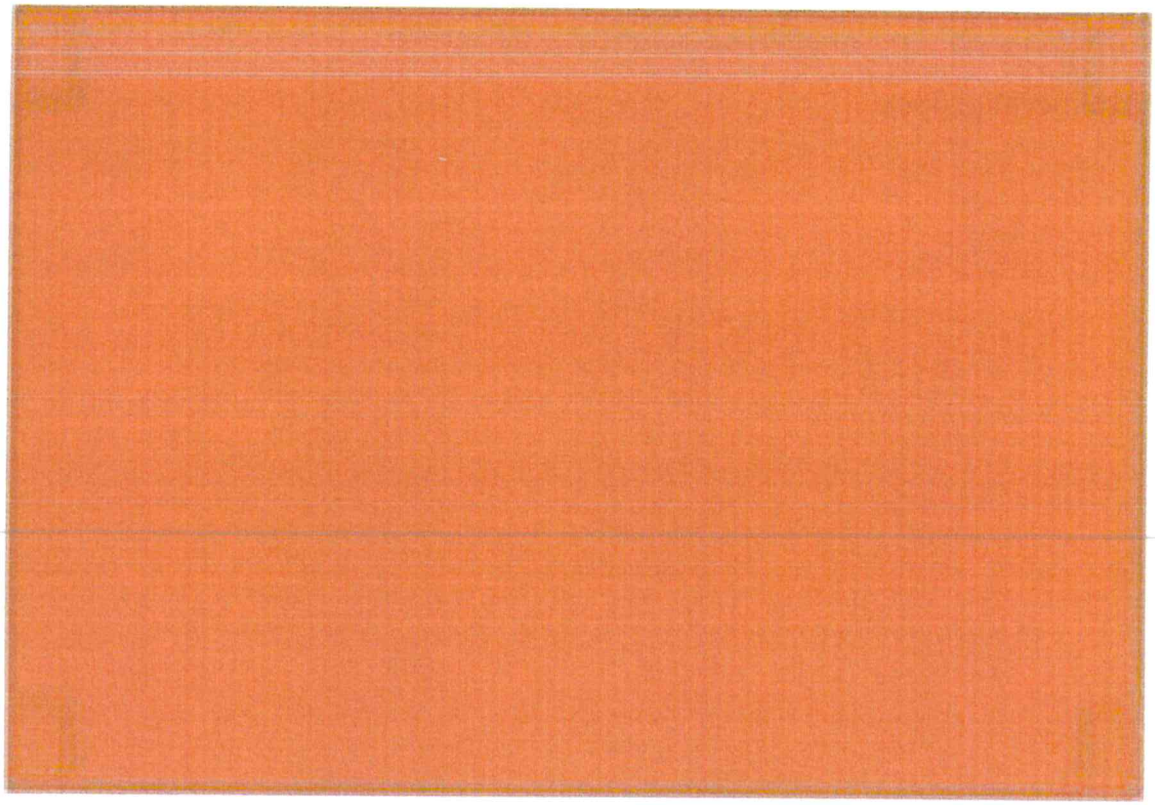
- all sides all of an equal length
- angles that are all right-angles (perpendicular lines)
- 2 pairs of parallel lines



Rectangle

Properties:

- 2 sides longer than the others
- angles that are all right-angles
- 2 pairs of parallel lines

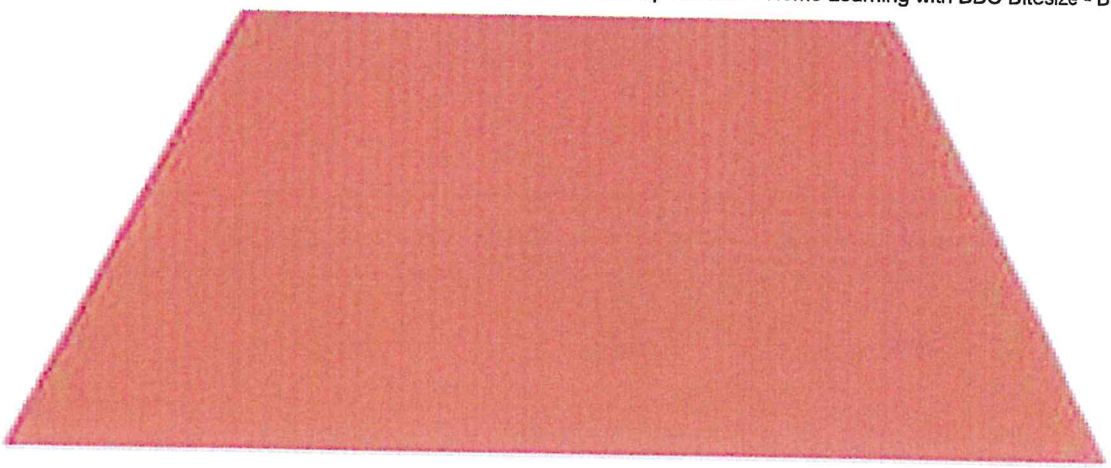


Trapezium

Not all trapeziums look the same. This trapezium has:

Properties:

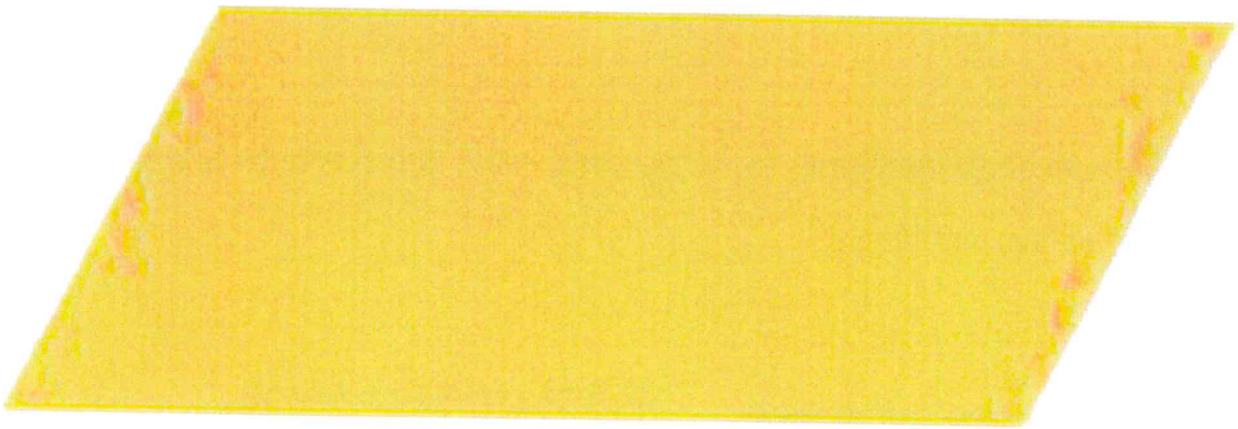
- 1 pair of parallel lines (all trapeziums have this)
- 2 sets of equal angles
- 2 lines equal length and 2 that aren't
- 2 obtuse angles and 2 acute



Parallelogram

Properties:

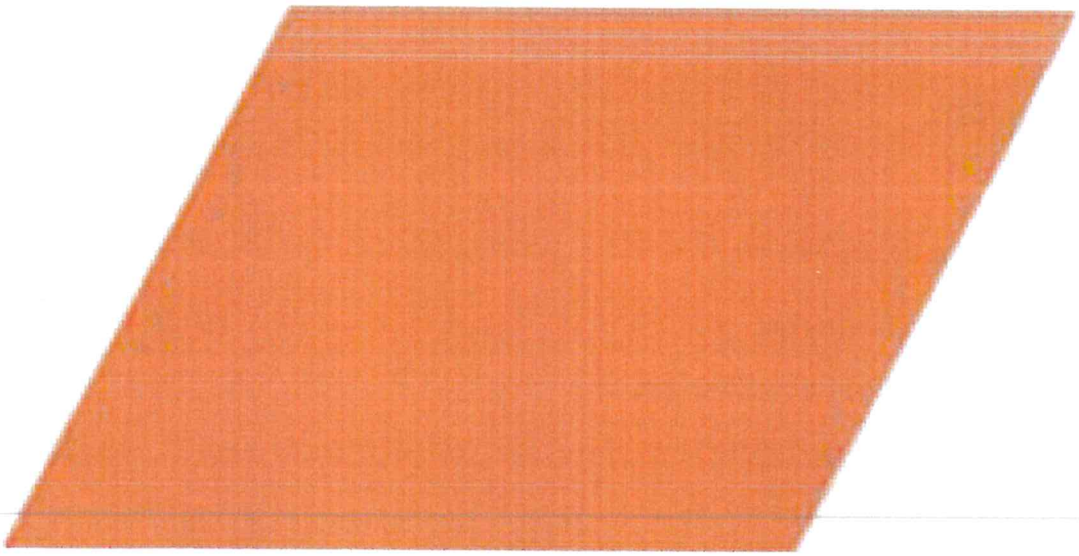
- 2 pairs of parallel lines
- 2 acute and 2 obtuse angles
- 2 pairs of sides that are equal length



Rhombus

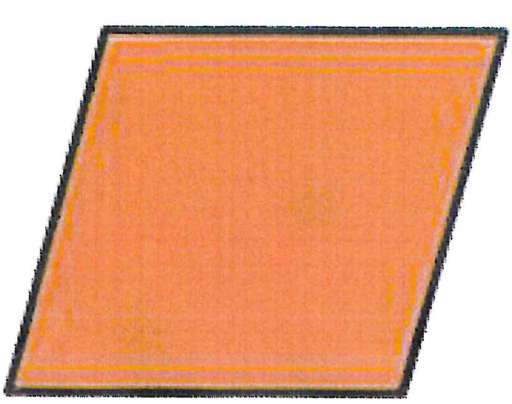
Properties:

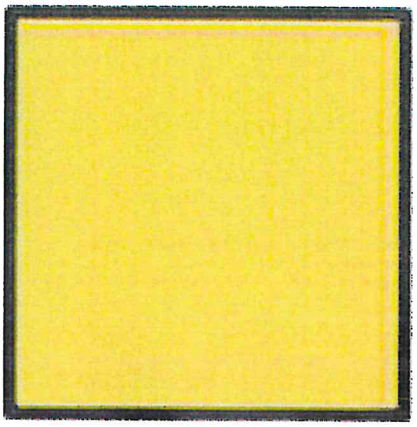
- all sides equal length
- 2 pairs of parallel lines
- 2 acute and 2 obtuse angles



As you can see, some quadrilaterals share more properties than four sides and four angles.

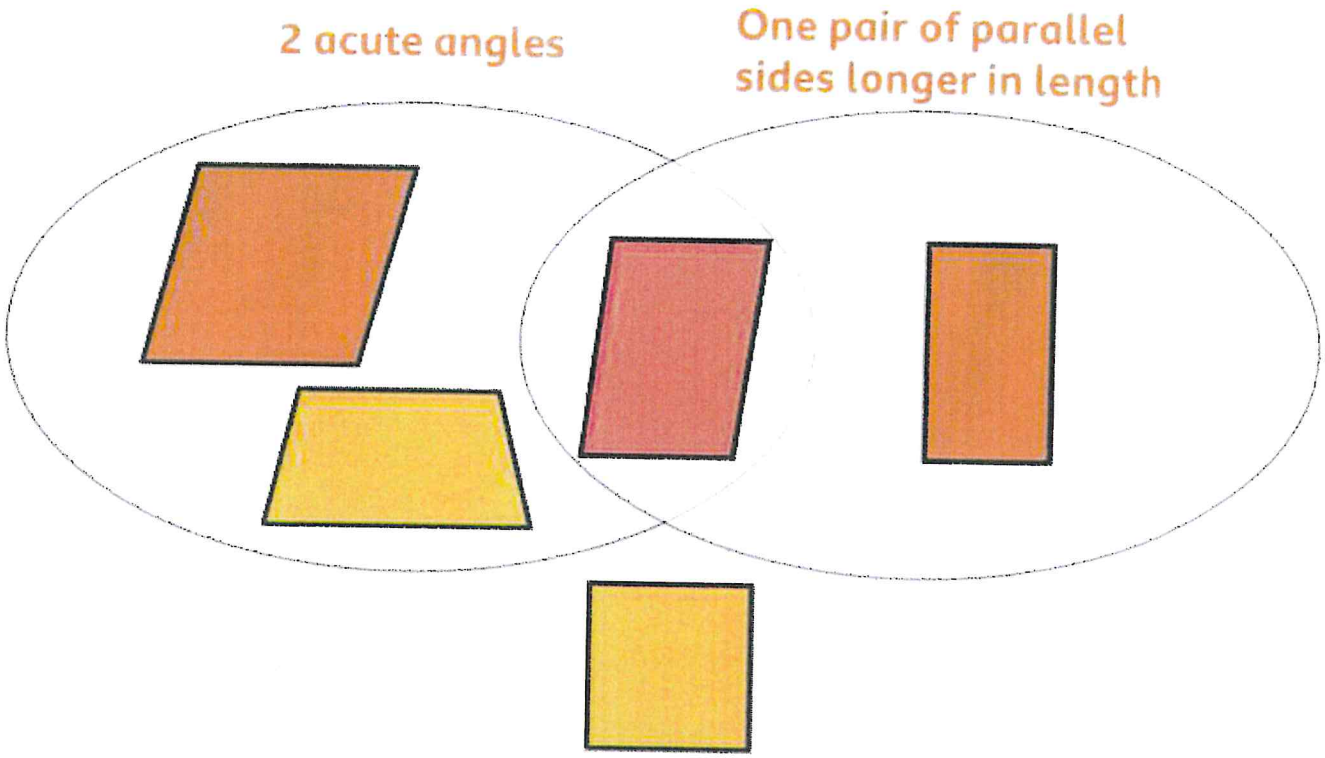
Look at this rhombus and square.





These two quadrilaterals also share **2 pairs of parallel lines** and **4 equal lengths.**

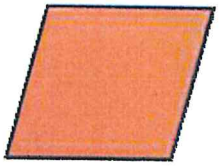
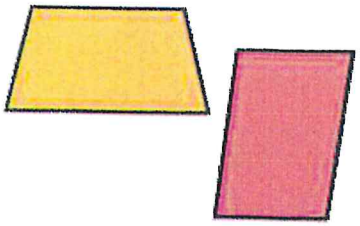
You can classify and compare shapes by using a Venn diagram.



Each shape has been placed in the section of the Venn diagram it belongs in.

Because the square doesn't have any acute angles or a pair of parallel sides that are longer in length, then it stays outside of the Venn diagram.

You could also use a Carroll diagram to classify these shapes.

	4 equal sides	At least one pair of parallel lines
Has right angles		
No right angles		

Tuesday 26/1/21

Classifying Quadrilaterals

Lesson 4

In Focus

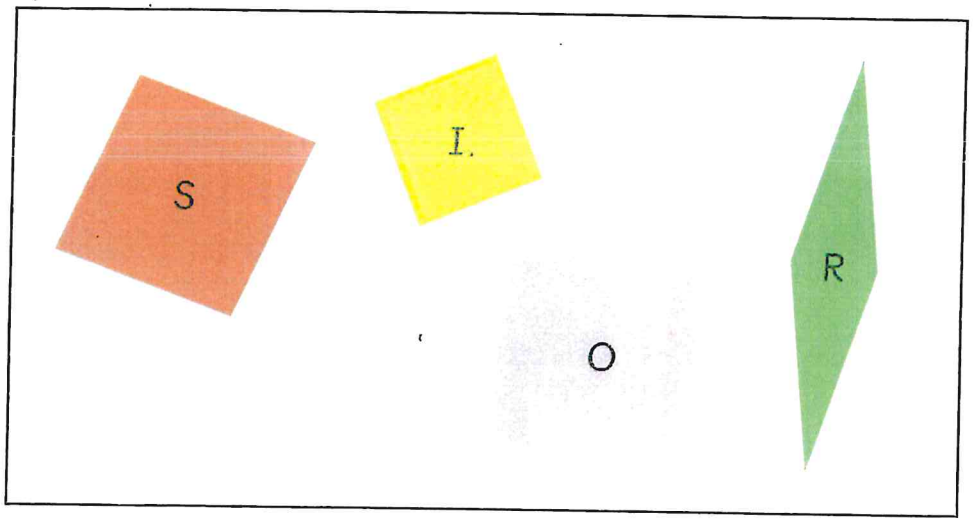
Quadrilaterals are polygons with four sides.

Look for similarities between quadrilaterals that allow you to put them into groups.

Let's Learn

1  did this.

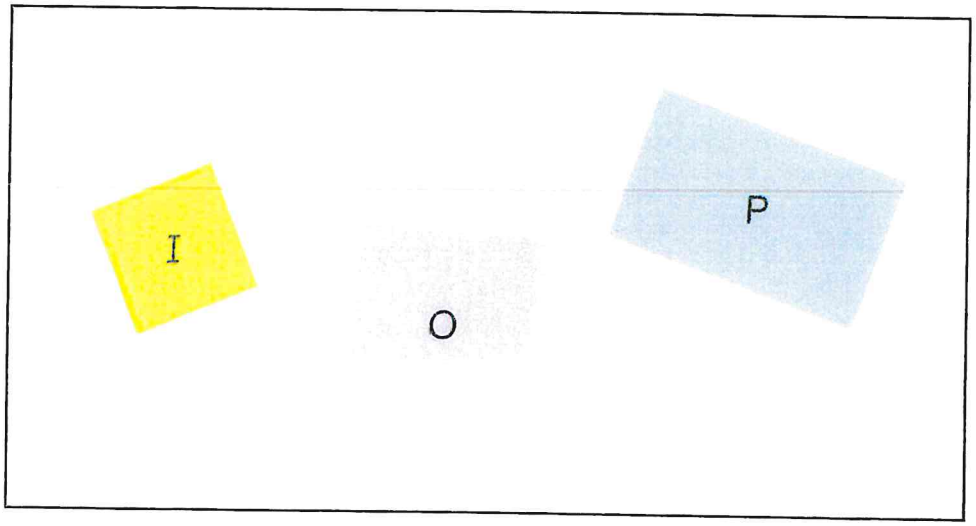
I put these four quadrilaterals into the same group because...



each has four equal sides.

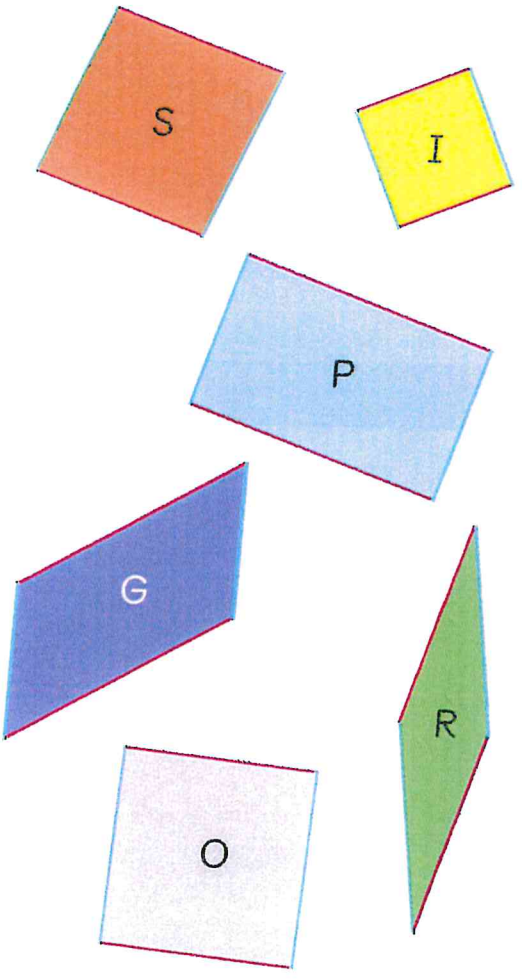
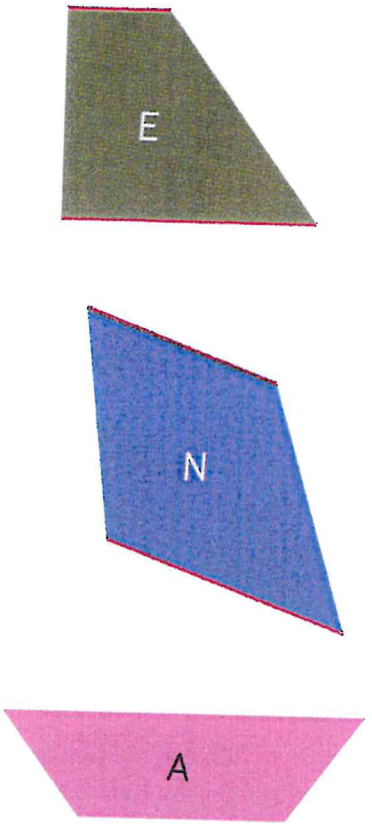
2  did this.

I put these three quadrilaterals into the same group because each has 4 right angles.



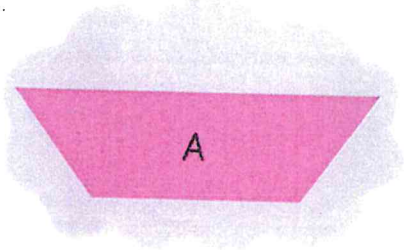
Look for similarities between quadrilaterals that allow you to put them into groups.

3 did this.

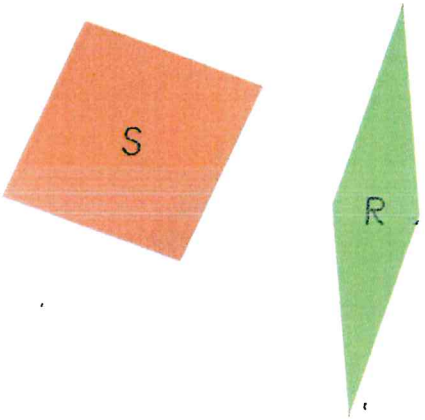
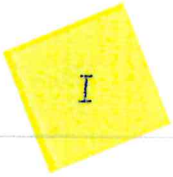
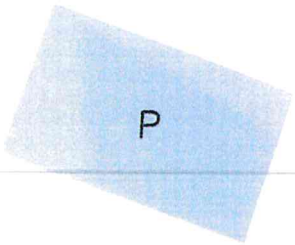
Group 1	Group 2
	

What is 's rule?

A quadrilateral with a pair of parallel sides is a **trapezium**.



4  did this.

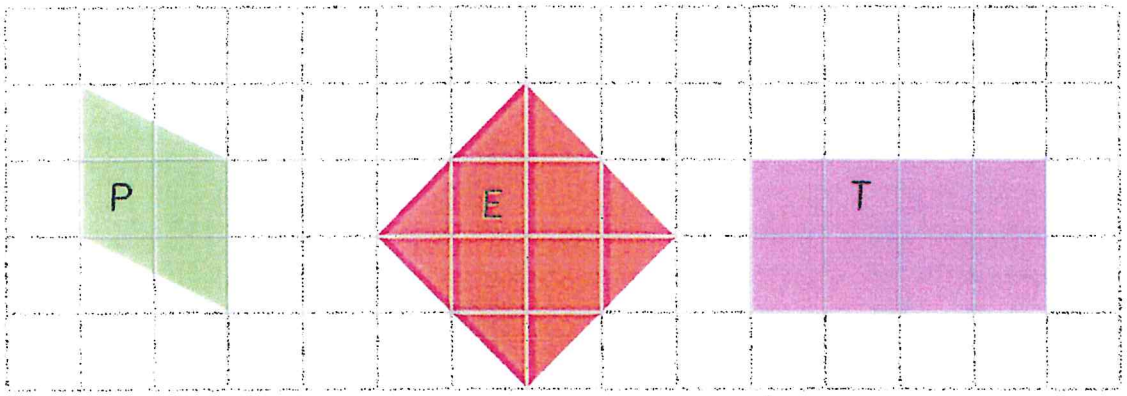
rhombus	parallelogram
	
square	**rectangle**
	

What makes a quadrilateral a rhombus?

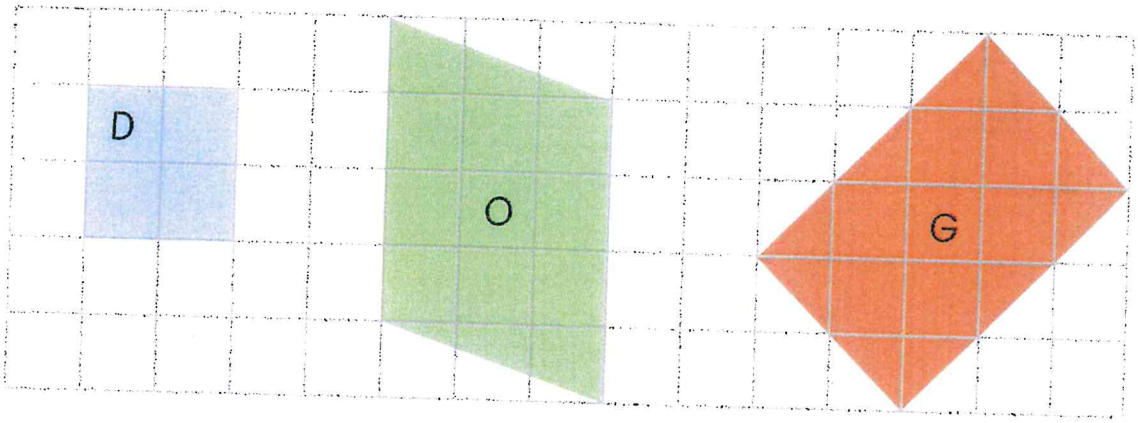
Guided Practice

1 Which of the following are squares?

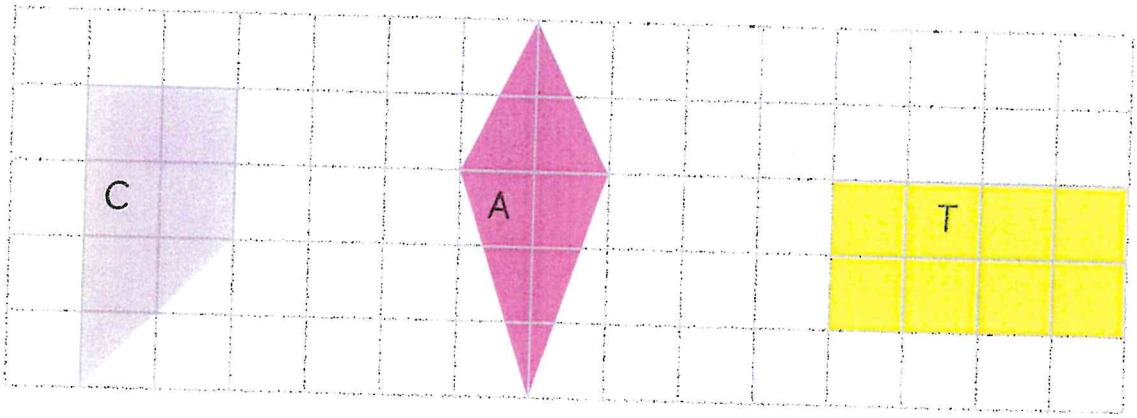
Why? 



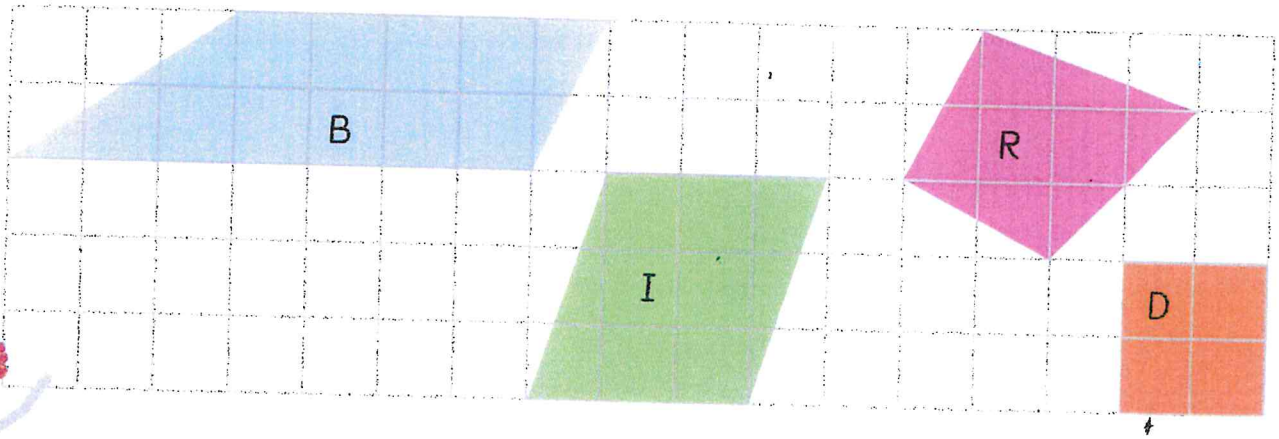
2 Which of the following are rectangles? **Explain.**



3 Which of the following are trapeziums?



4 Which of the following are parallelograms?



Are any of the quadrilaterals on this page rhombuses?

Complete Worksheet 4 – Page **129 - 132**

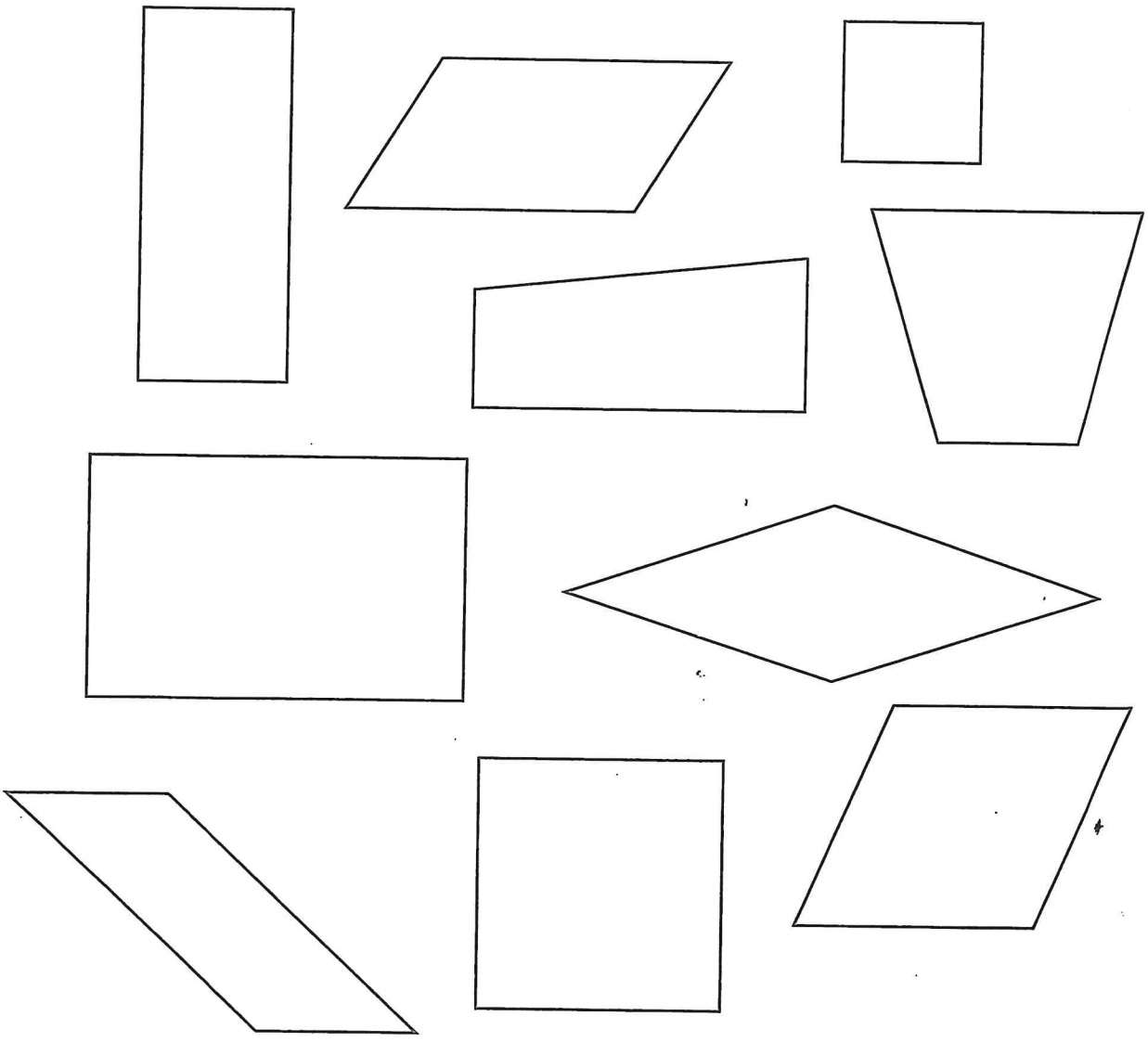
Name: _____ Class: _____ Date: _____

Worksheet 4

Classifying Quadrilaterals

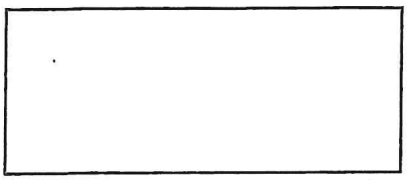
1 Look at the quadrilaterals given.

(a) Colour the squares blue.
(b) Colour any other rectangles green.
(c) Colour the other rhombuses red.
(d) Colour any other parallelograms yellow.
(e) Colour any other trapeziums orange.

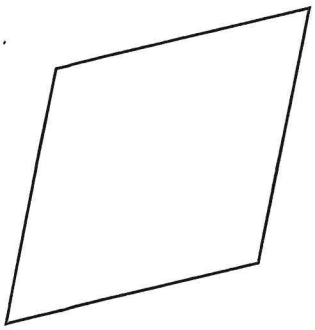


2 Label each quadrilateral.

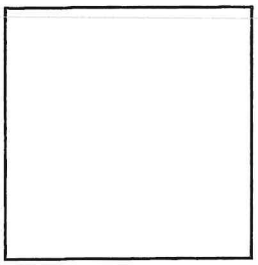
(a)



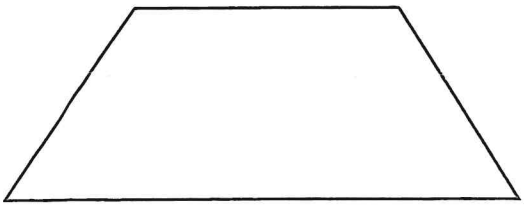
(b)



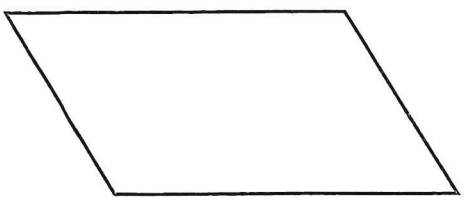
(c)



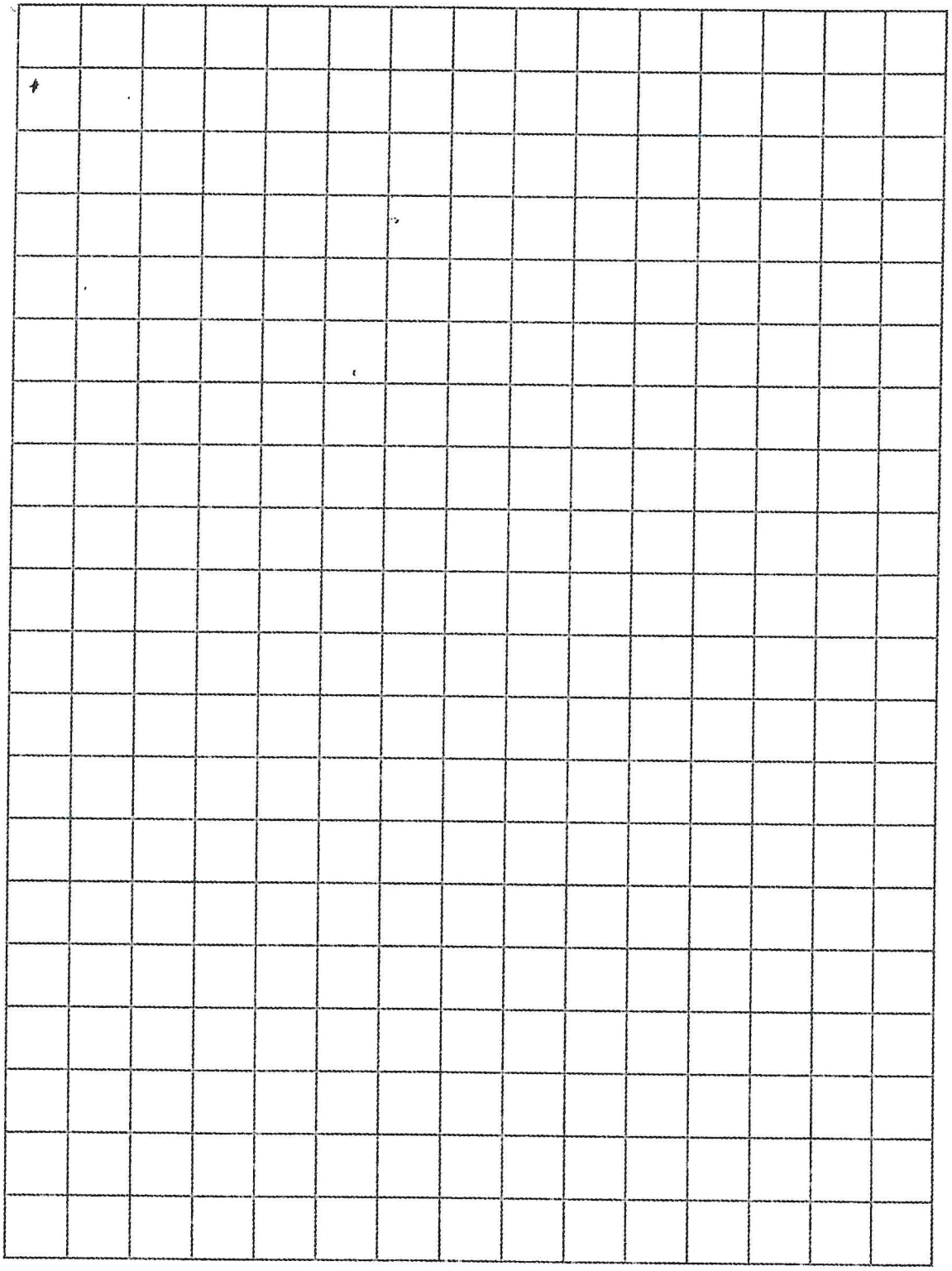
(d)



(e)



4 Draw 5 different trapeziums on the grid below.

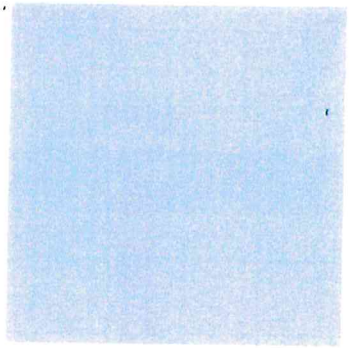


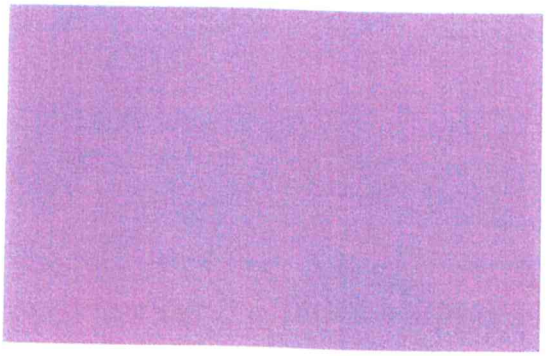
Wednesday

Identifying Symmetrical Figures

Lesson 5

In Focus



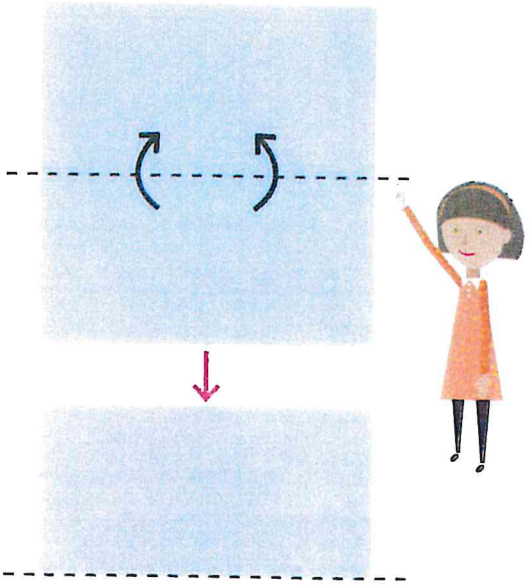


Is it possible to fold a square or a rectangle in half...

so that one half falls exactly on the other half?

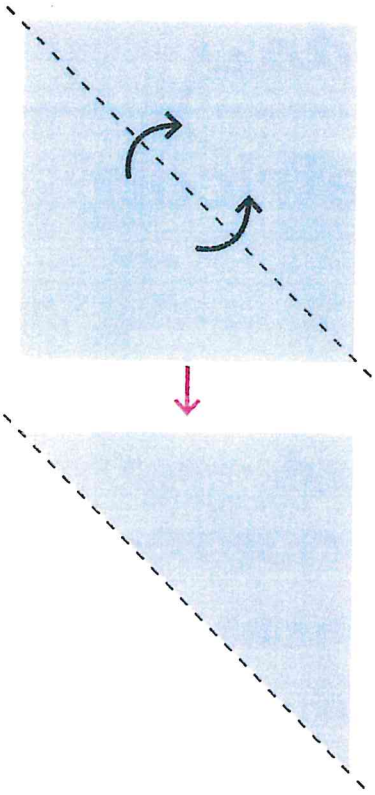
Let's Learn

1  did this.



This is the folding line.

2  did this.



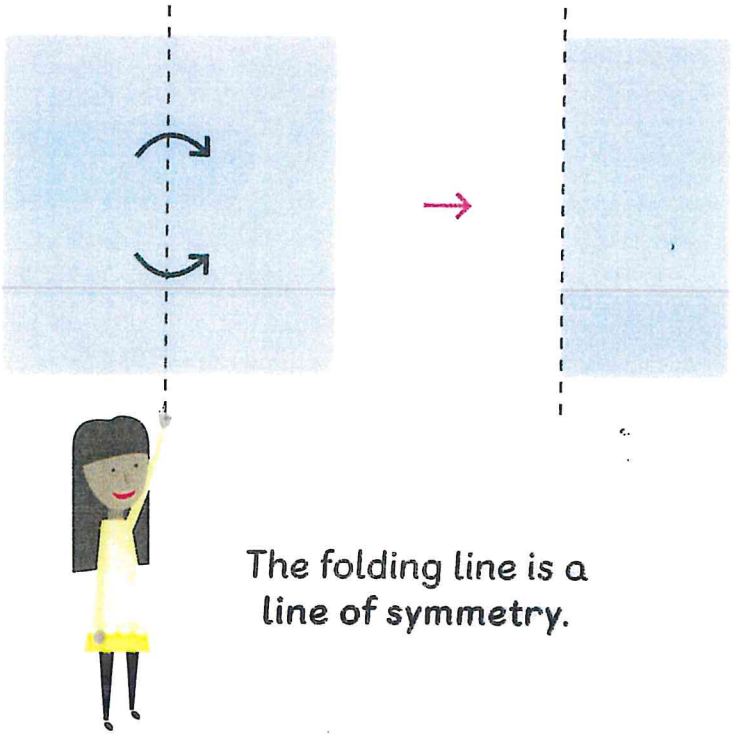
This is the folding line.

The two halves are identical.

A square is symmetrical.

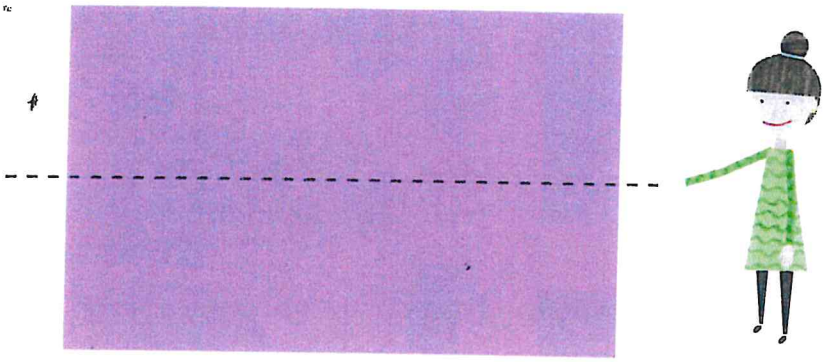
Are there more folding lines for the square?

3  did this.



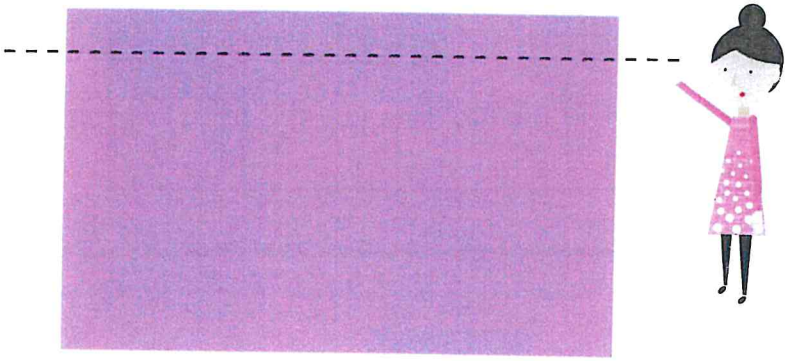
The folding line is a **line of symmetry.**

4  did this.



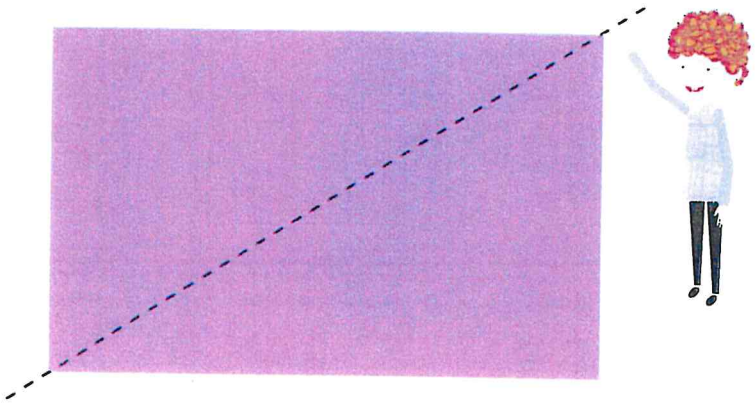
Is this a line of symmetry?

5  did this.



This is not a line of symmetry. Why not?

6  did this.



Is this a line of symmetry?

Activity Time

Work in groups of 3 or 4.

What you need:

① Cut out different shapes from  .

② Try to fold each shape into two halves so that one half fits exactly on top of the other.

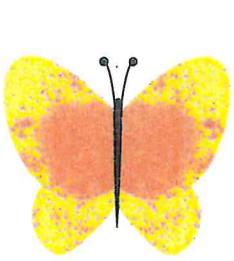
③ Draw the line of symmetry if the shape is symmetrical.

④ Put the shapes into two groups.

symmetrical figures	non-symmetrical figures

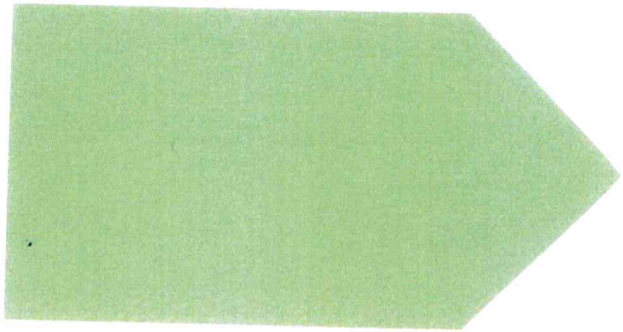
Guided Practice

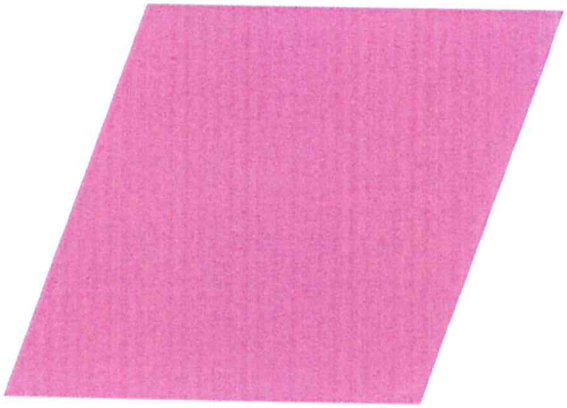
1 Which of the following are symmetrical?

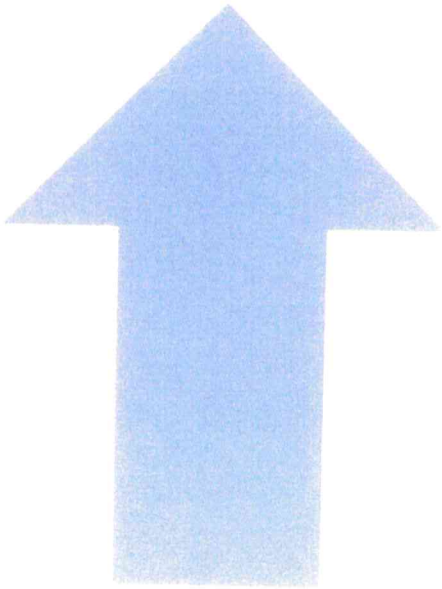




2 Show a line of symmetry in each figure.







Complete Worksheet **5** – Page **133**

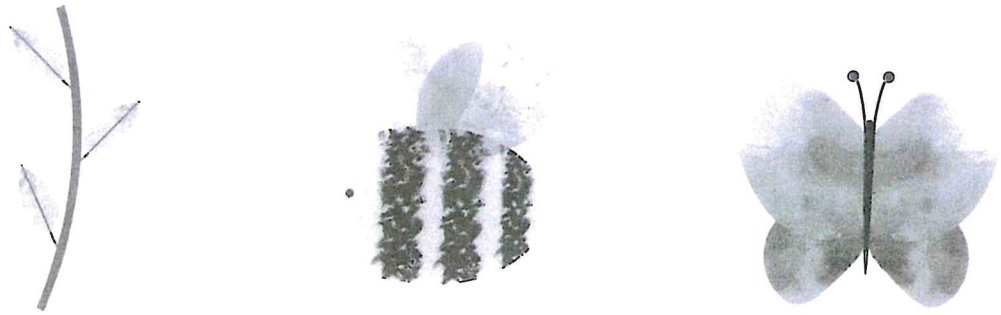
Name: _____ Class: _____ Date: _____

Worksheet 5

Identifying Symmetrical Figures

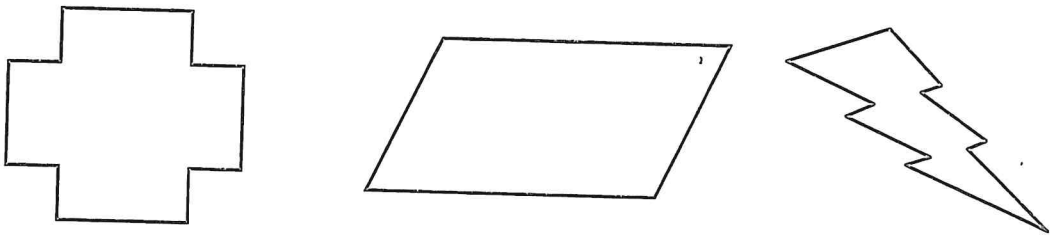
1 Circle the symmetric figures.

(a)

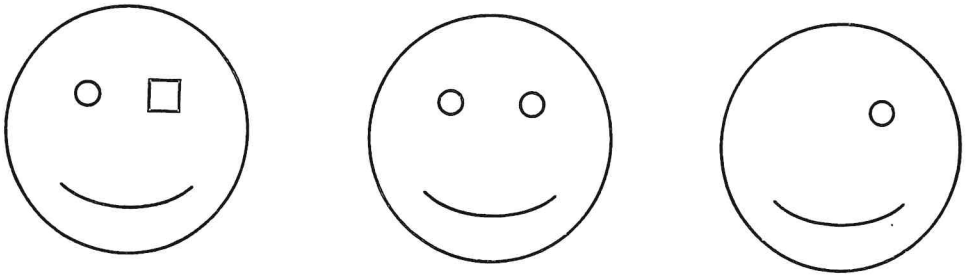


(b)

(c)



(d)



All sorts of triangles

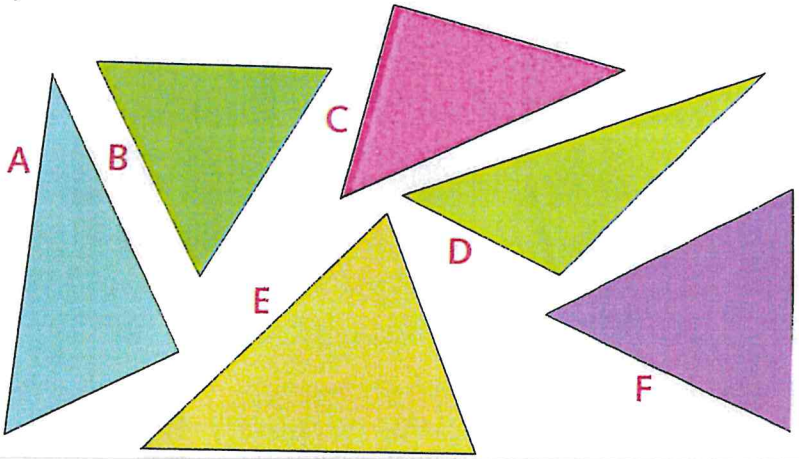
Use properties and sizes to compare and classify triangles

allenges
1, 2

Measure the sides of each triangle. Copy and complete the table by writing the letter of each triangle in the correct place.

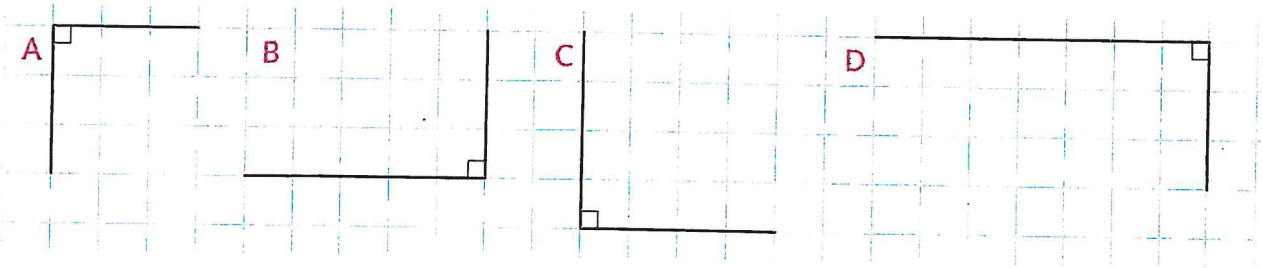
You will need:
- ruler

Equilateral Three sides equal	
Isosceles Two sides equal	
Scalene No sides equal	



llenge
2

1 Copy these right angles on to squared paper.



2 Draw one more line to make a right-angled triangle.

3 Write the letters of the triangles which are right-angled and then the letters of the triangles that are isosceles.

You will need:
- squared paper
- ruler

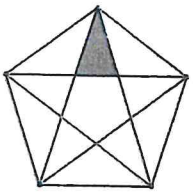
enge

How many different isosceles triangles can you find in a regular pentagon? Investigate.

Use Resource 54: Pentagons. For each pentagon:

a draw the diagonals with your ruler

b find an isosceles triangle and colour it in



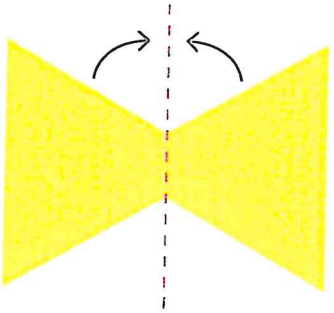
You will need:
- Resource 54: Pentagons
- ruler
- coloured pencil

Thursday 28/1

Drawing Lines of Symmetry

Lesson 6

In Focus

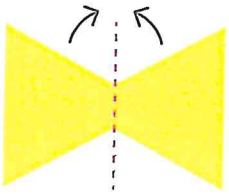


Does this figure have lines of symmetry?

How many?

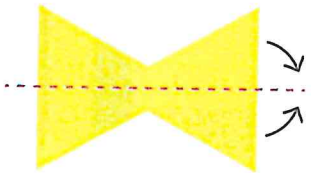
Let's Learn

1  drew this line.



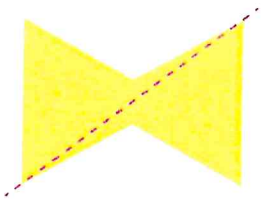
The two halves match up exactly.

2  drew this line.



The top half is a reflection of the bottom half. The two halves are reflections of each other along the line of symmetry.

3  drew this line.



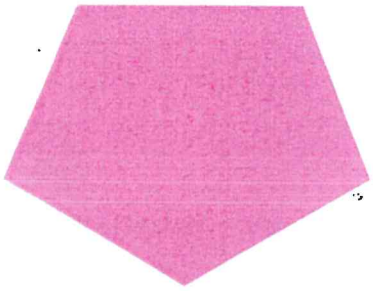
How many lines of symmetry does have?

Why is this not a line of symmetry?

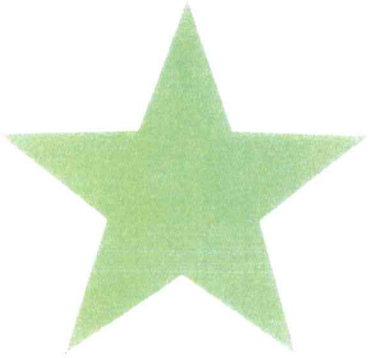
Guided Practice

1 Find a line of symmetry in each figure.

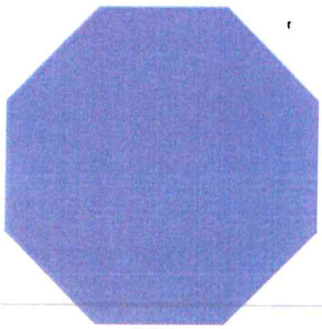
(a)



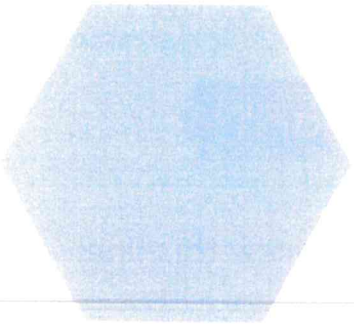
(b)



(c)

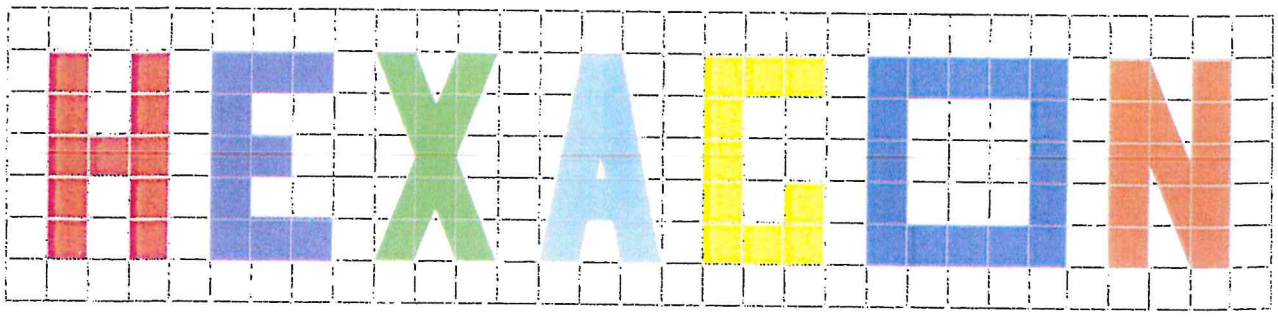


(d)



Can you find how many lines of symmetry each figure has?

2



(a) Which letters have 1 line of symmetry?

(b) Which letters have 2 lines of symmetry?

(c) Which letters have more than 2 lines of symmetry?

(d) Which letters have no lines of symmetry?

Complete Worksheet **6** – Page **134 - 137**

Name: _____ Class: _____ Date: _____

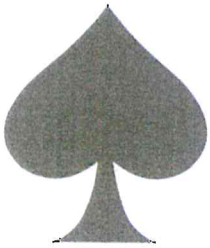
Worksheet 6

Drawing Lines of Symmetry

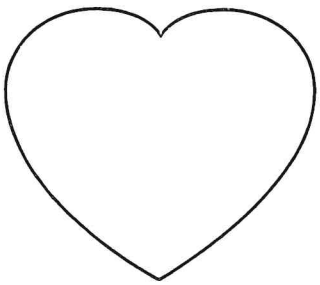
1 Draw the line of symmetry in each figure.

(a)

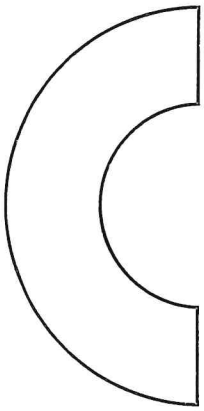
(b)



(c)

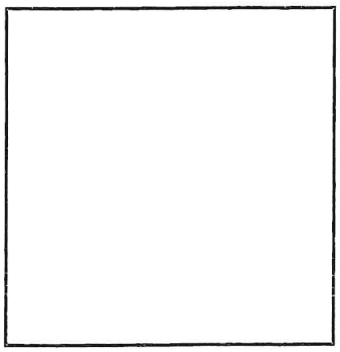


(d)

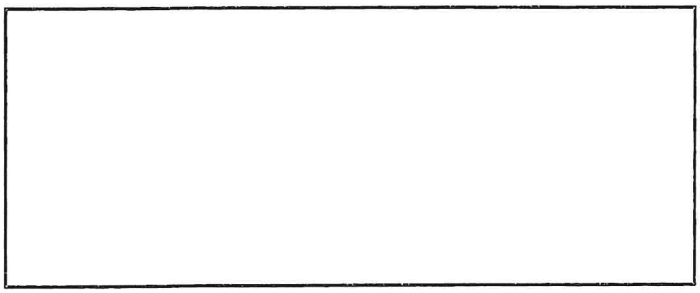


2 Draw one line of symmetry in each figure.

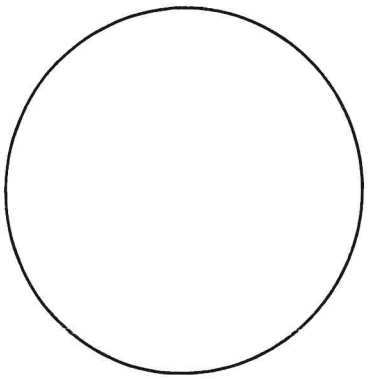
(a)



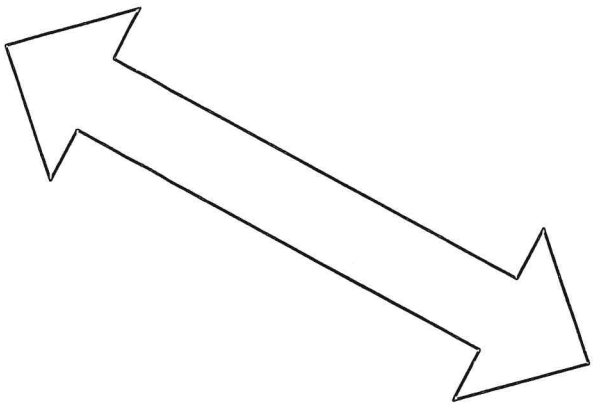
(b)



(c)

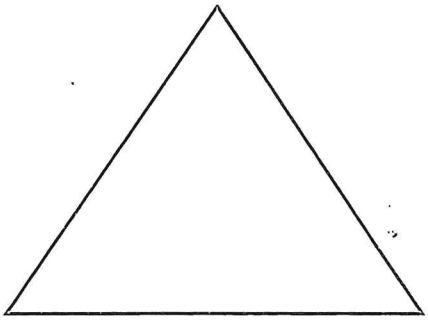


(d)

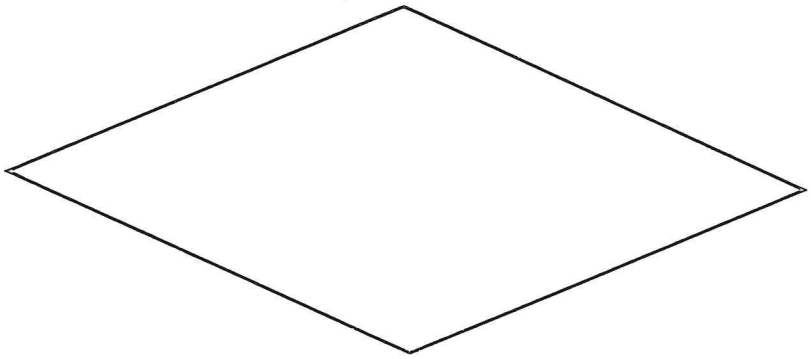


3 Draw all the lines of symmetry in each figure.

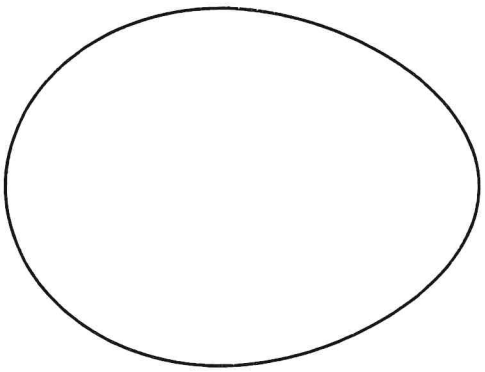
(a)



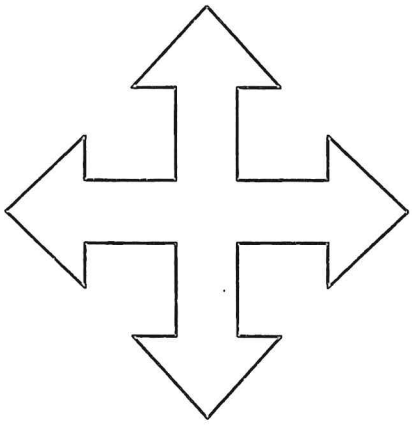
(b)



(c)



(d)



Parallelogram and rhombus

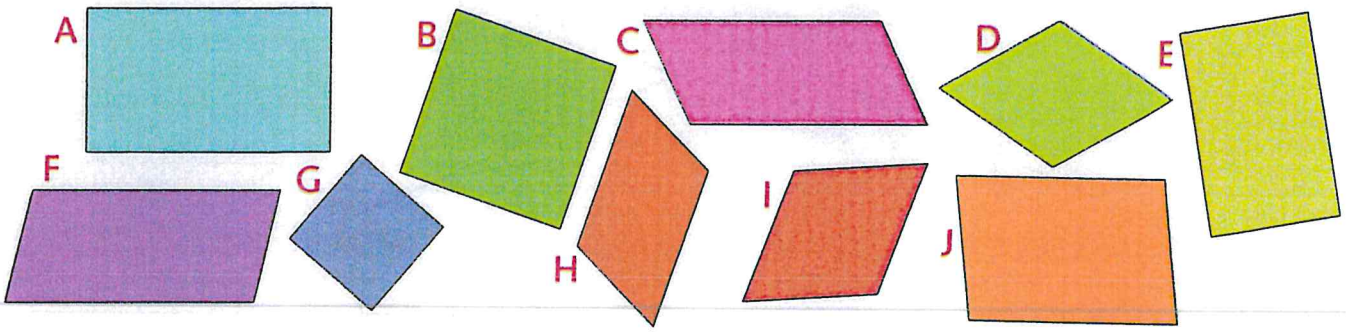
Use properties and sizes to compare and classify parallelograms and rhombuses

Challenge 1

Copy and complete the table, putting the letter of each shape in the correct column.

You will need:
- ruler

Square	Rectangle	Rhombus	Parallelogram
	A,		



Challenge 2

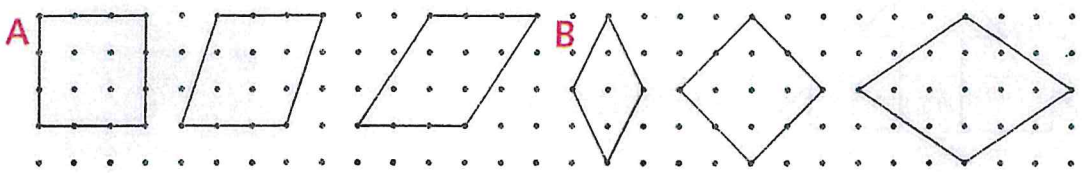
Copy and complete the table. Write ✓ for yes and ✗ for no.

Quadrilateral	Opposite sides equal	Opposite sides parallel	Opposite angles equal	All sides equal	Four right angles
Square					
Rectangle					
Parallelogram					
Rhombus					

Challenge 3

1. Copy these quadrilaterals on to 1 cm square dot paper.

You will need:
- 1 cm square dot paper
- ruler



2. Draw the next two shapes in each sequence.

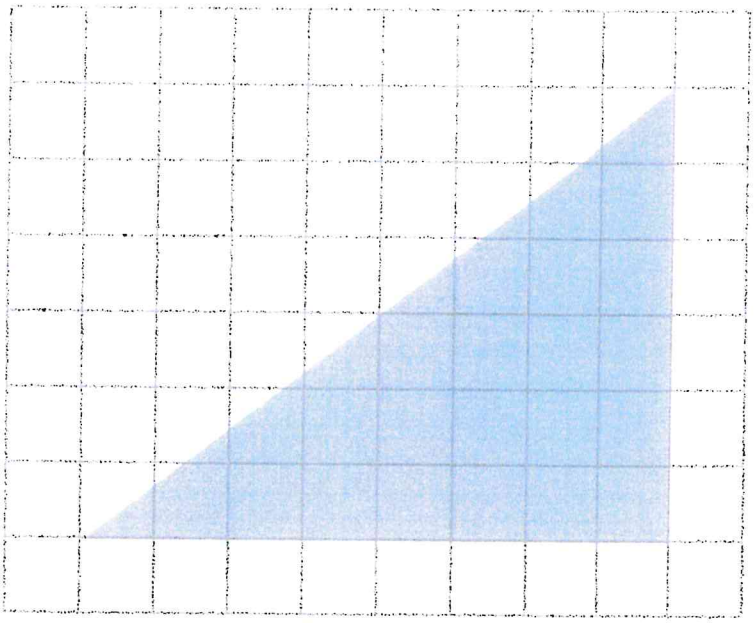
3. Check each sequence of five quadrilaterals for line symmetry. Write what you notice.

Friday

Completing Symmetrical Figures

Lesson 7

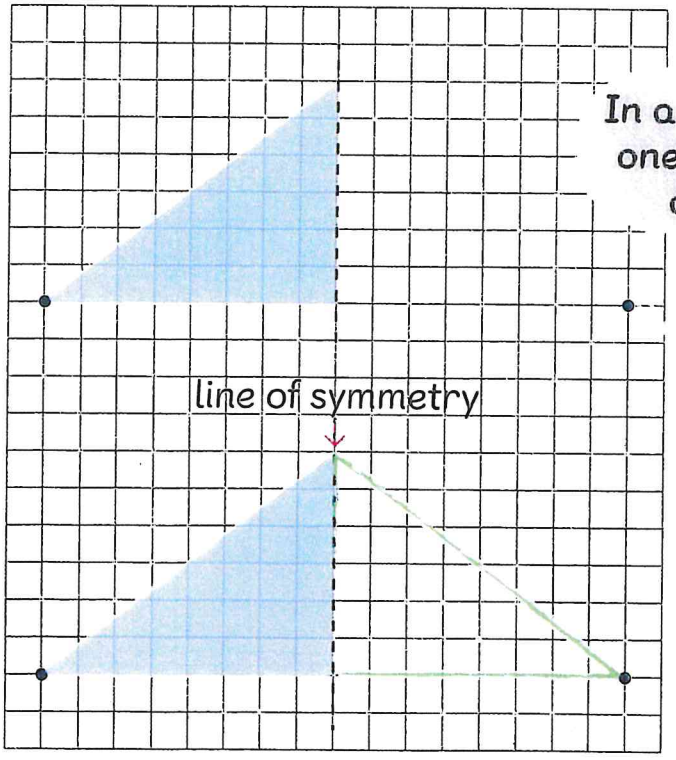
In Focus



This is one half of a symmetric figure. What does the complete figure look like?

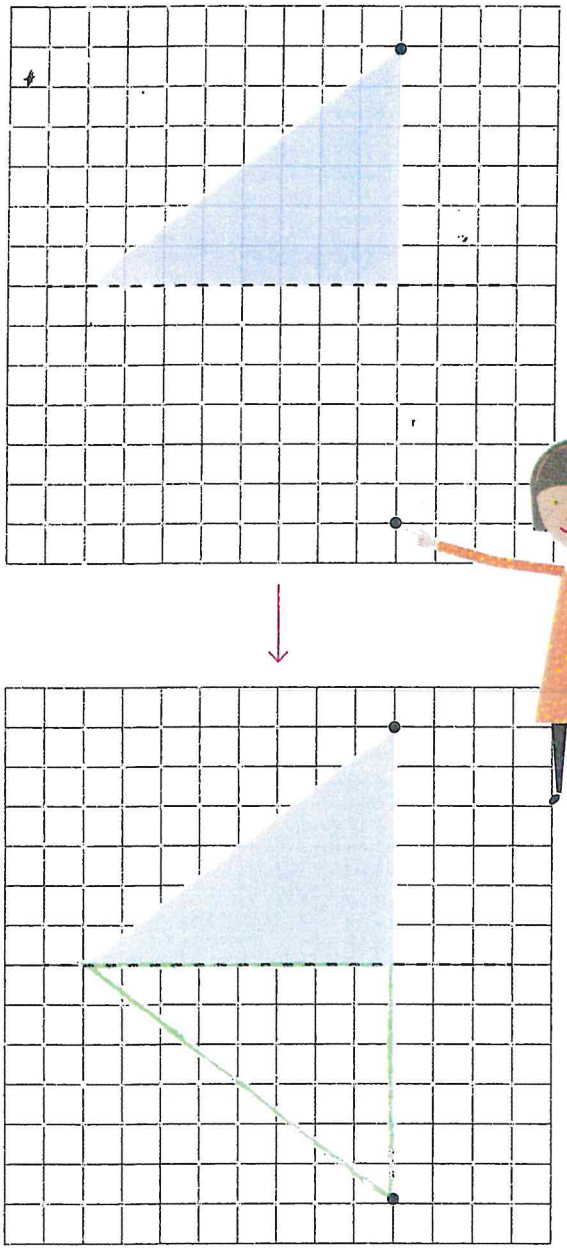
Let's Learn

1  thinks that this is the line of symmetry.



In a symmetrical figure, one half is a reflection of the other half.

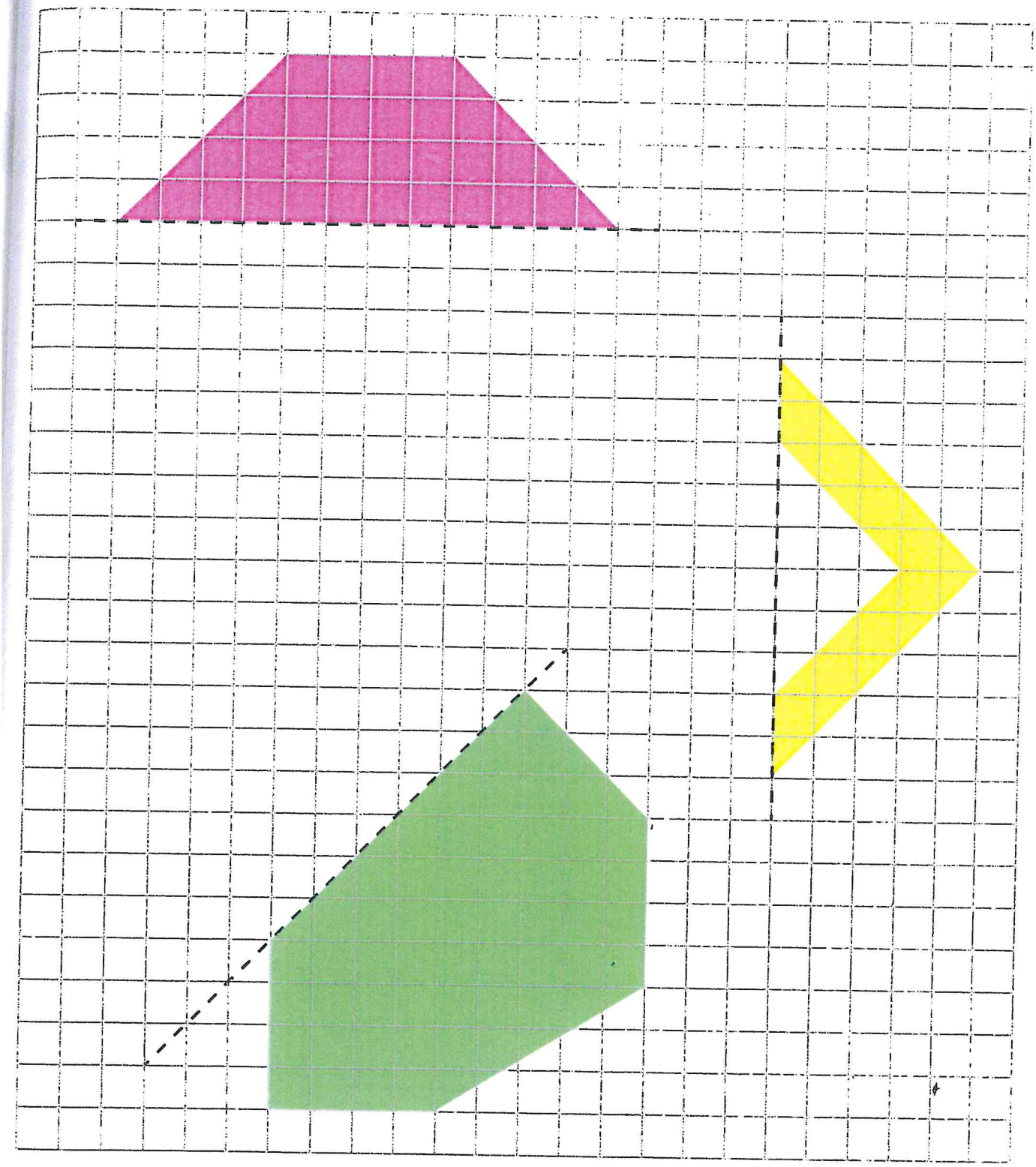
2  thinks that this is the line of symmetry.



Mark a point here.

Guided Practice

Complete each symmetrical figure.



Complete Worksheet **7** – Page **138 - 140**

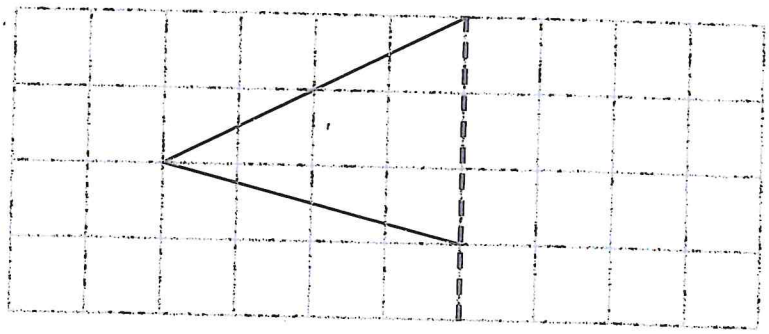
Name: _____ Class: _____ Date: _____

Worksheet 7

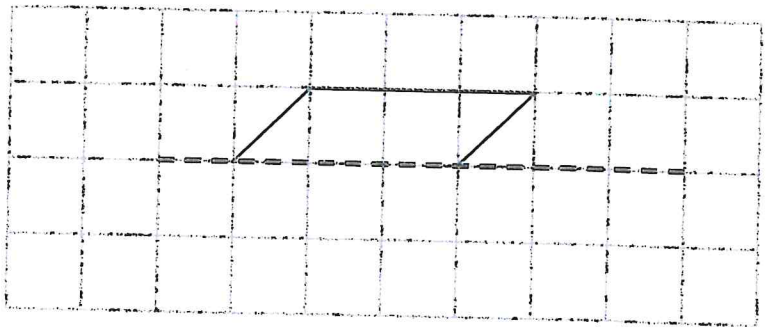
Completing Symmetrical Figures

1 Each dotted line represents a line of symmetry of the completed figure. Complete each figure.

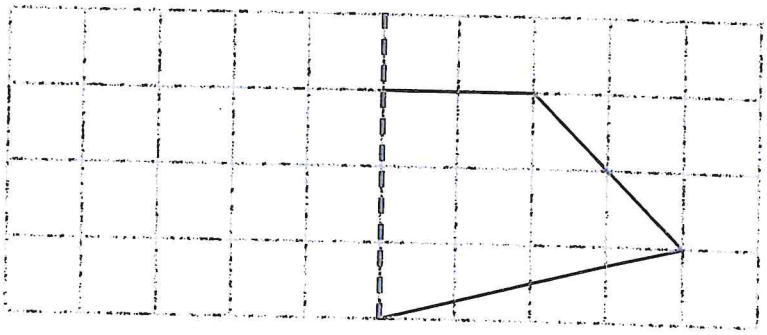
(a)



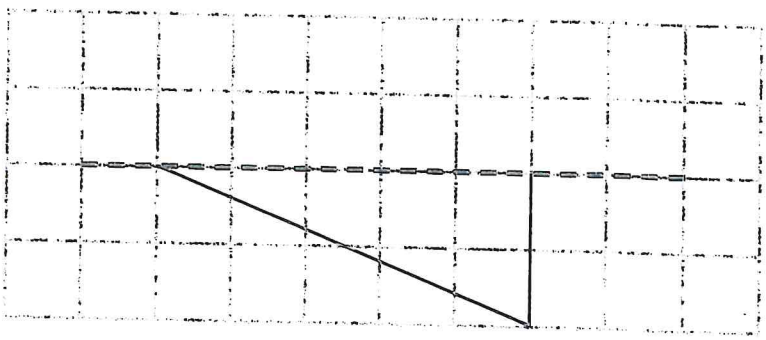
(b)



(c)

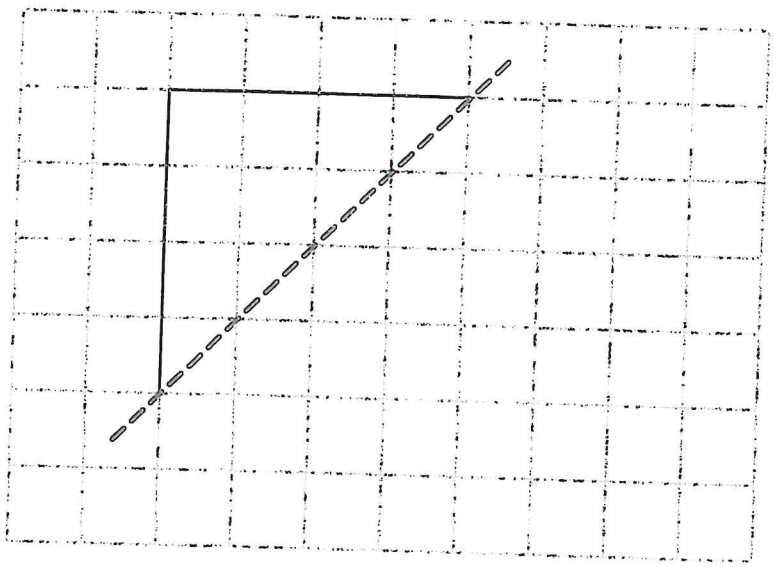


(d)

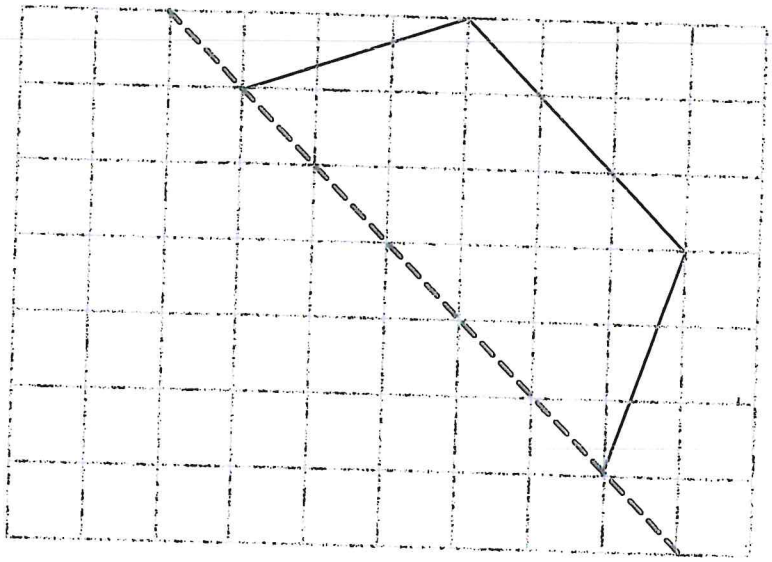


2 The dotted lines are lines of symmetry.
Complete each figure.

(a)

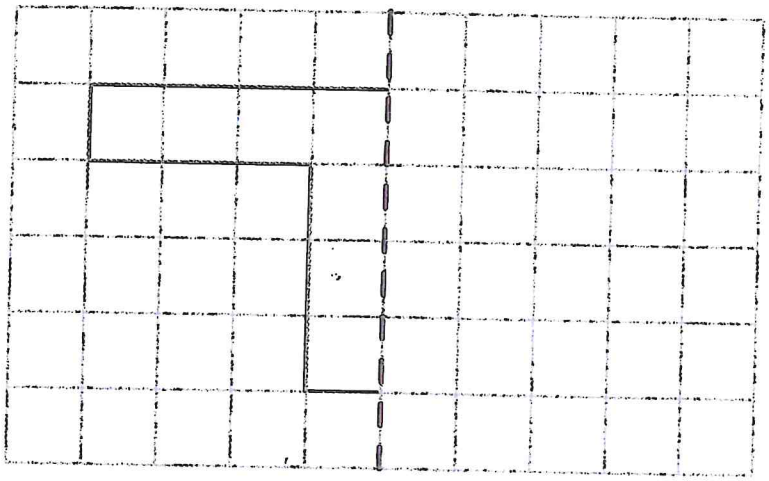


(b)

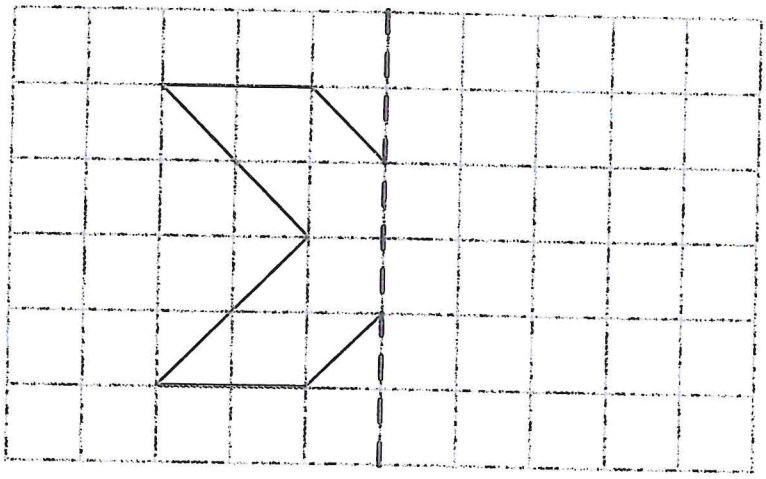


3 Complete each figure to make the dotted line a line of symmetry.

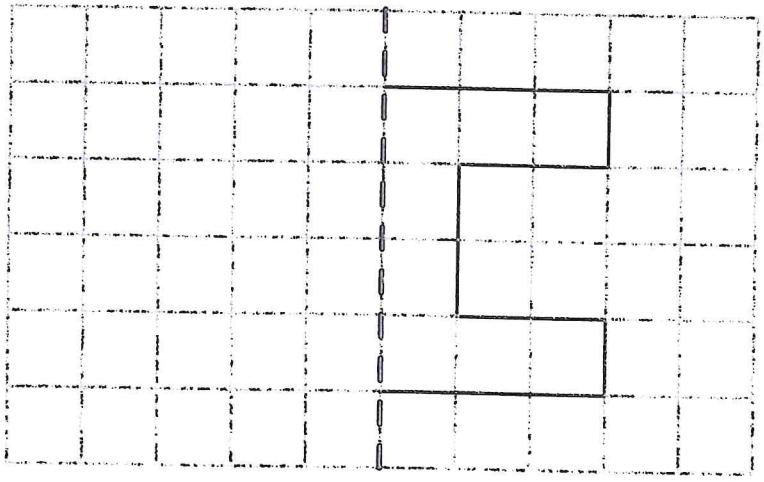
(a)



(b)



(c)



Symmetry in 2-D shapes

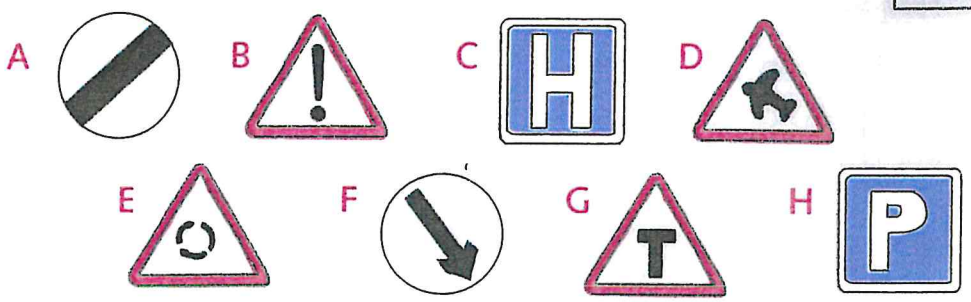
Identify lines of symmetry in 2-D shapes

You will need:
- mirror

Challenge 1

Place your mirror on each road sign in turn to check for lines of symmetry. Copy and complete the table.

Lines of symmetry	Road sign
None	
1	
More than 1	

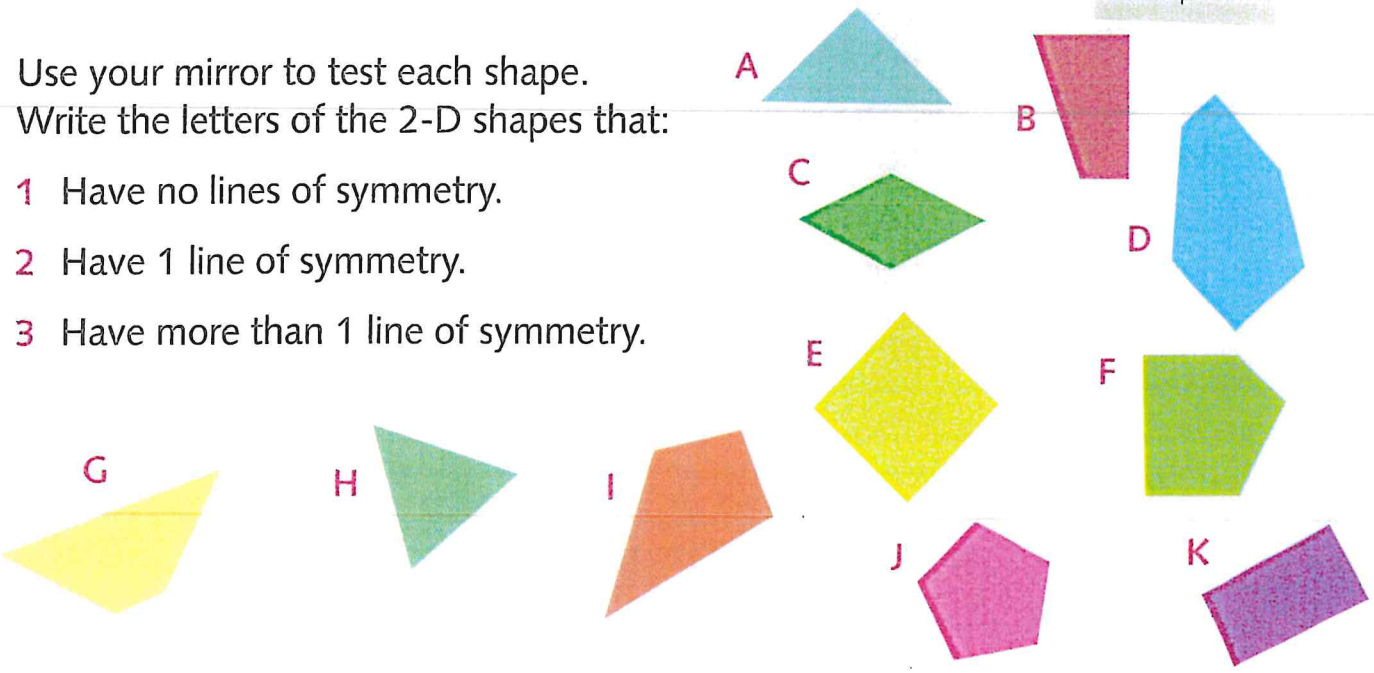


Example

Challenge 2

Use your mirror to test each shape.
Write the letters of the 2-D shapes that:

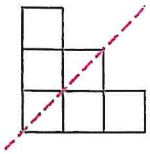
1. Have no lines of symmetry.
2. Have 1 line of symmetry.
3. Have more than 1 line of symmetry.



Challenge 3

How many different symmetrical shapes can you make using six interlocking squares each time?

1. Draw each shape you make on squared paper.
2. Mark the line or lines of symmetry on each shape with a dotted red line.



You will need:
- six interlocking squares in the same colour
- squared paper
- ruler
- red pencil