Here are your maths tasks for this week- please use the book provided to complete the tasks ☺ We normally do maths Monday-Thursday, with Friday being our day for Mathletics and Times table rockstars to consolidate other areas of learning. Please see the Times table sheet for suggested activities. I've attached an arithmetic paper for Friday to complete this week too ☺

Monday

This week, we will be looking at plotting points and creating shapes/translations and co-ordinates on a grid. Today, we will be looking at plotting points correctly on a grid. When we are plotting points, we need to remember that we go 'along the corridor and up the stairs'. This means we need to read the bottom numbers first (along the horizontal line) and then the numbers along the side (vertical line). See below:
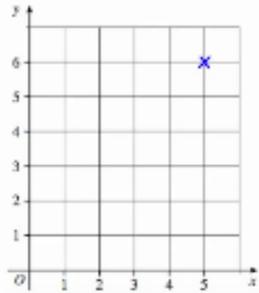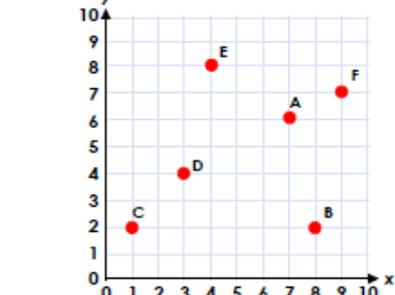
The cross on the grid here can be read by looking along the bottom numbers- which line is it within? Number '5'. Then, have a look along the vertical numbers- which line is it within? '6'. So the co-ordinates of the cross is (5,6)

Task

Using the information above, see if you can complete the tasks below:
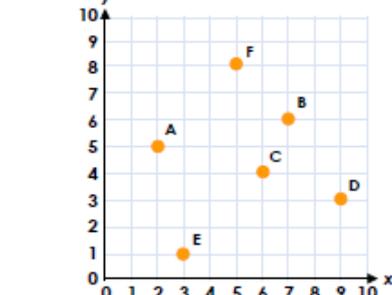
4a. Are the coordinates of each point correct?

A = (6, 7)   B = (8, 2)   C = (2, 1)
D = (4, 3)   E = (4, 8)   F = (9, 6)

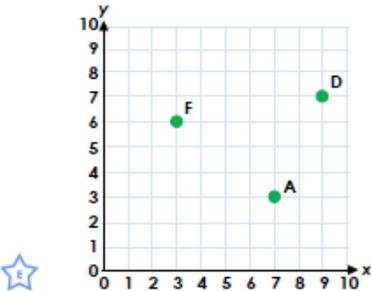**4b. Are the coordinates of each point correct?**

A = (2, 5)   B = (7, 6)   C = (4, 6)
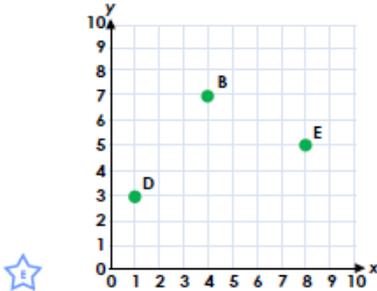D = (3, 9)   E = (3, 0)   F = (5, 8)

6a. Complete the coordinates below and plot any missing points on the grid.

A = (,) B = (2, 9)   C = (0, 5)
D = (,) E = (1, 4)   F = (,)

6b. Complete the coordinates below and plot any missing points on the grid.

A = (5, 4)   B = (,)   C = (2, 7)
D = (,)   E = (,)   F = (9, 1)

Challenge:

When you are plotting a point on a grid it does not matter whether you go up or across first as long as you do one number on each axis.
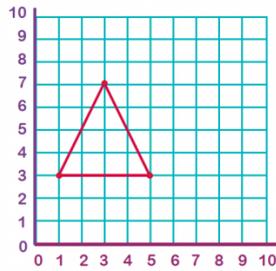
Arjun

Do you agree with Arjun?
Convince me.

Tuesday

Now that we know how to plot points on a grid, today we will be looking at plotting points and joining them together to create a polygon (shape with straight sides). To do this, we will need to plot a few different plots on one grid. See below for an example:

In this example, I have first plotted the co-ordinates (1,3) (5,3) and (3,7). I have plotted these using a small dot in that space or I could use a small cross. I then joined up the lines using a ruler to create a triangle.

Task

Use the information above to help you answer these questions below:
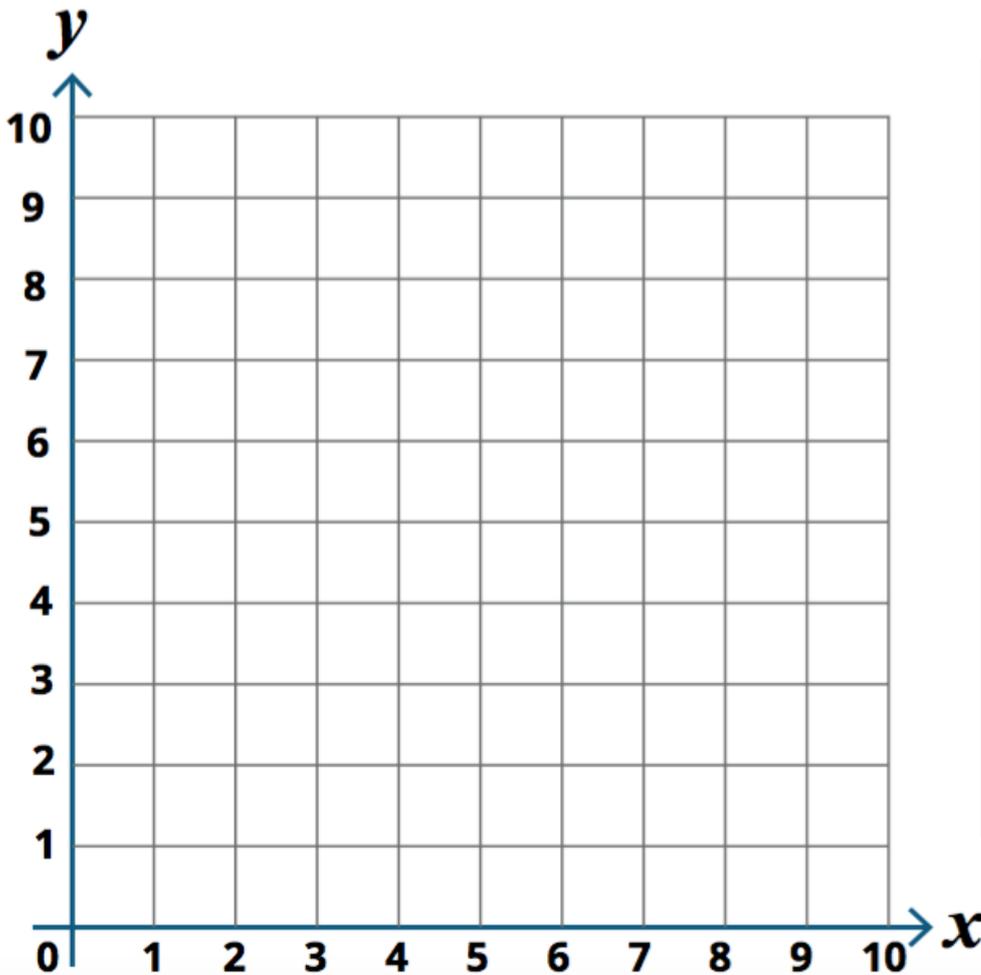
Plot these co-ordinates:

Polygon 1: (2,1) (3,3) (4,1)

Polygon 2: (1,5) (1,7) (3,7) (3,5)

Polygon 3: (6,1) (9,1) (9,3) (6,3)

Polygon 4: (3,10) (1,10) (3,8)

Polygon 5: (7,9) (5,7) (6,5) (8,5) (9,7)

- What polygons have you drawn?

Challenge: Always, Sometimes, Never.

The number of points plotted is the same number of vertices the shape has.

Wednesday

Today, we will be having a look at translating shapes. When we translate shapes, we need to ensure that we are only focusing our attention on one point to start with. It is this point that will help us to translate a shape as we can then start plotting the other points afterwards. See the example below:
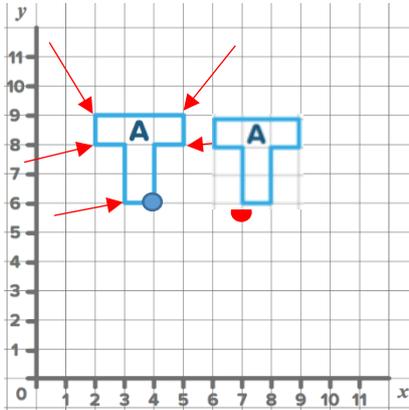

If we were to start on shape 'A' and we needed to translate (move) the shape 3 squares to the right, we would start at the blue circle point. Move this point 3 to the right and we would get to the red dot.

You then need to do this for all of the other points, counting along 3 points from where they are at currently. You can then draw around all of the dots to get the overall shape which is now shape B.
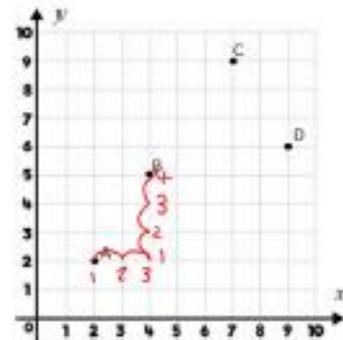
Task

Use the information from above and see if you can answer these questions below. Start back at the beginning shape A before completing each new polygon.
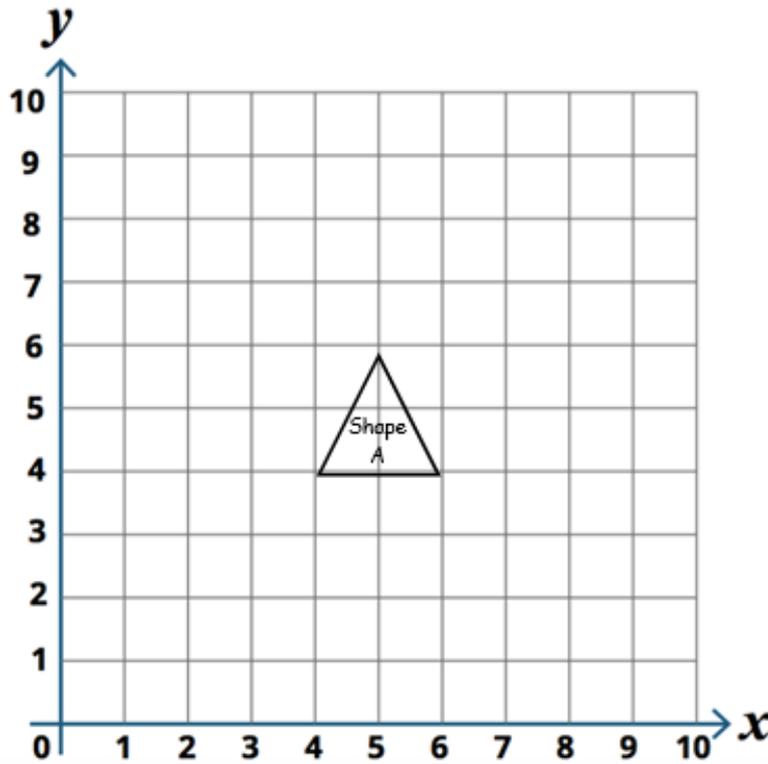
Challenge:

Justin has described the translation from A to B as 3 right and 4 up.

Can you explain his mistake?

1. Translate shape A, 2 squares right. Label it shape B.
2. Translate shape A, 4 squares left. Label it shape C.
3. Translate shape A, 3 squares down. Label it shape D.
4. Translate shape A, 3 squares up. Label it shape E.

Today, we will be continuing to focus on translating shapes. As yesterday, today we will be translating shapes by choosing a point each time and moving the shapes according to the instructions. If you still need help with this concept, here is a video to explain further: https://www.youtube.com/watch?v=KMvgm0l34js Today, we will be looking at translating across a few grids- this is exactly the same!! Please do not panic or worry- we just continue to do same as what we would on a single grid.
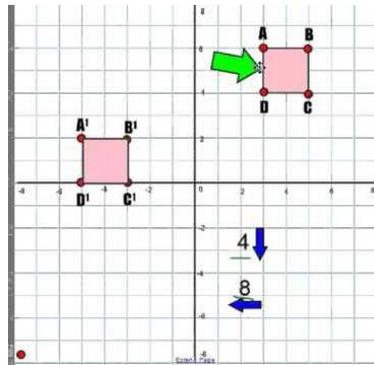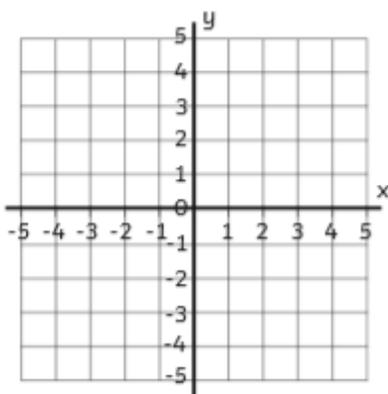

In this example, we are still using the corners to translate the shape, but we are moving across the quadrants (grids) to create the overall translation.

Task:

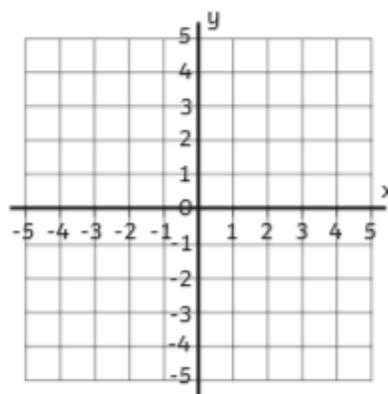Using the information above, see if you can complete these questions below:

Plot these co-ordinates to reveal a shape: (-3,-1), (-3,-2), (1,-1), (1,-2)

Translate the shape right 3, up 3.
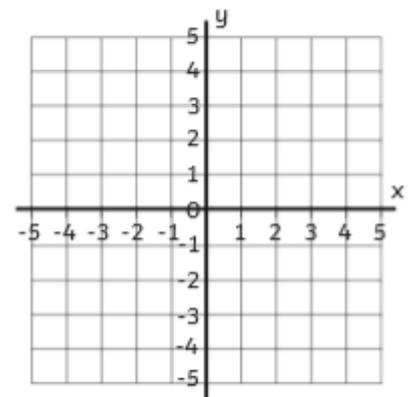
What are the co-ordinates of the new shape?

Plot these co-ordinates to reveal a shape: (2,1), (4,1), (0,-3), (0,-1)

Translate the shape left 4, up 1.

What are the co-ordinates of the new shape?

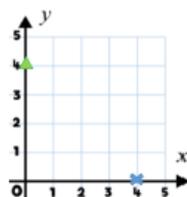Plot these co-ordinates to reveal a shape: (-2,4), (-4,-3), (0,-3)

Translate the shape right 4, down 2.

What are the co-ordinates of the new shape?

Challenge: ▲ to ✖ is 4 right and 4 down.

✖ to ▲ is 4 left and 4 up.

Can you plot other points where you travel the same left or right as you travel up or down?
What do you notice about the co-ordinates?

Friday

TT rockstars/Mathletics/Arithmetic test ☺ If you have completed all of the Mathletics activities which I have assigned, please choose on the homepage an activity which relates to the maths you have been doing this week.

Help for this week

If your child is really struggling with this week's work, try some of the games or techniques below to aid their understanding of what it means to plot points.

If it is possible, try to make a masking tape grid on a surface in your house (or out in the garden). Then get your child to label this with either chalk or some pieces of paper with the numbers on (the numbers should only go as far as the grid is). Then, play some games related to this, for example go from getting them to stand in certain plot points and say the co-ordinates they are at, to getting them to use string to join co-ordinates together to create shapes. If they then become comfortable when doing this, they could then start to move the shapes according to your instructions- can they move it 2 steps to the left? Up 3 steps?

Games relating to this week:

- Plotting and showing the co-ordinates: https://www.teacherled.com/iresources/coordinates/showthecoordinate/
- Plotting and showing the co-ordinates: https://mathsframe.co.uk/en/resources/resource/469/Coordinates-Alien-Attack
- Co-ordinates bingo: https://garyhall.org.uk/gordons/swf/Bingo_-_co-ordinates_v2.swf
- Extra work on plotting shapes: https://garyhall.org.uk/maths-objectives/143/plot-specified-points-and-draw-sides-to-complete-a-given-polygon
- Translations: https://garyhall.org.uk/maths-objectives/142/describe-movements-between-positions-as-translations-of-a-given-unit-to-the-left-right-and-up-down

If you need any extra support, please email me on michaelsyddallyear4@gmail.com and I will help ☺