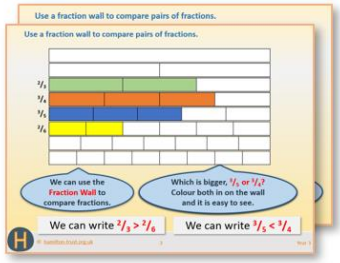
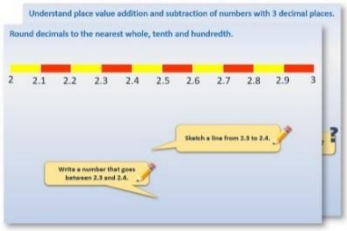
Year 4: Week 6, Day 3
Co-ordinates

Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. If possible, watch the **PowerPoint presentation** with a teacher or another grown-up.



OR start by carefully reading through the **Learning Reminders**.



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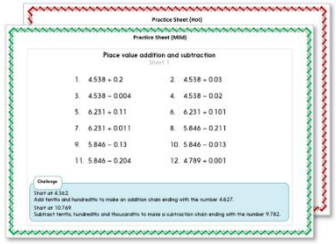
2. Tackle the questions on the **Practice Sheet**.
There might be a choice of either Mild (easier) or Hot (harder)!
Check the answers.



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3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**

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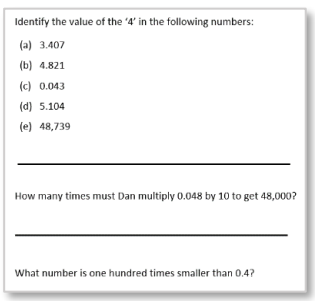
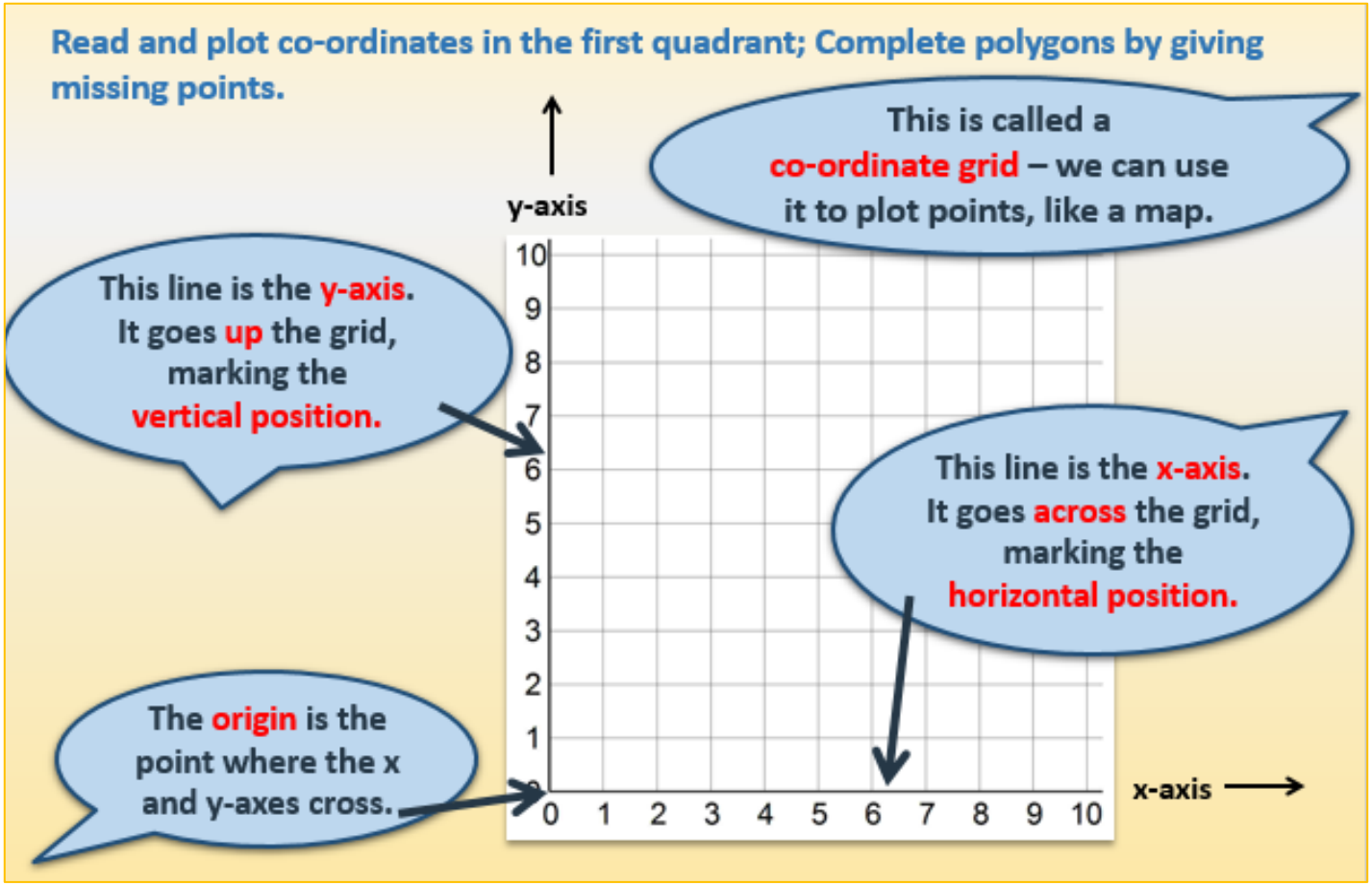
4. Have I mastered the topic? A few questions to **Check your understanding**.
Fold the page to hide the answers!



Learning Reminders

Read and plot co-ordinates in the first quadrant; Complete polygons by giving missing points.



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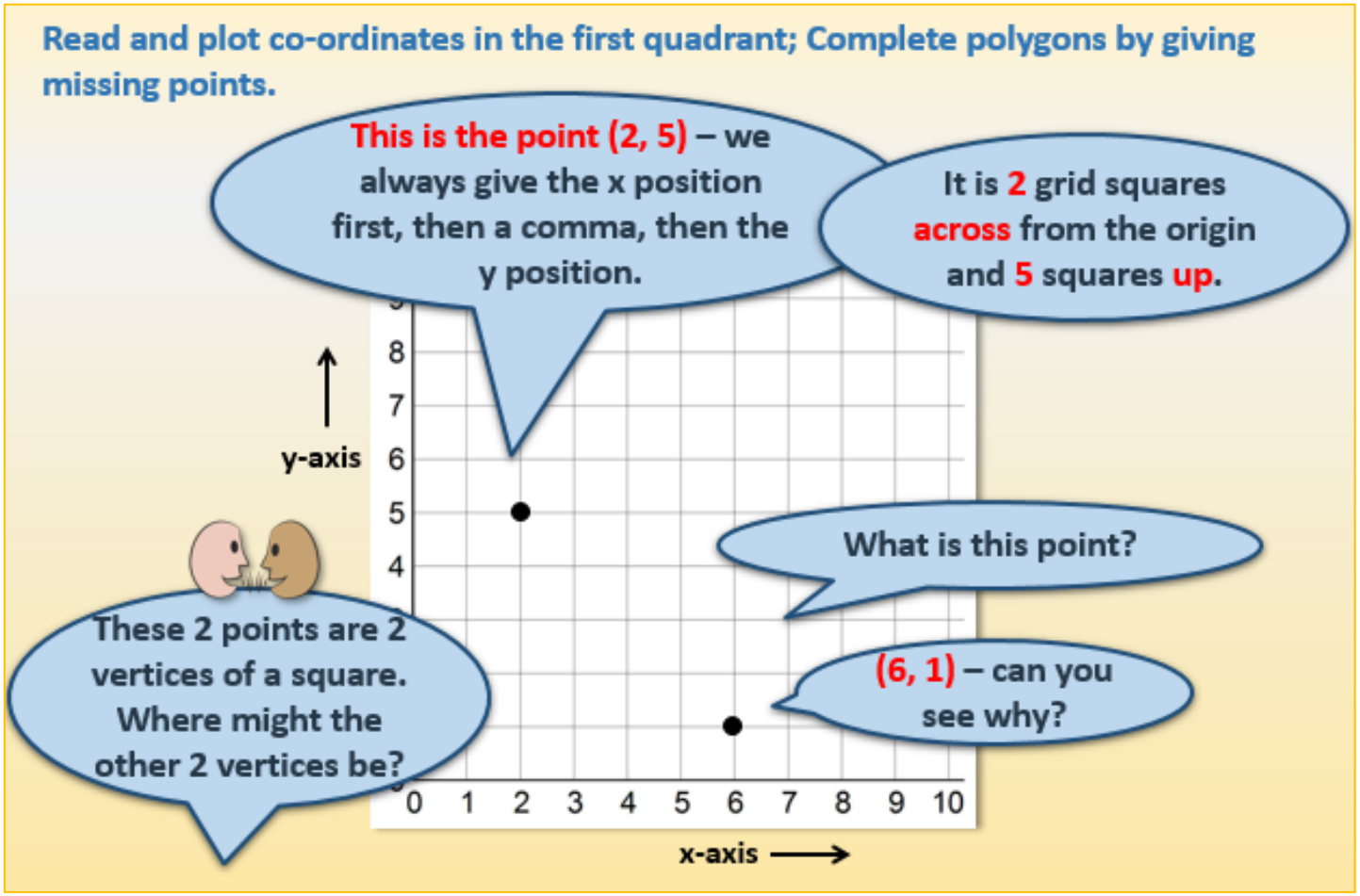

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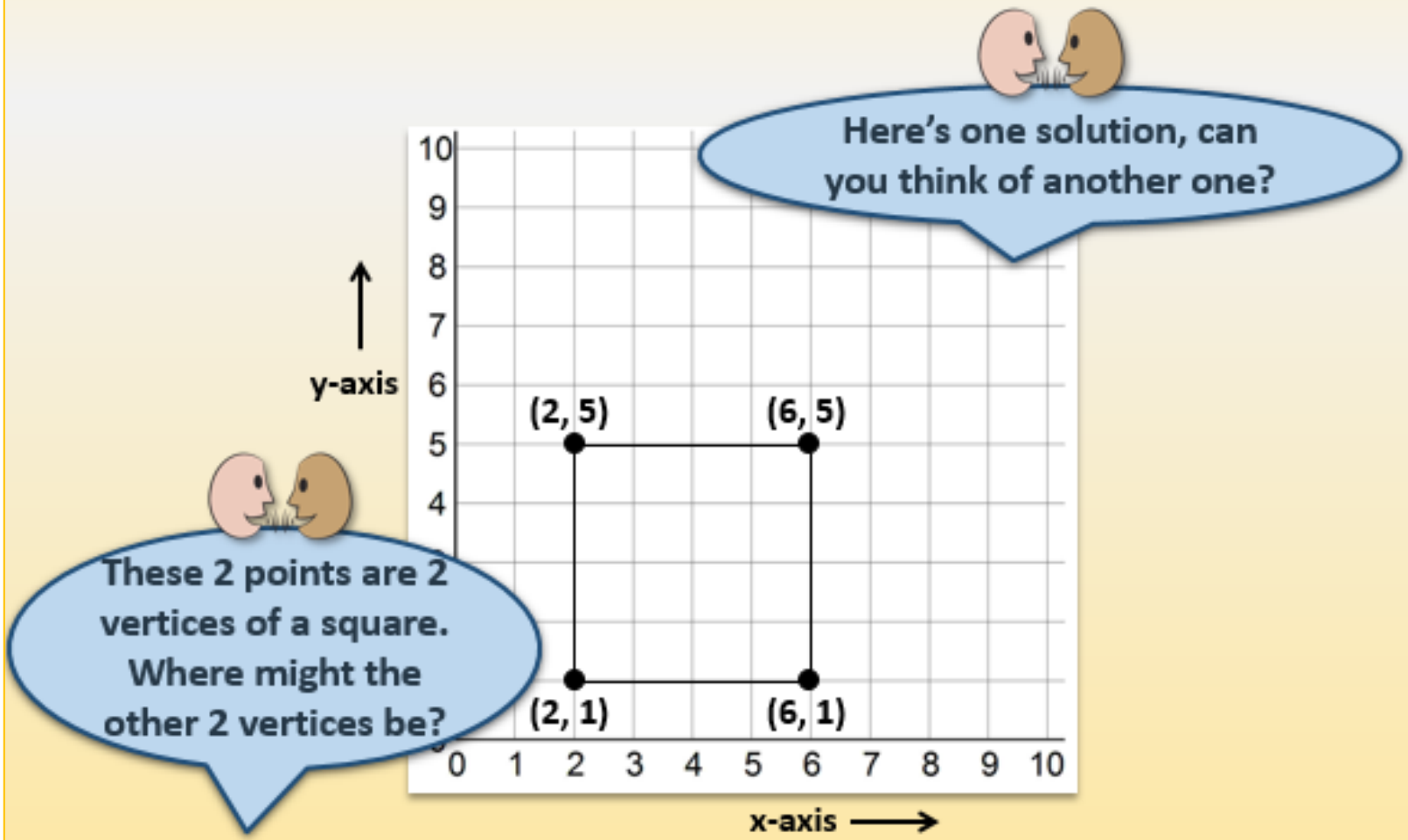

Learning Reminders

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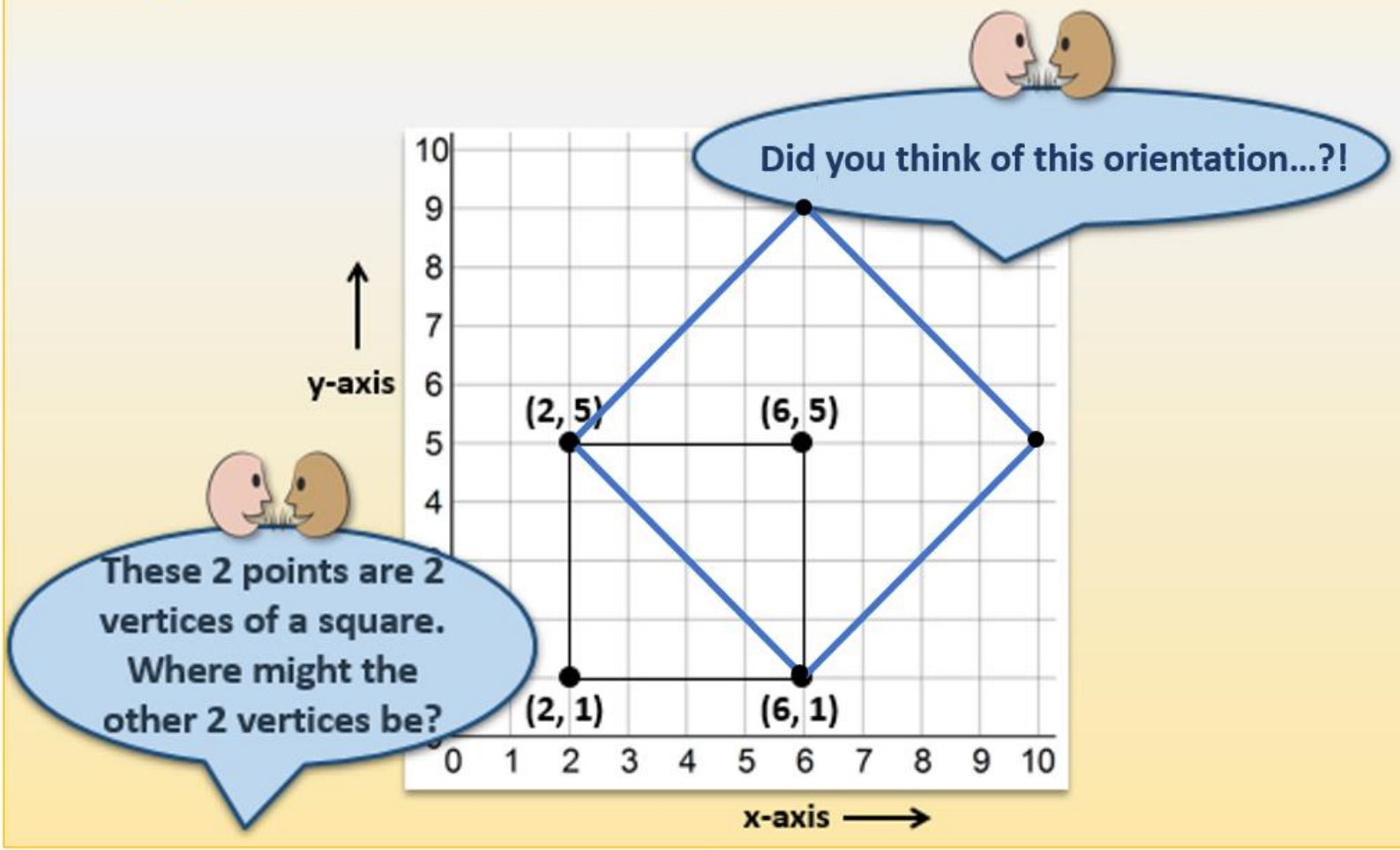
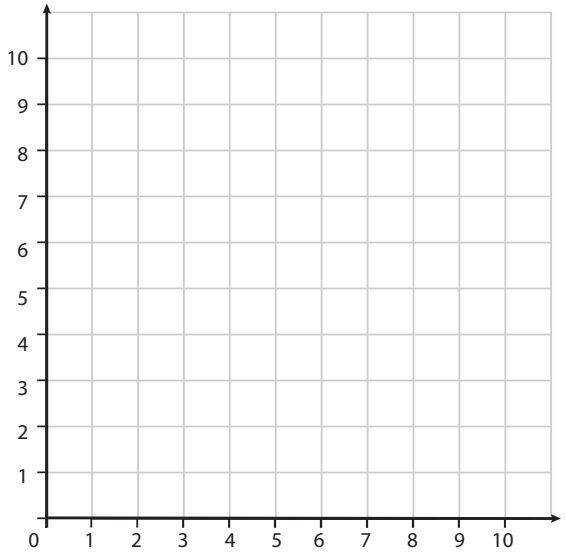


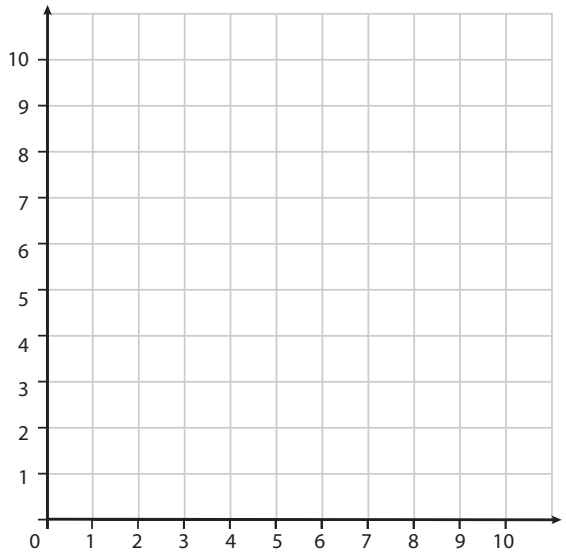
Practice Sheet Mild

Plotting shapes

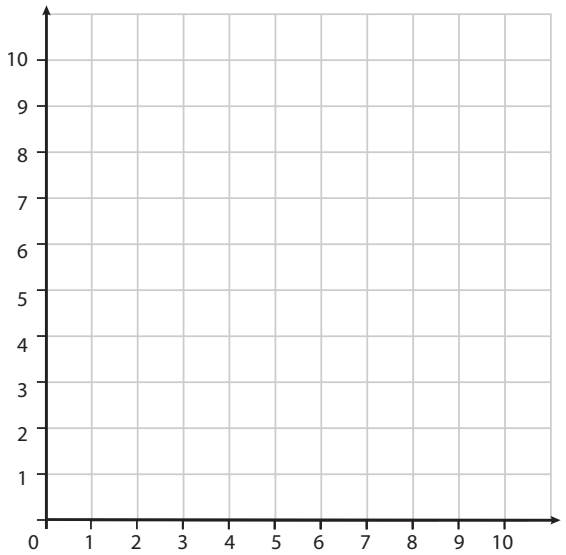
Plot the points on the grid, join them and write the name of this shape.



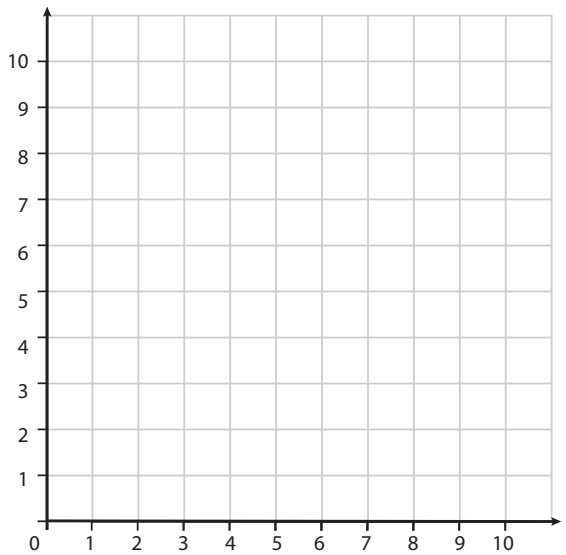
1. A (3,7) B (3,3) C (7,3) D (7,7)



2. A (9,1) B (9,8) C (5,8) D (5,1)



3. A (2,1) B (8,1) C (2,7)



4. A (3,0) B (5,9) C (7,0)

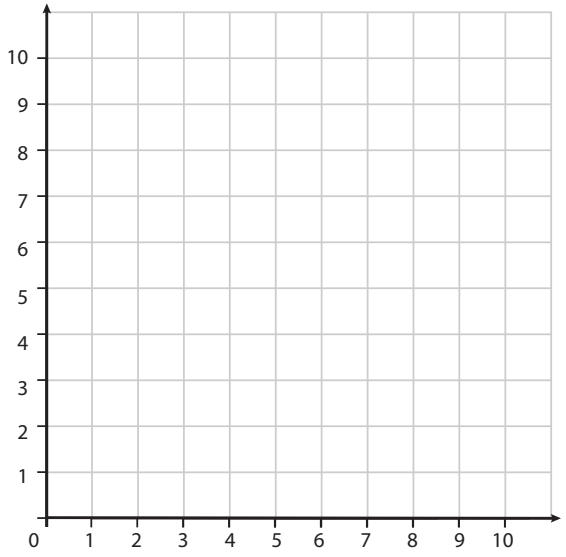
Challenge

Three corners of a square are located at (3,0), (5,8) and (0,5). Where is the 4th corner?

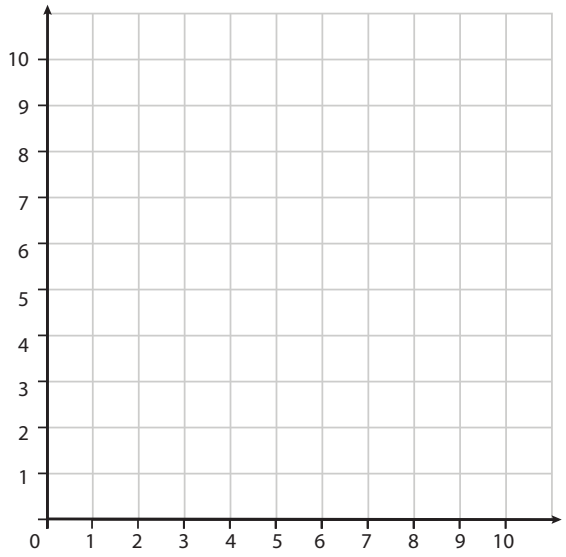
Practice Sheet Hot

Plotting shapes

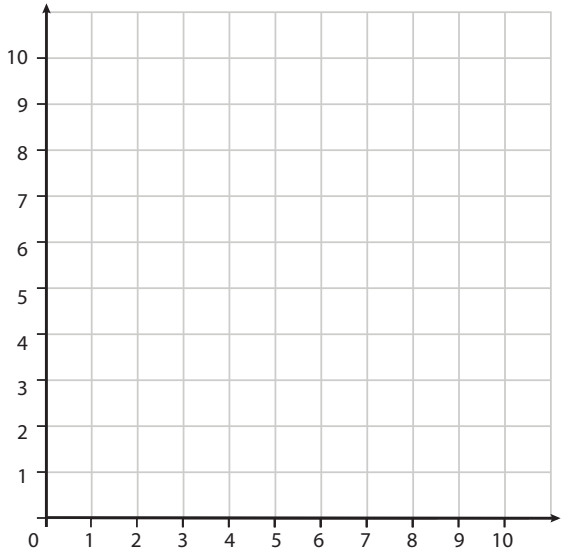
Plot the points on the grid, join them and find the missing point to make the shape.



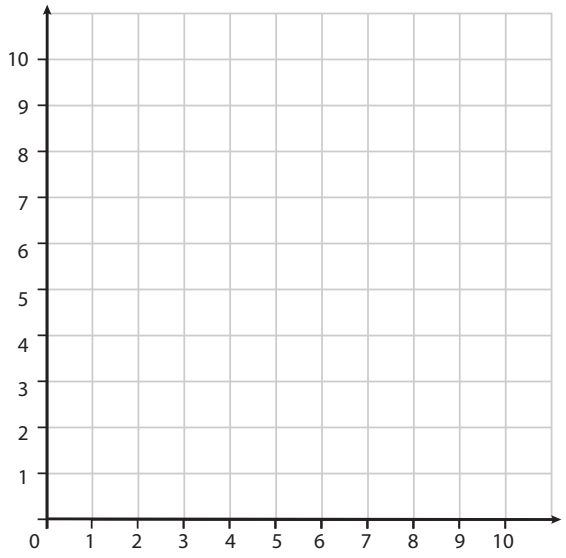
1. Square
A (3,8) B (3,2) C (6,5)



2. Rectangle
A (9,1) B (9,8) C (5,8)



3. Right-angled triangle
A (2,1) B (8,1)



4. Isosceles triangle
A (0,2) B (0,8)

Challenge

Draw your own set of 0 to 10 axes. Plot co-ordinates (4,4) and (0,4). Find the missing pairs of co-ordinates to form the vertices of 3 different squares.

Practice Sheet Answers

Plotting shapes (mild)

1. Square
2. Rectangle
3. Right angled triangle
4. Isoceles triangle

Challenge

The 4th corner is at (3, 8).

Plotting shapes (hot)

1. (0, 5)
2. (5, 1)
3. Lots of possible answers including co-ordinates starting with 2, e.g. (2, 2) up to (2, 10) or starting 8, e.g. (8, 2) up to (8,10).
4. Isoceles triangle missing co-ordinates could be (1, 5), (2, 5), (3, 5), etc.

Challenge

Missing pairs of co-ordinates to form a square are:
(0, 0) and (4, 0); (0, 8) and (4, 8); and (2, 2) and (2, 6)

A Bit Stuck?
Matching points

Things you will need:
- 0 to 9 cards
- Co-ordinate grid

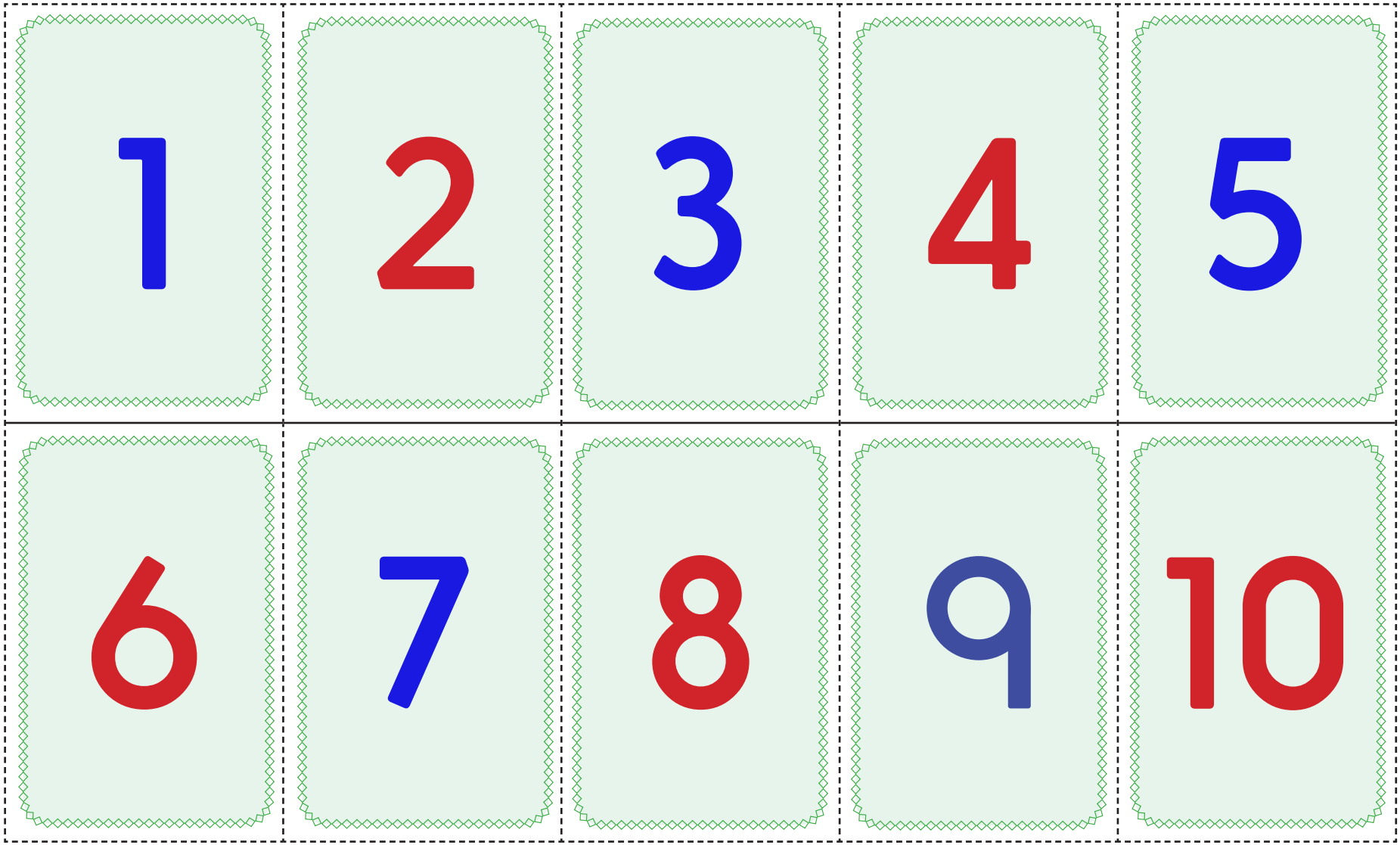
What to do:

- **Play with a partner.**
- **Each person has a co-ordinate grid.**
- **Shuffle the pack of 0–9 cards.**
- **Take 2 cards to make a pair of co-ordinates.**
- **Plot this point on your grid.**
    - These hints help you to remember the order to plot co-ordinates (*x* co-ordinate first, then *y* co-ordinate):

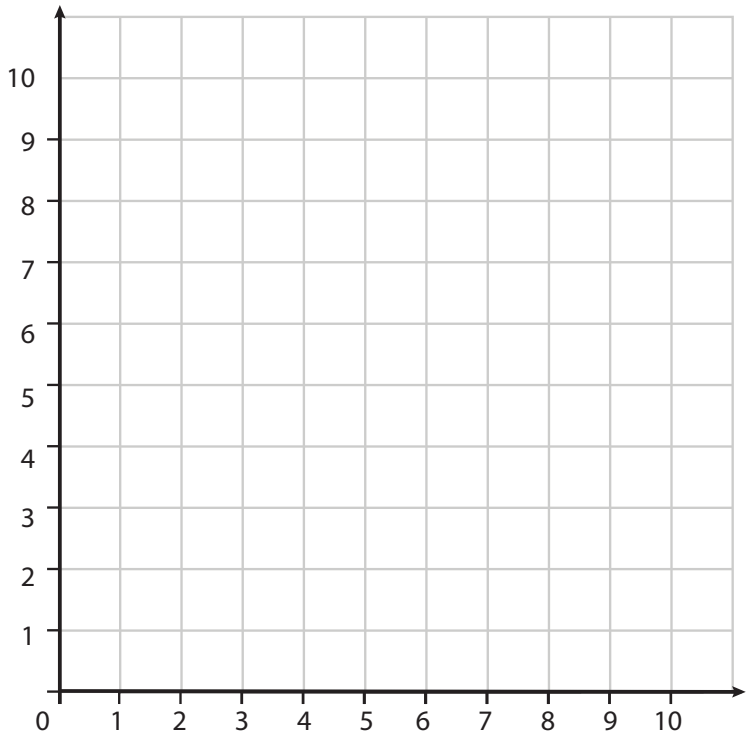
Walk before you fly

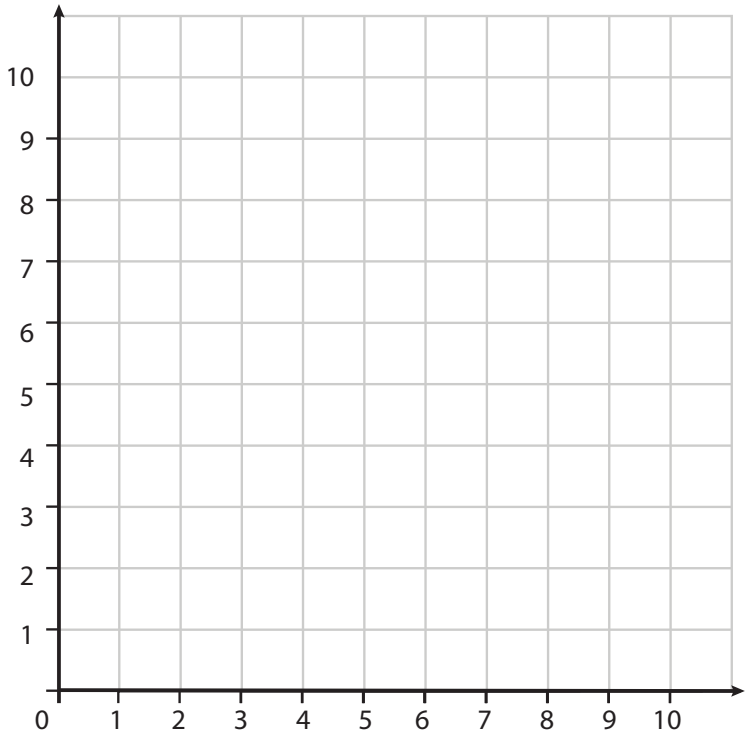
Along the corridor then up the stairs

- **Have you both drawn the point in the same place?**
- **If so, you both score 10 points. If not, work out where it should be. Remember to 'go across' before you 'go up'!**
- **Put the cards back and repeat four more times (remember the order you plot the points).**
- **Join your points *without crossing any of your lines*.**
  What shape have you formed?
- **Use a different colour pencil to join your points *in the order you plotted them*.**
  Have you formed any shapes? What are they?
- **Repeat with a new co-ordinate grid.**



A Bit Stuck?
Matching points





Check your understanding

Questions

Draw a 6 by 6 co-ordinate grid; label the x and y axes.
Mark these co-ordinates:

A (1, 1) B (1, 4) C (4, 1)

Join these and name the shape created.

Add another co-ordinate, so that if you join all four vertices you create a 4-sided shape that is not a square.

Sam says that if she draws a square on a co-ordinate grid, then two of its corners will always have the same 'x' co-ordinate and two will have the same 'y' co-ordinate.
Is she correct?

Fold here to hide answers

Check your understanding

Answers

Draw a 6 by 6 grid; label the x and y axes.
Mark these co-ordinates: A (1, 1) B (1, 4) C (4, 1).
Join these and name the shape created. Right-angled isosceles triangle.
Add another co-ordinate so that if you join all four vertices you create a 4-sided shape that is not a square. Any point other than (4, 4).
Children should be using a ruler and pencil to draw co-ordinate grids on squared paper. Co-ordinates should be clearly marked at the intersection of the vertical and horizontal lines.

Sam says that if she draws a square on a co-ordinate grid, then two of its corners will always have the same 'x' co-ordinate and two will have the same 'y' co-ordinate.
Is she correct?
This is true if the square is aligned with the horizontal and vertical axis. Since the distances between the corners are equal the x and y co-ordinates will be in pairs, e.g. A (1, 1) B (1, 4) C (4, 1) D (4, 4).