Y4 Maths
Home Learning
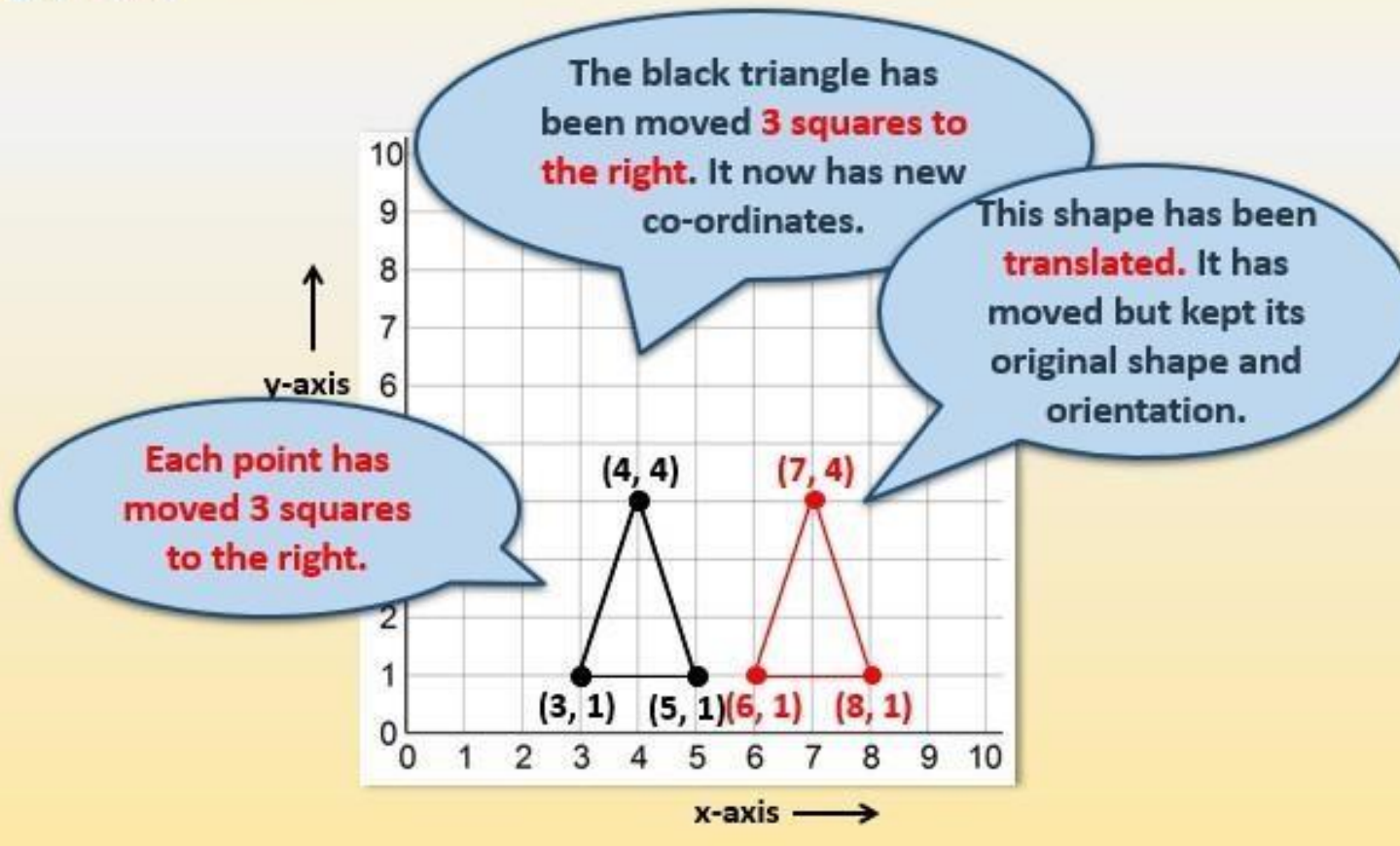# Week beginning 29.06.20
Moving Co-ordinates

- Start by carefully reading through the **Learning Reminders**.

- Then, in your Home Learning books, write today's date along with the title, 'Moving co-ordinates 1' and complete **Activity 1.** If you struggle, have a go at completing **A Bit Stuck?**

- If you need to refresh your memory, read through the **Learning Reminders**.

- Then, in your Home Learning books, write today's date along with the title, 'Moving co-ordinates 2' and complete **Activity 2.** If you struggle, have a go at completing **A Bit Stuck?**

    Extra:
- If you think you've cracked it and whizzed through Activities 1 & 2, have a go at **Check your understanding** – remember to fold the page, to hide the answers!
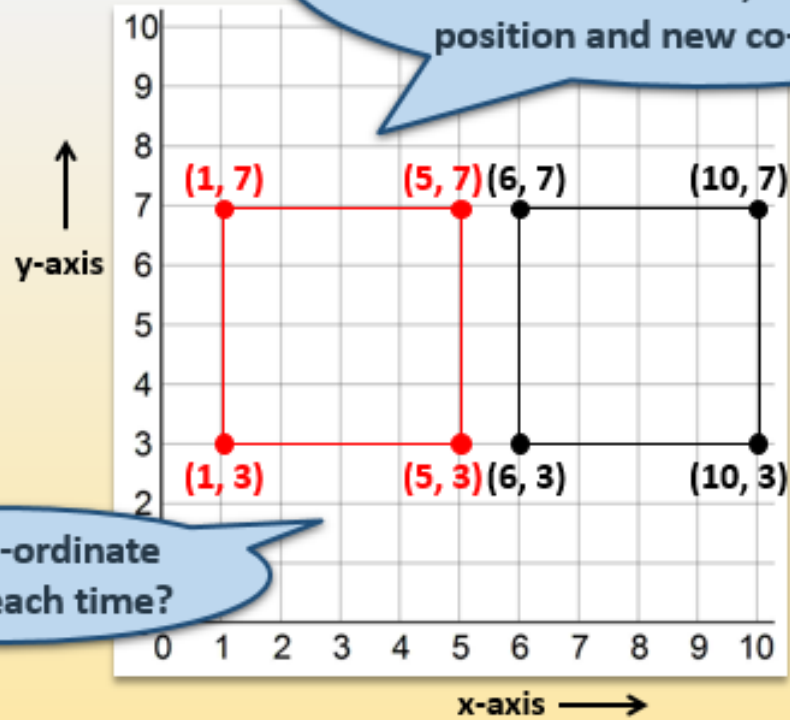
Learning Reminders

Read and plot co-ordinates in the first quadrant; Translate shapes in the first quadrant.

The black triangle has been moved **3 squares to the right**. It now has new co-ordinates.

This shape has been **translated**. It has moved but kept its original shape and orientation.

Each point has moved 3 squares to the right.

y-axis

(4, 4)   (7, 4)

(3, 1)   (5, 1)(6, 1)   (8, 1)

x-axis ⟶

Learning Reminders

Read and plot co-ordinates in the first quadrant; Translate shapes in the first quadrant.

The black square moves 5 squares to the left. Here it is in red, in its new position and new co-ordinates.

Which co-ordinate changed each time?

y-axis

(1, 7) (5, 7) (6, 7) (10, 7)

(1, 3) (5, 3) (6, 3) (10, 3)

0 1 2 3 4 5 6 7 8 9 10

x-axis →

Learning Reminders

Read and plot co-ordinates in the first quadrant; Translate shapes in the first quadrant.
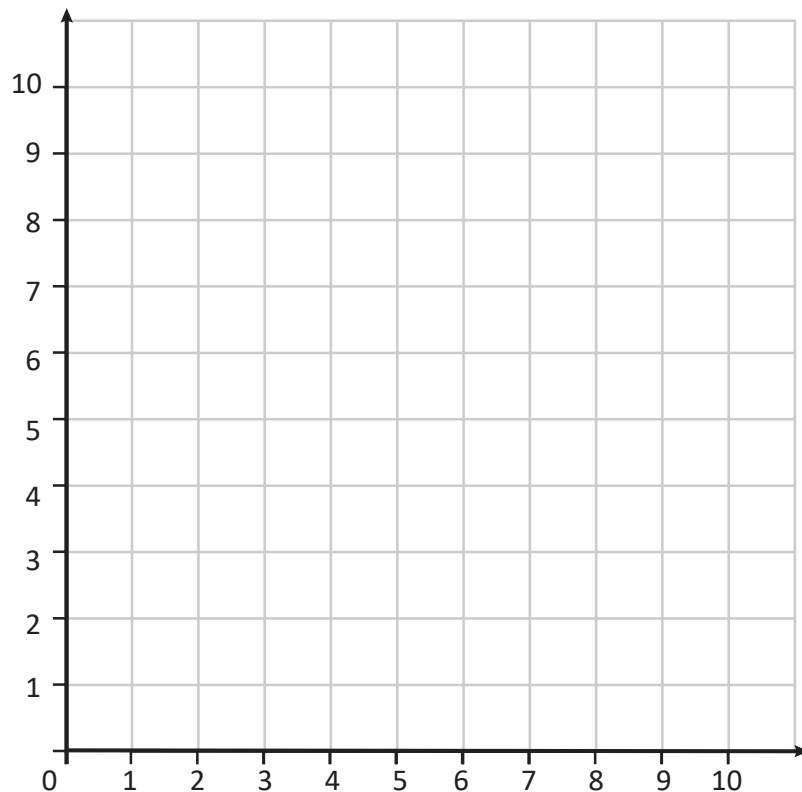
The black rectangle moves 4 squares down. Write the new co-ordinates for its new position.

Which co-ordinate changed each time?

(3, 9)   (7, 9)

(3, 7)   (7, 7)

y-axis

x-axis
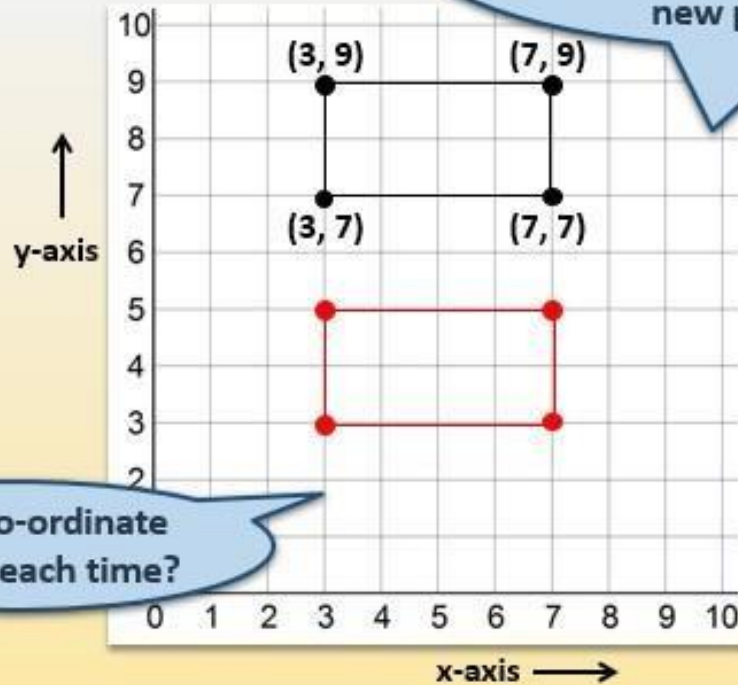
Activity 1
Moving polygons on a grid
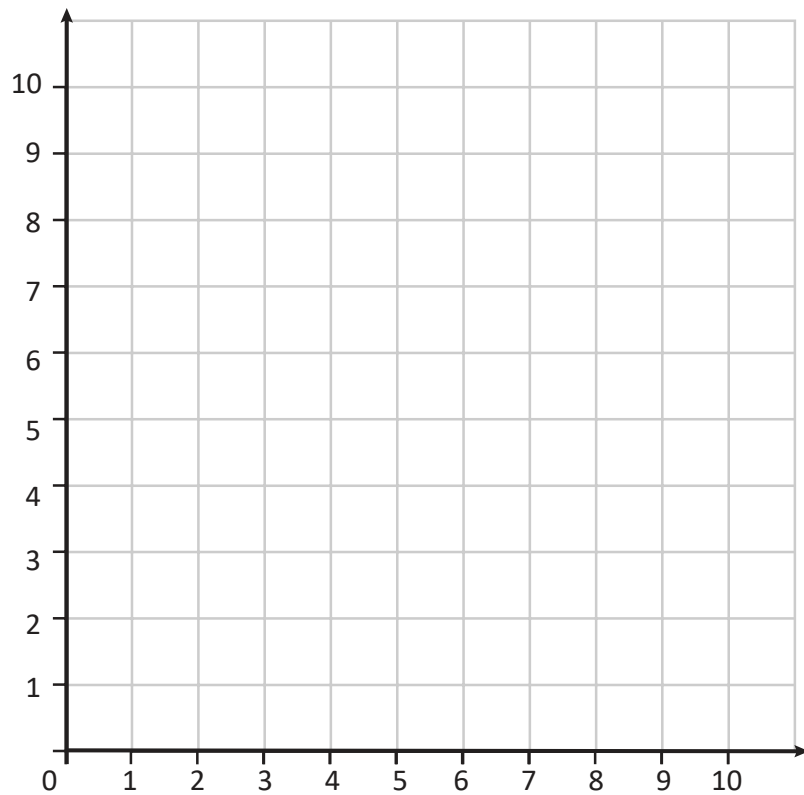

1) Plot these co-ordinates: (1,2), (4,3), (2,5)

2) Join them up, what shape have you made? _____

3) Imagine you slide this shape up three squares.

   What are the new co-ordinates of its vertices?

   _____, _____, _____

4) Draw the new shape on the grid.

5) Plot these co-ordinates: (5,8), (7,10), (5, 10)

6) They are three of the corners of a square.

   What are the co-ordinates of the other corner? _____

7) Plot this point: then join them up to draw the square.

8) Imagine you slide this shape one square down and four squares left.

   What are the new co-ordinates of its vertices?

   _____, _____, _____, _____

9) Draw the new shape on the grid.

Activity 2
Moving polygons on a grid

1) Plot these co-ordinates: (4,7), (7,10), (4,10)

2) They are three of the corners of a square.

   What are the co-ordinates of the other corner? _____

3) Plot these co-ordinates and join them up to draw the square.

4) Imagine you slide this shape one square 'down' and four squares left.

   What are the new co-ordinates?_____ , _____ , _____ , _____

5) Draw the new shape on the grid.

6) Draw a shape with five straight sides on the grid.
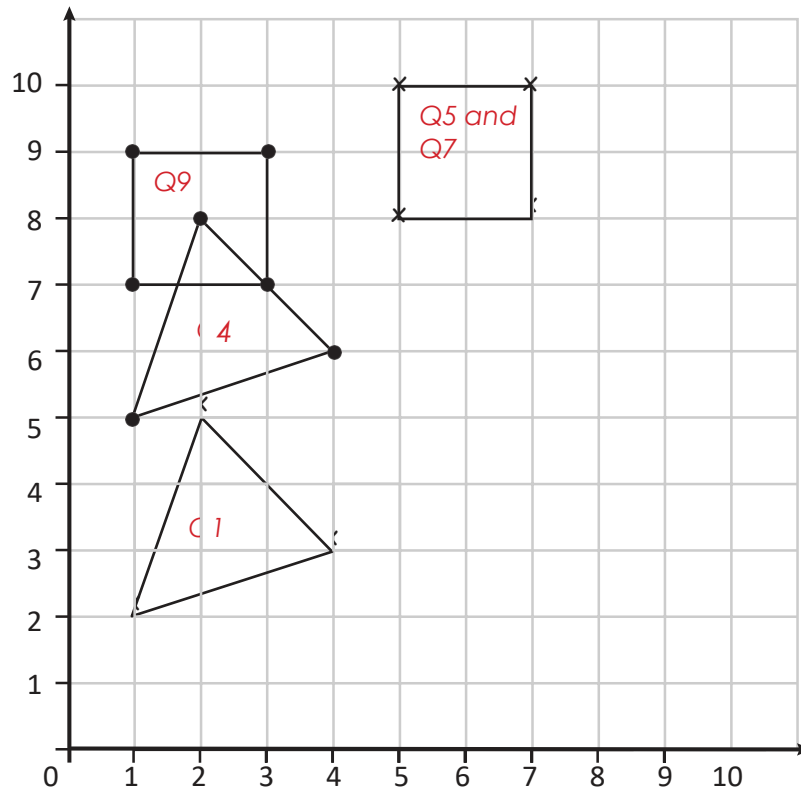
7) What are the co-ordinates of the corners of your shape?

   _____ , _____ , _____ , _____ , _____

8) Imagine you slide your shape to a new place on the grid.

   What are the new co-ordinates?_____ , _____ , _____ , _____ , _____

9) How can you describe its movement?

10) Draw the new shape on the grid.

Challenge

A shape is translated three squares right and four squares 'up' the grid. It finishes with vertices at: (5,4), (3,9) and (3,4). Where did it start?
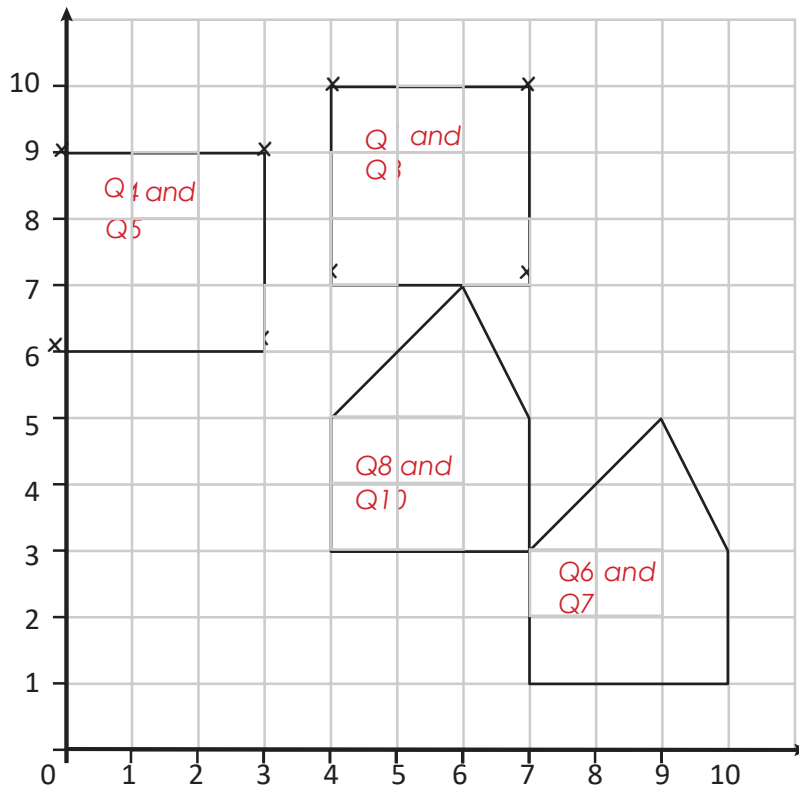
Answers

Activity 1

1.   See grid above
2.   Triangle
3.   (1, 5), (4, 6) and (2, 8)
4.   See grid above
5.   See grid above
6.   (7, 8)
7.   See grid above
8.   (1, 7), (1, 9), (3,7) and (3, 9)
9.   See grid above

Practice Sheet Answers

Q7 and Q8

Q4 and Q5

Q8 and Q10

Q6 and Q7

1.   See grid above
2.   (7, 7)
3.   See grid above
4.   (0, 9), (0, 6), (3, 6) and (3, 9)
5.   See grid above
6.   See grid above for an example
7.   (7, 1), (7, 3), (10, 1), (9, 5) and (10, 3) are co-ordinates for shape in Q6.
8.   (4, 3), (7, 3), (4, 5), (7, 5) and (6, 7)
9.   Up 2 squares and left 3 squares
10.   See grid above

Challenge

A shape is translated three squares right and four squares 'up' the grid. It finishes with vertices at: (5,4), (3,9) and (3,4). Where did it start?   (2, 0), (0, 5) and (0, 0)
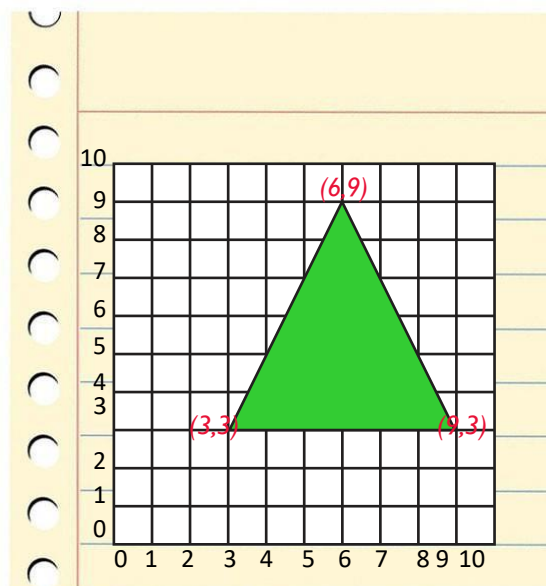
Walk then fly!

Things you will need:
- A grid
- Coloured pencils

What to do:

- Sit back to back.

- Choose a coloured pencil.
  Use it to draw a triangle on your grid.

- Tell your partner the colour pencil you chose.
  Call out the co-ordinates of the corners of your triangle to your partner.
  They plot the co-ordinates, then join them to make a triangle using the same coloured pencil.

- Now compare your triangles.
  Are they the same?
  If so, you both score 3 points.
  If not, you score 1 point for each matching point.

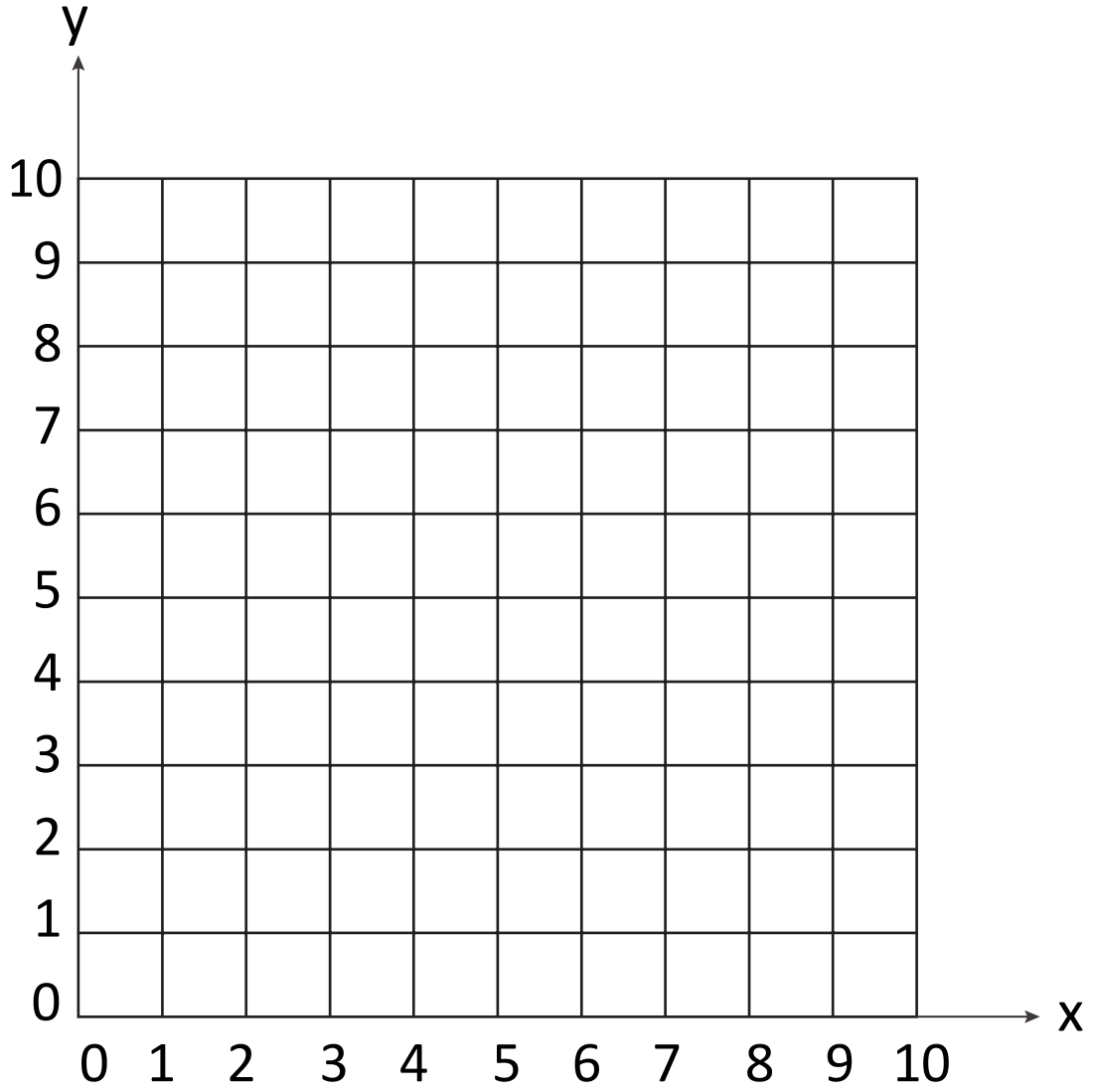- Swap roles and repeat using a different coloured pencil.

S-t-r-e-t-c-h:
Move one of your triangles up by two squares. Record the new co-ordinates.

Learning outcomes:
- I can use co-ordinates in the first quadrant.
- I am beginning to work out new co-ordinates after a translation.

y

10
9
8
7
6
5
4
3
2
1
0

0 1 2 3 4 5 6 7 8 9 10   x

Check your understanding
Questions

Bill draws a triangle on his grid.

He moves it two squares 'down' the grid.

The new co-ordinates of its vertices are:

(2, 1) (6, 1) (3, 5)

Write the co-ordinates of the triangle before its translation.

Esme draws a triangle on her grid.

She moves it two squares to the left.

The new co-ordinates of its vertices are:

(1, 3) (5, 3) (3, 6)

Write the co-ordinates of the triangle before its translation.

Fold here to hide answers

Check your understanding
Answers

Bill draws a triangle on his grid.

He moves it two squares 'down' the grid.

The new co-ordinates of its vertices are:

(2, 1) (6, 1) (3, 5)

Write the co-ordinates of the triangle before its translation.

(2, 3) (6, 3) (3, 7)
In each case the y co-ordinates of the triangle must be 2 greater in the original. Some children may mix up direction and subtract 2. Note that the x co-ordinate is unchanged.

Esme draws a triangle on her grid.

She moves it two squares to the left.

The new co-ordinates of its vertices are:

(1, 3) (5, 3) (3, 6)

Write the co-ordinates of the triangle before its translation.

(3, 3) (7, 3) (5, 6)

In each case, the x co-ordinate is 2 greater in the original. Note that the y co-ordinate is unchanged.