Thursday Maths

L.O. To recognise parallel and perpendicular lines

Mathematical Talk

Where might you see sets of parallel lines in the environment?

Can you see sets of parallel and perpendicular lines around the classroom?

Which shapes have only parallel lines?
Which shapes have perpendicular lines?
Which shapes have both parallel and perpendicular lines?
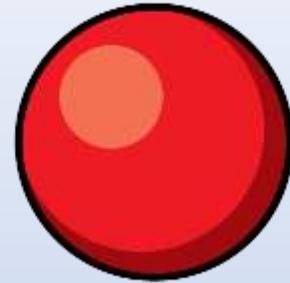
Flashback: How much can you remember?

1) Which is largest, an obtuse angle, a right angle or an acute angle?

2) A 90 minute race starts at 9:08 am. What time does it end?

3) What time is 7 minutes earlier that 3:00 pm?

4) The blue bar is ☐ times longer than the red bar.
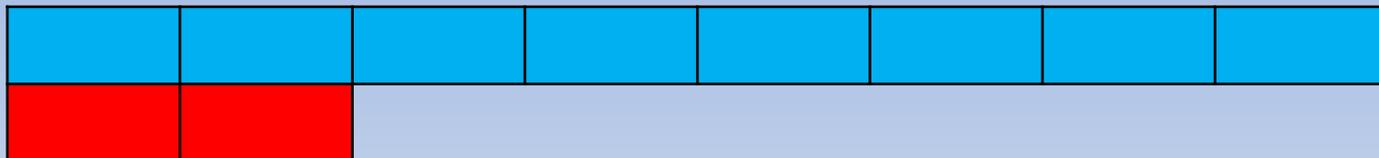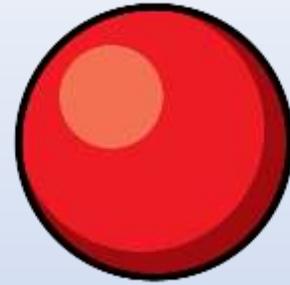
Flashback: Answers

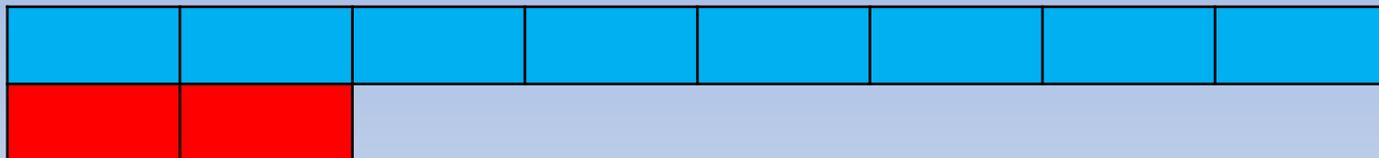1) Which is largest, an obtuse angle, a right angle or an acute angle?

An obtuse angle

2) A 90 minute race starts at 9:08 am.   10:38 am

What time does it end?

3) What time is 7 minutes earlier that 3:00 pm?   2:53 pm

4) The blue bar is 4 times longer than the red bar.

Learn:

We see lines everywhere around us all the time, for example on buildings, books, televisions, photo frames, roads etc.

We learnt how to identify some different types of lines in yesterday's lesson and today we are going to look more closely at identifying **parallel** lines and **perpendicular** lines in shapes.

Watch this video https://vimeo.com/430337089

And then watch three shapes take part in a race
https://www.bbc.co.uk/bitesize/topics/zb6tyrd/articles/zp327hv

Parallel lines are two lines that are always the same distance apart and never meet, just like railway tracks. To show that two lines are parallel, you draw matching arrows on each line facing the same direction.
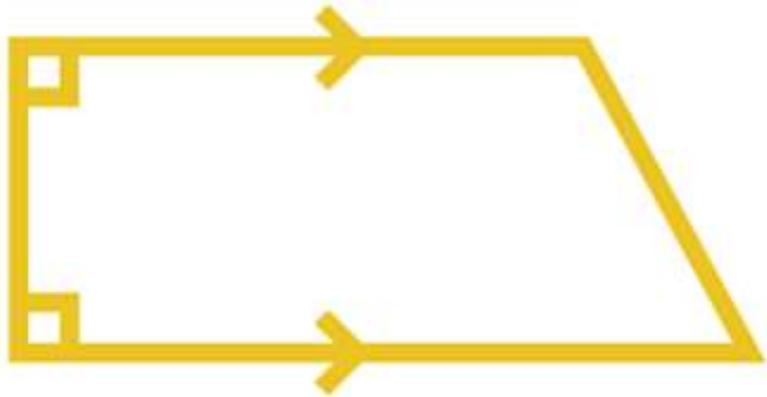

Perpendicular lines are lines that meet at a right angle (90°), like a corner of a room or the edge of a book. To show that two lines are perpendicular, you draw the right-angle sign in the corner where the two lines meet.

Example 1:

Look at the **trapezium** below.

The top and bottom lines are parallel because they will never meet and will stay the same distance apart, no matter how long the lines go on for!

The parallel lines have been marked with matching arrows.

The trapezium also has perpendicular lines, which have formed two right angles. They are marked with the small square symbol in the corners.

Example 2:

This **parallelogram** has no right angles so no perpendicular lines, but it does have two sets of parallel lines.
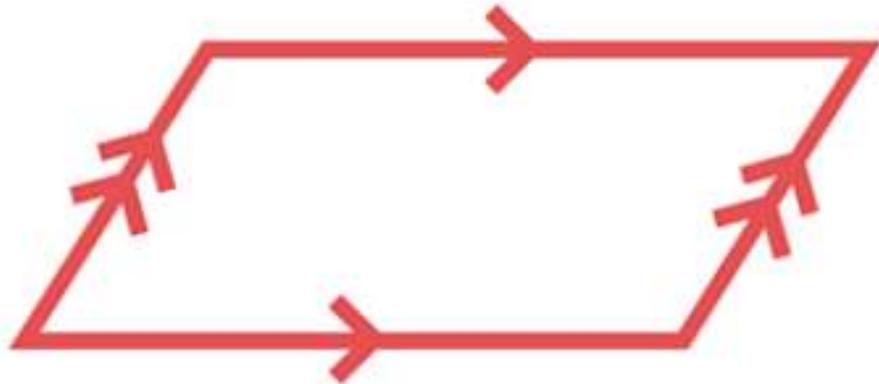
The two sets of matching arrows show you which lines are parallel.

How many parallel and perpendicular lines can you see around your house?

Your task:

1) Complete the sentences:

Straight lines that never meet and stay the same distance apart are called _____ lines.

Straight lines which meet at a right angle are called _____ lines.

2) Write the number of pairs of parallel and perpendicular lines you can see in each shape.
Mark the right angles for the perpendicular lines.

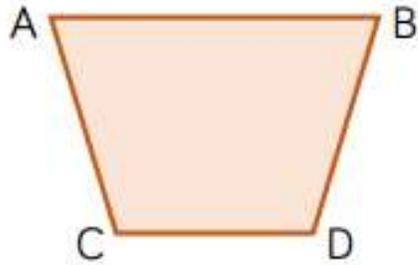|		
pairs of parallel lines: _____	pairs of parallel lines: _____	pairs of parallel lines: _____
pairs of perpendicular lines: _____	pairs of perpendicular lines: _____	pairs of perpendicular lines: _____

Challenges:

1)

True or False?

A ————— B

C —— D

Line AB is parallel to line CD.
Line AC is parallel to line BD.
Line AC is perpendicular to line CD.

Redraw the shape so that line BD is perpendicular to line CD.

2)

These lines are NOT parallel.

Convince me.

3)

Mark 3 sets of parallel lines and 3 sets of perpendicular lines in this flag.

Design your own flag containing parallel and perpendicular lines.

Answers:

1) Complete the sentences:

Straight lines that never meet and stay the same distance apart are called **parallel** lines.

Straight lines which meet at a right angle are called **perpendicular** lines.

2) Write the number of pairs of parallel and perpendicular lines you can see in each shape.

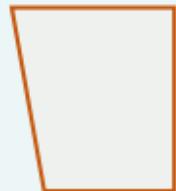| pairs of parallel lines: *0*	pairs of parallel lines: *2*	pairs of parallel lines: *6*
pairs of perpendicular lines: *1*	pairs of perpendicular lines: *4*	pairs of perpendicular lines: *6*

Challenge answers:

True
False
False

Children can draw and continue the lines to show that they will eventually meet so are not parallel.

For example.