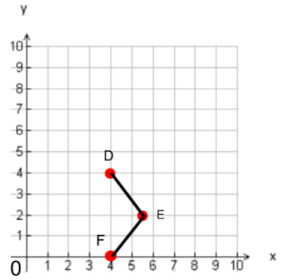
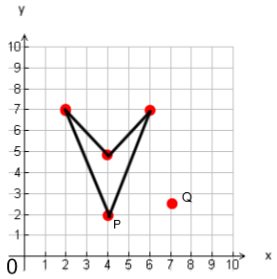
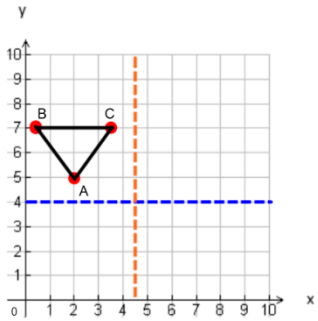
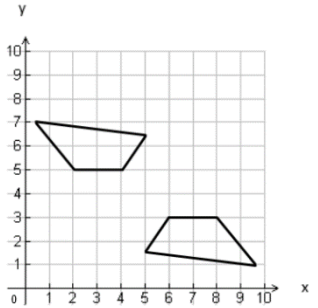
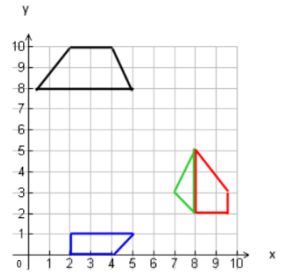
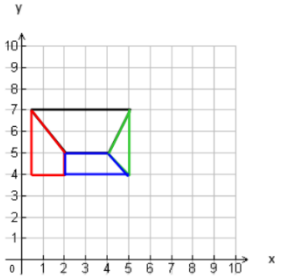
Year 5 maths – week beginning: 27.4.2020

Theme	Position and Movement lesson 1 Naming and plotting points	Position and Movement lesson 2 Describe translations	Position and Movement lesson 3 Describe reflections	Position and Movement lesson 4 Describe reflections	Position and Movement lesson 5 Describe reflections and translations
Factual fluency (to aid fluency)	https://uk.ixl.com/math/year-5/objects-on-a-coordinate-plane Identify co-ordinates	https://www.mathsisfun.com/data/click-coordinate.html Find the co-ordinate	https://uk.ixl.com/math/year-5/follow-directions-on-a-coordinate-plane Translations	https://uk.ixl.com/math/year-4/reflection-rotation-and-translation Reflection, rotation, translation (1)	https://uk.ixl.com/math/year-5/reflection-rotation-and-translation Reflection, rotation and translation (2)
Problem/ activity of the day	**(Lesson 1 resources below)** **MAKING LINKS:** We learnt about position and movement recently. **THINK: (support below)** Can you help me with this problem? D, E and F are vertices of a polygon.  1. What are the co-ordinates of D, E and F? 2. What could the polygon be? 3. Find the possible positions of other vertices to make a polygon with sides of equal length **SEE:** Look at the model below or the video clip. **DO:** Use what you have learnt today to solve these problems below.	**(Lesson 2 resources below)** **MAKING LINKS:** Yesterday we learnt how to name and plot points. **THINK: (support below)** Can you help me with this problem? The figure is translated and one of its vertices is now at Q  Q is at $(7, 2\frac{1}{2})$ The figure could have moved 3 units to the right and half a unit up. Describe and draw another possible translation. How many are there? **SEE:** Look at the model below or the video clip. **DO:** Use what you have learnt today to solve these problems below.	**(Lesson 3 resources below)** **MAKING LINKS:** Yesterday we learnt how to describe translations. **THINK: (support below)** Can you help me with this problem?  Find the co-ordinates of triangle DEF after being reflected in the orange dotted mirror line. Find the co-ordinates of triangle GHI after being reflected in the blue dotted mirror line. **SEE:** Look at the model below or the video clip. **DO:** Use what you have learnt today to solve these problems below.	**(Lesson 4 resources below)** **MAKING LINKS:** Yesterday we learnt how to describe reflections, **THINK: (support below)** Can you help me with this problem? A trapezium is reflected twice. This is how it looks before and after the reflections.  Describe the reflections. Where would the mirror lines be? **SEE:** Look at the model below or the video clip. **DO:** Use what you have learnt today to solve these problems below.	**(Lesson 5 resources below)** **MAKING LINKS:** Yesterday we learnt how to describe reflections. Each figure is either reflected or translated  Following their transformations, the figures join together to create one rectangle.  Describe the transformation of each figure. **SEE:** Look at the model below or the video clip. **DO:** Use what you have learnt today to solve these problems below.
Methods, tips & clues	***SEE model below (day 1)*** ***SEE video clip***	***SEE model below (day 2)*** ***SEE video clip***	***SEE model below (day 3)*** ***SEE video clip***	***SEE model below (day 4)*** ***SEE video clip***	***SEE model below (day 5)*** ***SEE video clip***
Time to check	***Use the answer sheet and video clips.***	***Use the answer sheet and video clips.***	***Use the answer sheet and video clips.***	***Use the answer sheet and video clips.***	***Use the answer sheet and video clips.***

See below for resources to support you to THINK-SEE-DO

DAY 1 RESOURCES:

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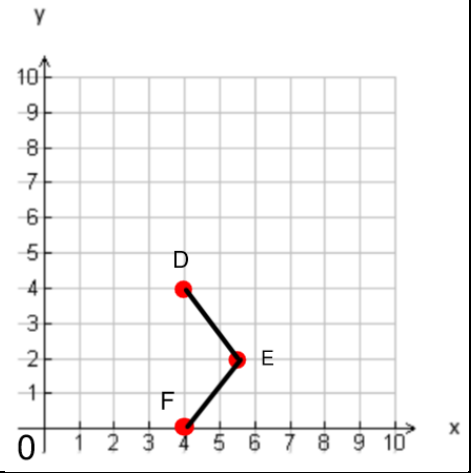
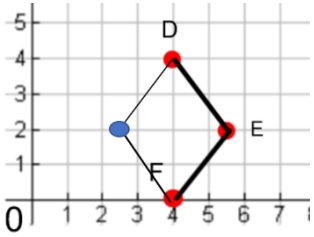
THINK:

D, E and F are vertices of a polygon.
Remember
A polygon has 3 or more straight sides
The order of the coordinates (x, y)
Count the number of squares between vertices
1. What are the co-ordinates of D, E and F?
2. What could the polygon be?
3. Find the possible positions of other vertices to make a square.



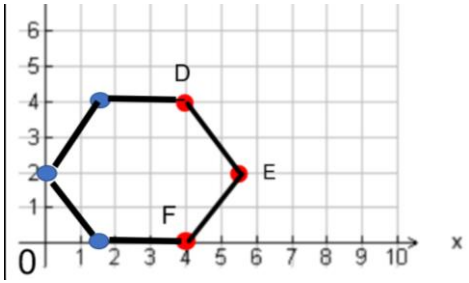
SEE:

D (4,4), E (5.5, 2) F (4,0)



A rhombus with the extra vertex at (2.5,2)

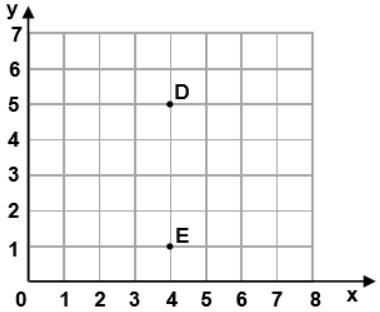
A hexagon with vertices at (1.5, 0), (0, 2) and (1.5 ,4)



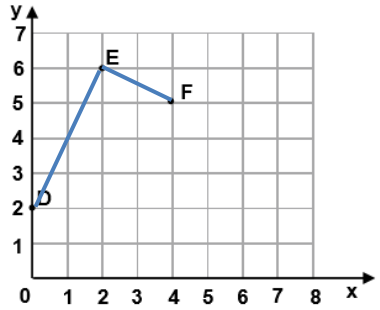
You can also watch the video.

DO:

1. D and E are the corners of a square. Where would you plot the other two vertices? Find three ways.
   Remember
   - The order of the coordinates (x, y)
   - A square has 4 equal sides
   - Count the number of squares between vertices E and D
   - Join the vertices with a ruler



2. D, E and F are vertices of a rectangle. Where would the remaining vertex go?
   Remember
   - The opposite sides of a rectangle are equal
   - Its angles are right-angles, 90°
   - Join all the vertices with a ruler



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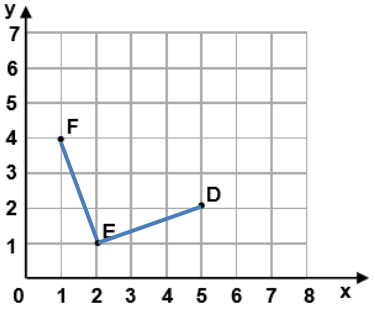

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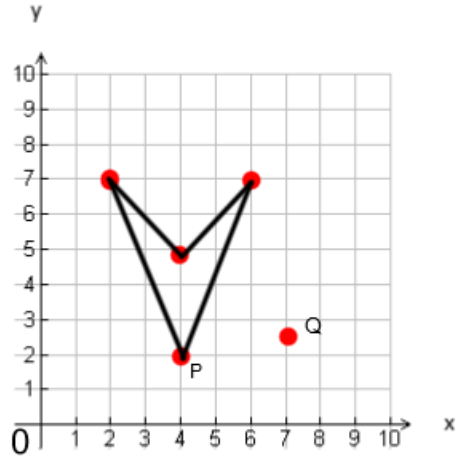
For an extra challenge, you could try this link or this one.

DAY 2 RESOURCES:

Quality First Education Trust

THINK:



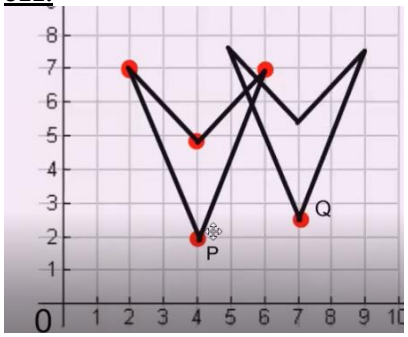
The figure is translated and one of its vertices is now at Q. Q is at $(7, 2\frac{1}{2})$.

The figure could have moved 3 units to the right and half a unit up.

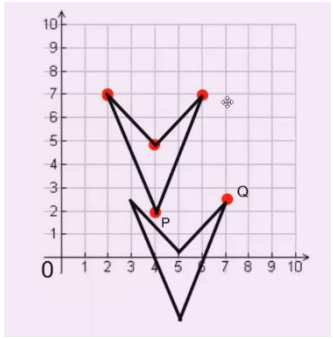
Describe and draw another possible translation.

How many are there?

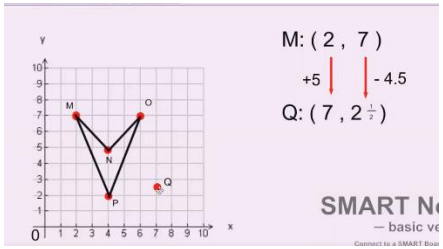
SEE:



The shape could move 3 units to the right and 0.5/half a unit up.



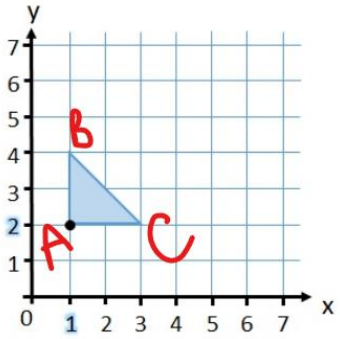
The shape could move 1 unit to the right and 4.5 units down.



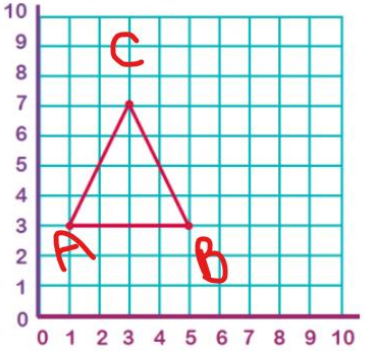
You could also work out the coordinates of each point to help you. The shape could be translated 5 units to the right and down 4.5 units so point M becomes point Q. You can also watch the video.

DO:

1. This triangle is translated 3 units right and 4 units up. What are the **new coordinates** of each vertex?
Remember to count the number of units and to put a dot in the new position. Then, write the correct letters on the new dots.



Look at this triangle.



2. a) Describe the translation that moves B to (8,5)
   b) What are the new coordinates of A and C?

3. a) Describe the translation that moves A to (2.5, 1)
   b) What are the new coordinates of B and C?

For an extra challenge, you could try this link.

DAY 3 RESOURCES:

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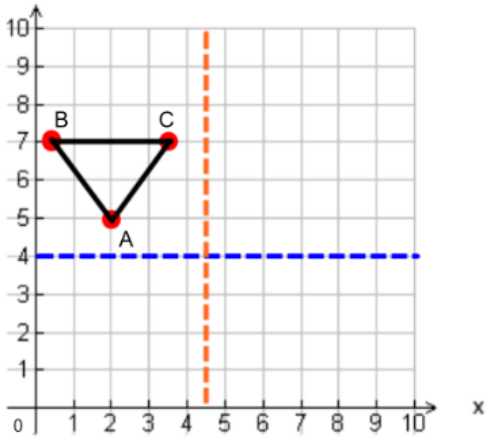
THINK:

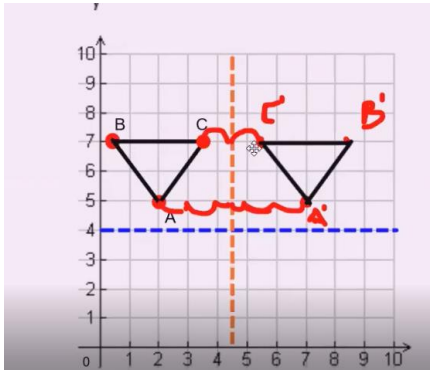


Find the co-ordinates of triangle DEF after being reflected in the orange dotted mirror line.

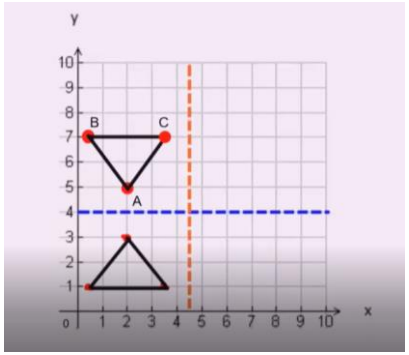
Find the co-ordinates of triangle GHI after being reflected in the blue dotted mirror line.

SEE:

Use the squares to count to the mirror line and over onto the other side.



A = (7,5) B= (8.5,7) C=(5.5,7)

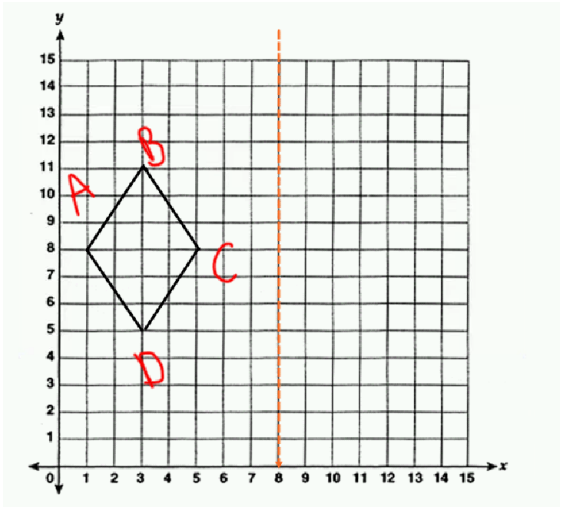


A = (2,3) B= (0.5, 1) C=(3.5, 1)

You can also watch the video.

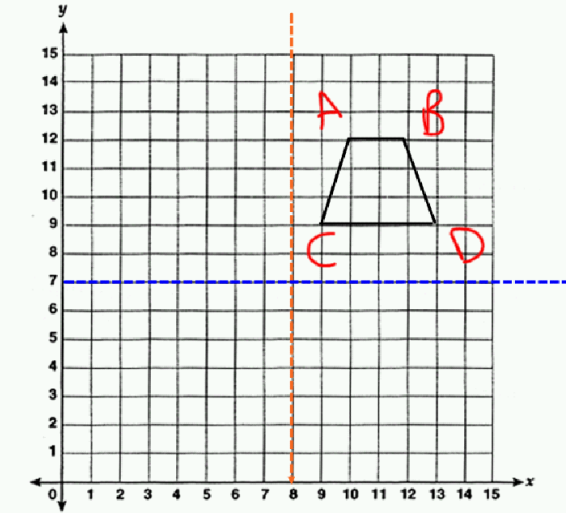
DO:

1 Reflect this rhombus in the orange mirror line.
Write the coordinates of the new vertices.



Remember
Count the squares from each point to the mirror line, and do the same on the other side of the mirror line.
Place a dot on the new vertices (on the other side of the mirror line) and then, add the letter.
Use a ruler to join the new vertices.

2 Reflect this trapezium in the orange line then in the blue line.
What are the new coordinates of A, B, C and D?



DAY 4 RESOURCES:

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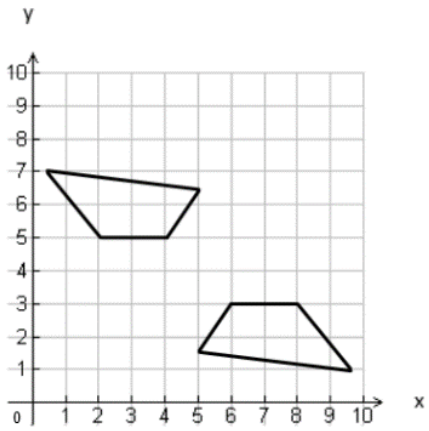
THINK:



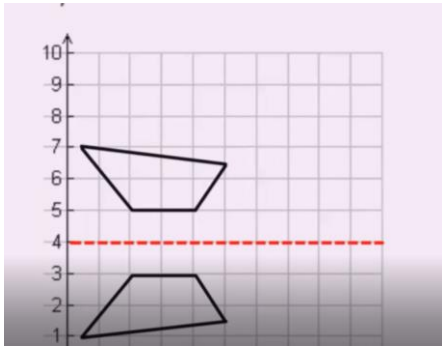
A trapezium is reflected twice. This is how it looks before and after the reflections.

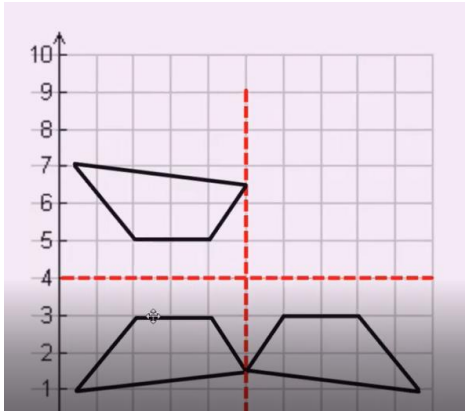
Describe the reflections.

Where would the mirror lines be?

SEE:

Here's the first reflection.





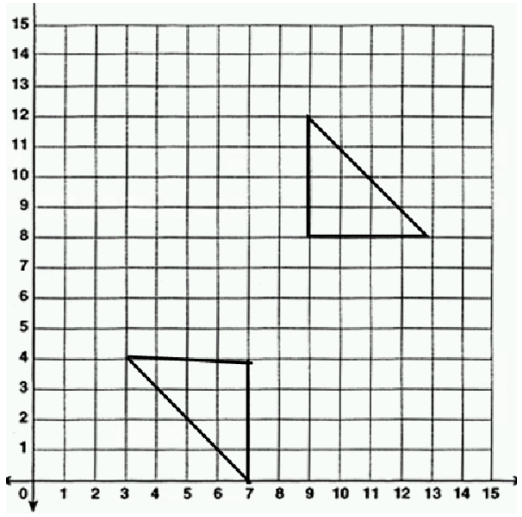
Then it's reflected like this:

Alternatively, you could have reflected in the vertical mirror line first, then in the horizontal mirror line.

You can also watch the video.

DO:

1. This shape has been reflected twice. Where would the mirror lines be?

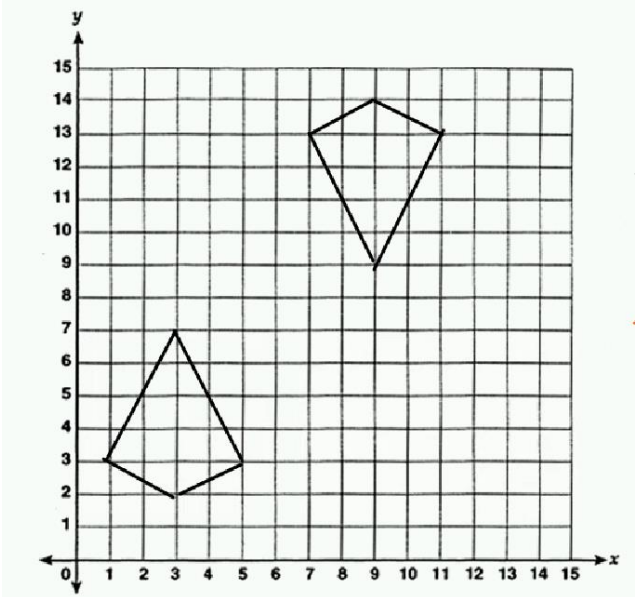


Remember that the mirror lines can be horizontal ---------

vertical

You can try both ways and see which mirror line is the correct one.

2. This kite has been reflected twice. Find the mirror lines.

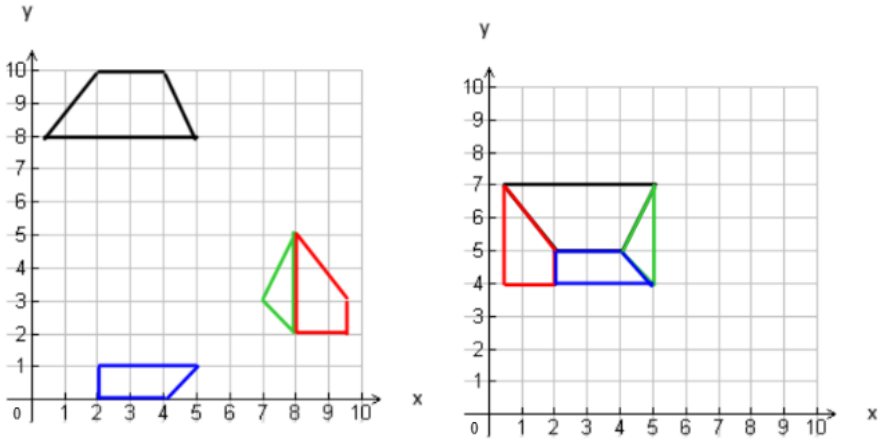


DAY 5 RESOURCES:

DAY 5 - THINK:

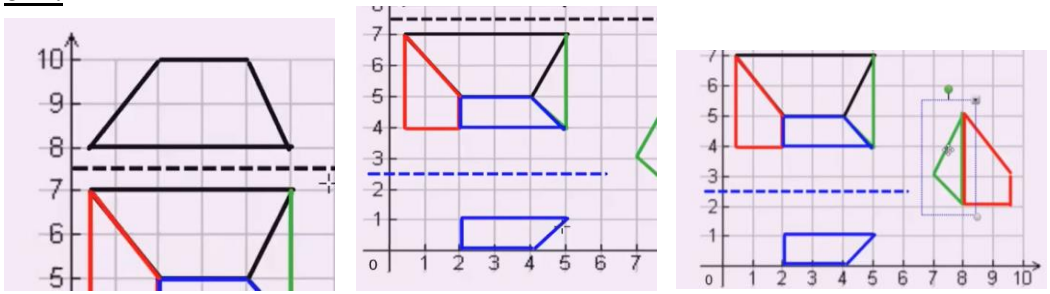
Each figure is either reflected or translated

Following their transformations, the figures join together to create one rectangle.



Describe the transformation of each figure.

SEE:



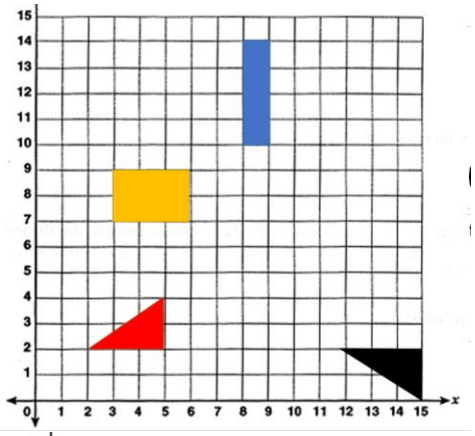
The black shape is reflected here on the line where y = 7.5
The blue shape is reflected here where y = 2.5
The green shape was translated 3 units to the left and 1 unit up.
The red shape was translated 7.5 units to the left and 2 units up.

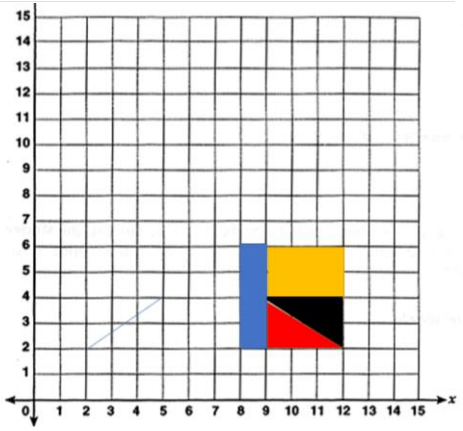
You can also watch the video.
You can also watch the video.

DO:

1. Each figure has been transformed by being reflected or translated to join together to make a square. Describe the transformation of each figure.

Remember
- Work on one figure at a time.
- Count how many squares the moved up / down and right /left.





Can you make your own problem like this for a friend or family member to do?

Answer sheet

Day 1

1.

(0, 1) and (0, 5) OR (8, 1) and (8, 5) OR (2, 3) and (6, 3)

2. First diagram: (2, 1) Second diagram: (4, 5)

Day 2

1. A = (4,6) B = (4,8) C = (6,6)

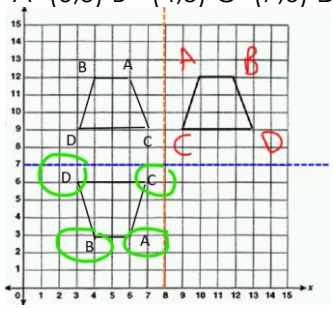
2a) 3 units right and 2 units up
b) A=(4,5) C=(6,9)

3a) 1.5 right and 2 down
b) B= (6.5,1) C = (4.5,5)

Day 3

1. A= (15,8) B = (13,11) C=(11,8) D = (13,5)

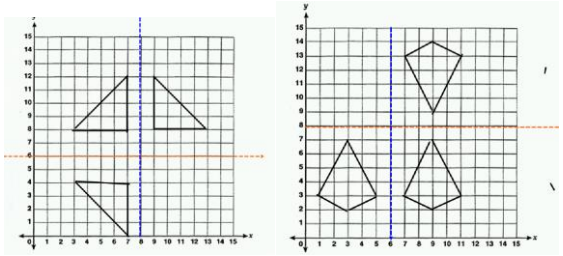
2. A=(6,3) B= (4,3) C=(7,6) D= (3,6)



Day 4

1 The mirror lines are 8 on the x axis and 6 on the y axis.

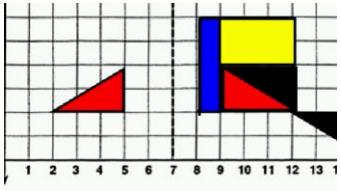
2 The mirror lines are 6 on the x axis and 8 on the y axis.

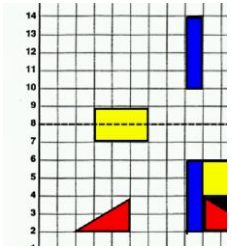


Day 5

The yellow rectangle has been translated **6 units to the right and 3 units down**.

The black triangle has been translated **3 units to the left and 2 units up.**





The red triangle is reflected in the **mirror line where x = 7**

The blue rectangle is reflected in the **mirror line where y = 8**