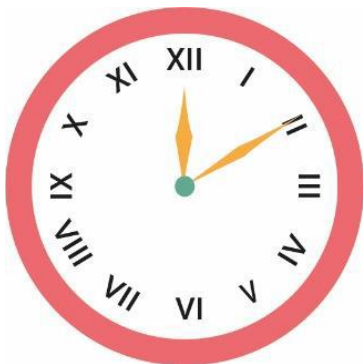


## Maths learning for 2 weeks:

Monday 1<sup>st</sup> June:

### **Roman numerals to 20**

Display an image of a clock with Roman numerals to begin a discussion.



Explain that over thousands of years, many different number systems have been used. The numbers we use today are based upon a Hindu-Arabic system and this is now the most widely used system in the world. Although these numbers are used the vast majority of the time, Roman numerals are sometimes used. Some examples might include:

- On analogue clocks.
- When discussing queens and kings - for example, Queen Elizabeth II.
- To show the year - for example, 2012 was MMXII.

Use discussion to cover the following points:

- I = 1, II = 2, III = 3,
- 5 = V which is followed by VI = 6, VII = 7, VIII = 8
- 4 and 9 do not follow the same pattern as 1 to 3 and 6 to 8.

Together, write numbers to 20 using Roman numerals and make the links to Roman numerals I to X.

Complete the activity sheet labelled roman numerals to 20.

Tuesday 2<sup>nd</sup> June:

Watch below video clip

[https://www.youtube.com/watch?v=GgG3iyV1UZg&feature=emb\\_logo](https://www.youtube.com/watch?v=GgG3iyV1UZg&feature=emb_logo)

### **Roman numerals to 100**

The number system we use is based on place value. The value of the digit is determined by its place and zero can be used as a place holder. For instance, 100 is larger than 10 but smaller than 1000. All of these numbers use the digits 1 and 0 but their place determines the size of the number. Romans, however, did not use place value or zero and instead used different letters to represent larger numbers.

**V = 5 X = 10 L = 50 C =100**

First, show how to write multiples of 10 starting from 10:

**X = 10 XX= 20 XXX = 30**

Ask child to predict how 40 and 90 are represented based upon how 4 and 9 are written.

Use questioning to help construct a number track for multiples of 10 to 100:

X	XX	XXX	XL	L	LX	LXX	LXXX	XC	C
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Ensure pupils are secure in writing multiples of 10 before moving onto other two-digit numbers.

Model that two-digit numbers are created by combining numbers.

For example:

- 50 is written as L and 5 is written as V so 55 is written as LV.
- 20 is written as XX and 9 is written as IX so 29 is written as XXIX.
- 80 is written as LXXX and 7 is written as VII so 87 is written as LXXXVII.

Complete activity sheet labelled Roman numbers to 100

Extension/challenge activity:

A palindromic number is a number that is the same when written forwards or backwards.

For example, 77, 2002 and 101.

Find at least six palindromic Roman numerals and put them in order from smallest to largest.

What do you notice about the numbers?

Wednesday 3<sup>rd</sup> June:

### **Reasoning with Roman numerals**

Introduce this problem:

*In the number system we use, if a whole number has more digits then it has a greater value.*

*Is this always, sometimes or never true for numbers written in Roman numerals?*

Discuss the concept that in the number system we use, whole numbers that have more digits have a greater magnitude. For example, any three-digit whole number is larger than all two-digit numbers. However, with Roman numerals, the letter string needed to write the number is not an indicator of its size. For example, XXXVIII (38) is a smaller number than L (50).

## Complete reasoning with roman numerals activity sheet

### Extension/challenge activity

One of the oldest number systems in the world originated in China. In this system, sticks were laid out to represent calculations.

I	II	III	IIII	IIII	T	TT	TTT	TTTT
1	2	3	4	5	6	7	8	9
—	=	≡	≡	≡	⊥	⊥	⊥	⊥
10	20	30	40	50	60	70	80	90

Compare the numbers we use to the Roman and ancient Chinese systems.

What is the same? What is different?

Thursday 4<sup>th</sup> June:

Talk about where we see negative numbers e.g. lifts, temperature, goal difference, bank balance!!

Create a simple table to sort and record the numbers into positive and negative numbers found on handout negative numbers.

Talk about the context of the numbers, taking into account that positive numbers are numbers greater than zero and negative numbers are numbers less than zero. For example, discussion could include:

- Which day of the week is forecast to have the highest temperature?
- Which teams have the best and worst goal difference?
- Which season is likely to have negative temperatures?
- What do you think it means if you have a negative bank balance?

Friday 5<sup>th</sup> June:

<https://www.bbc.co.uk/bitesize/articles/zd7j2sg>

Visit the bbc bitesize challenge activities. There are 5 to do. They do get progressively harder!

Also complete the 4 digit number hunt sheet and the number riddles. Instructions for both activities are on the sheets

Monday 8<sup>th</sup> June:

Introduce child to the car park image on the handout labelled negative numbers in context

Use questioning to explore practical problems involving negative numbers:

- How many levels are there between the street and the restaurant levels?
- Ben was in the supermarket and went down 4 levels. Where did he end up?
- Ruth parked on level -3 and went to the cinema. How many levels did she travel in the lift?

Printed versions of the handout could be used to physically explore the difference between the positive and negative numbers by moving a counter between the values. For example, the difference between +4 and -2 is 6 'jumps' of the counter. Provide further exploration time by asking pupils to create their own questions and solve with a partner.

Make links between this context and more abstract calculations such as:

$$-5 + 2 = \square \quad -9 + 5 = \square \quad -5 + 3 = \square$$

Allow them to use a number line with positive and negative numbers to explore this new concept. This may also be presented vertically to link directly to the scale on a thermometer.

Complete the activity sheet labelled negative number word problems

Extension/challenge activity:

Get them to research temperatures around the world to find a range of positive and negative temperatures. Construct a table and bar graph to show the different temperatures.

What is the largest difference in temperature you can find?

Tuesday 9<sup>th</sup> June:

Use the handout describing triangles. It shows a range of triangles. Rehearse vocabulary to describe the sides and angles of the triangles and make comparisons, including:

- Whether the angles are greater than, smaller than or equal to a right angle.
- Whether the sides are equal in length or vary.
- Whether a triangle has a set of perpendicular lines.

[https://www.youtube.com/watch?v=l-7uh6tL4Ec&feature=emb\\_logo](https://www.youtube.com/watch?v=l-7uh6tL4Ec&feature=emb_logo)

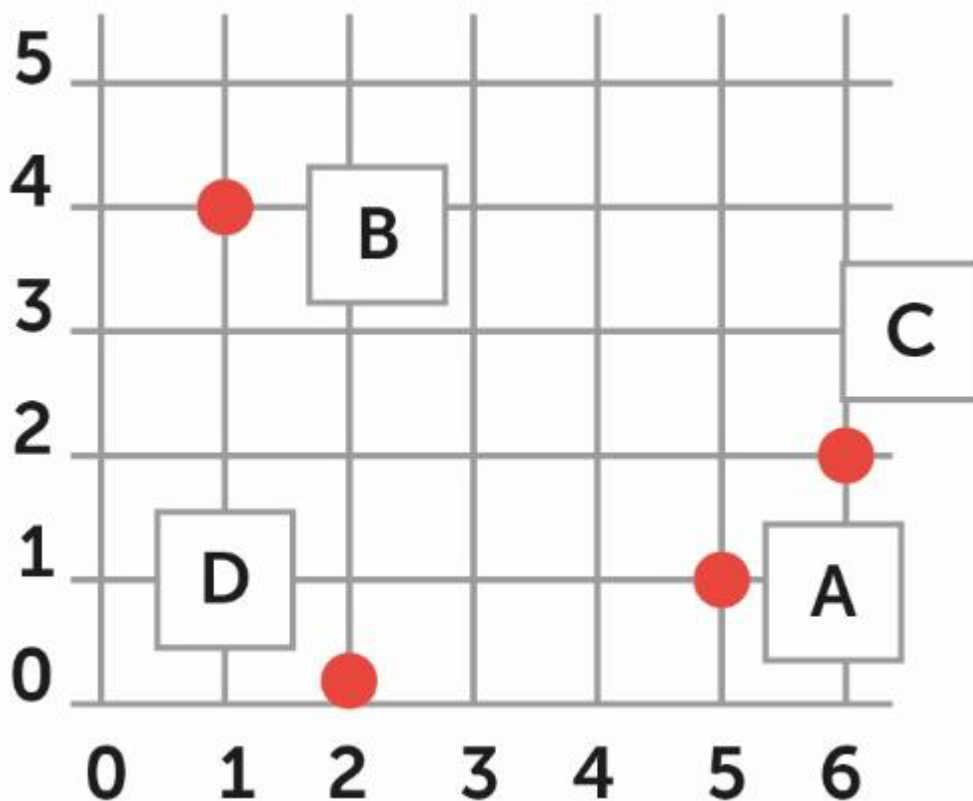
Watch the above clip that explains the different types of triangles.

Use the classifying triangles matching cards game

Wednesday 10<sup>th</sup> June:

Complete the pirate coordinates activity sheet.

Remind them that there is an x-axis (the horizontal plane) and a y-axis (the vertical plane). Coordinates are used to describe a position by describing how far a point is along the x-axis and up the y-axis from the point of origin (O).



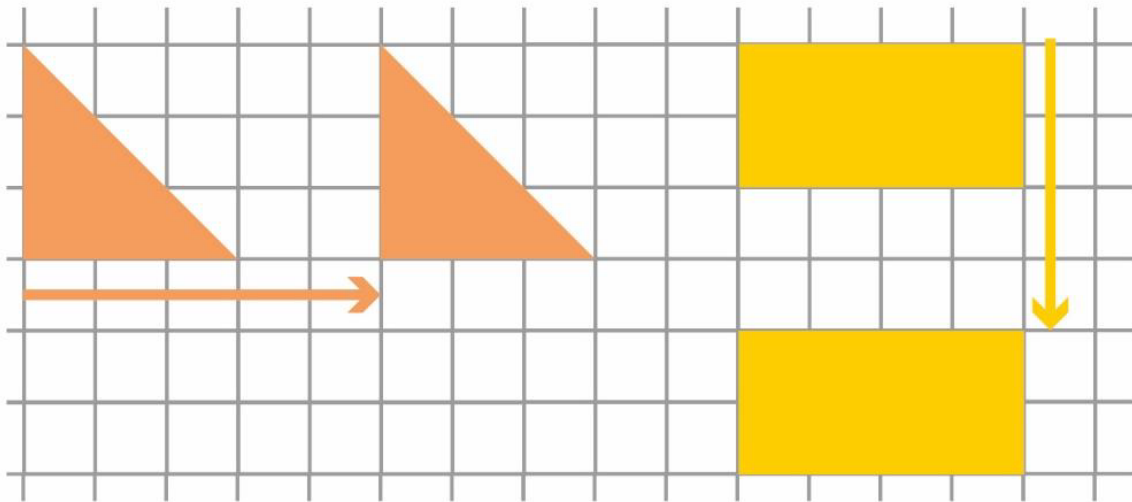
The first part of the coordinate describes the distance from the x-axis. Point A is 5 units along the x-axis and point B is 1 unit along the x-axis.

The second part of the coordinate describes the distance up the y-axis. Point A is 1 unit up the y-axis and point B is 4 units up the y-axis.

Thursday 11<sup>th</sup> June:

## **Describing movements between positions as translations**

Show them the below image:



Explain how to explain the movement of the shapes by describing how many units the shape has moved to the left / right or upwards / downwards. Ensure them to focus upon the change in the position of a point on the shape (e.g. vertex) to the new one. Not the distance between shapes.

Re-confirm that the shapes have **not**:

- changed size
- rotated
- been reflected in a line of symmetry.

This movement is called a translation.

They now need to use their skills by describing and then recording the translation of the shapes found on handout translation of shapes.



Friday 12<sup>th</sup> June:

[https://www.youtube.com/watch?time\\_continue=35&v=LyOjNIJ40lo&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=35&v=LyOjNIJ40lo&feature=emb_logo)

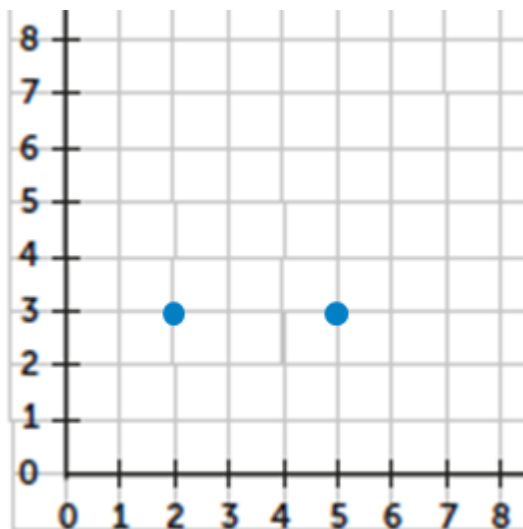
The clip about will remind the children about what a polygon is.

Use the handout labelled plotting points to create polygons.  
Follow the list of criteria to create the different polygons

Extension/challenge activity:

Find coordinates to create the following polygons which fulfil these multiple criteria:

- A quadrilateral with exactly two right angles with one side 5 units long
- A pentagon with two sets of parallel lines
- An octagon with a line of symmetry



Optional extra activities

Battleships activity sheet  
World Bee day