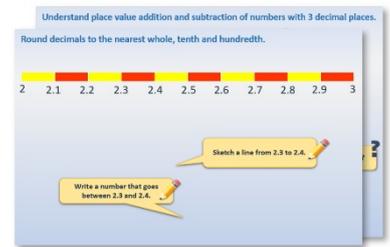


Week 13, Day 5

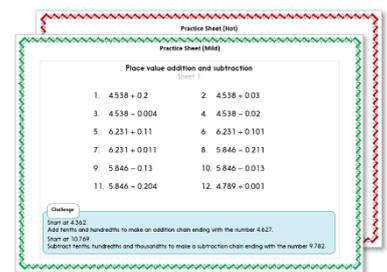
Horizontal, vertical, parallel and perpendicular lines

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

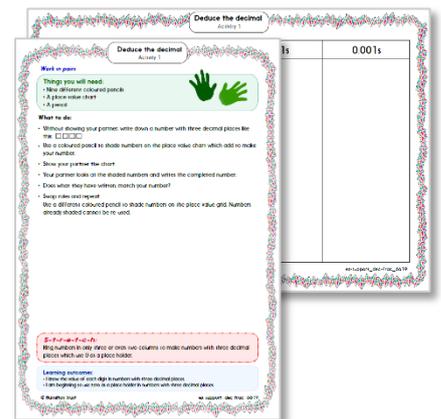
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



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



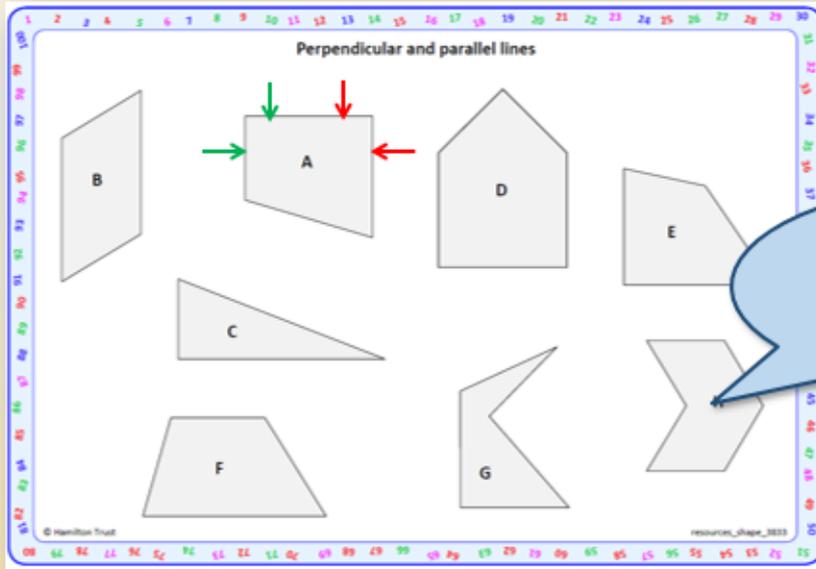
3. Finding it tricky? That's OK... have a go with a grown-up at **A Bit Stuck?**



4. Think you've cracked it? Whizzed through the Practice Sheets? Have a go at the **Investigation**...

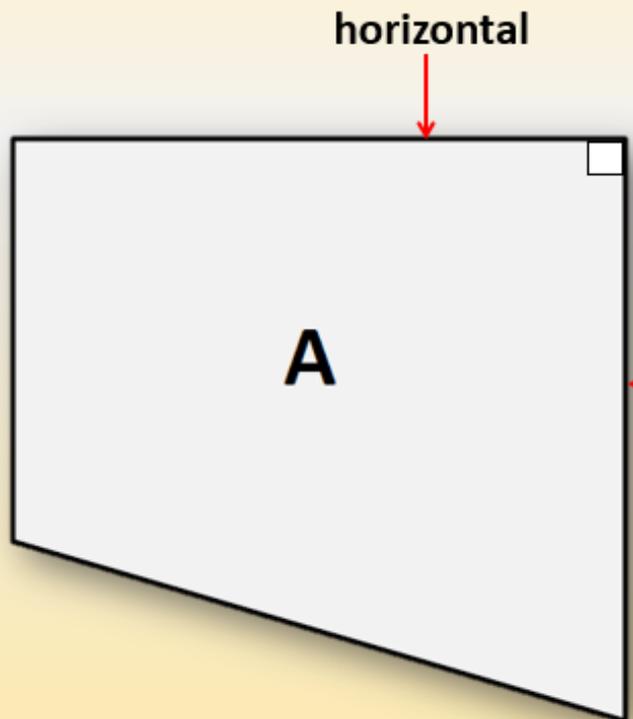
Learning Reminders

Identify perpendicular lines.



We call lines that meet at a right angle, **perpendicular**.

Identify horizontal, vertical and perpendicular lines.



In this shape, a **horizontal** and **vertical** line meet at a right angle.

Horizontal and vertical lines are **perpendicular**.

Can you see any around the room?

Learning Reminders

Identify horizontal, vertical and perpendicular lines.



Can you point out where a horizontal and vertical line meet at a right angle on this shape?

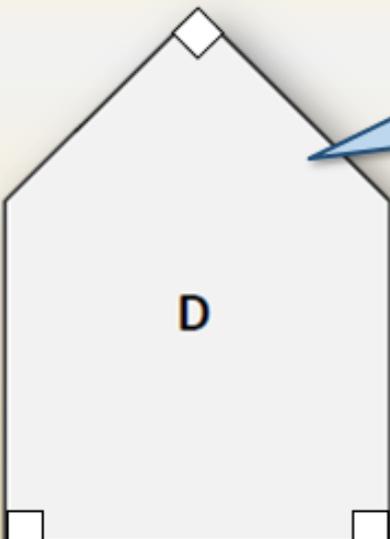


And this one?

What about this one?



Identify horizontal, vertical and perpendicular lines.



Where do horizontal and vertical lines meet at a right angle on this shape?

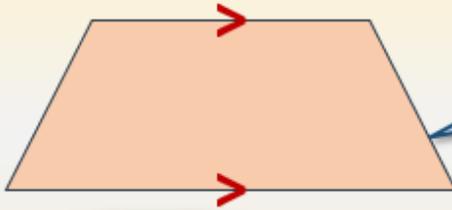
Is there more than one pair of lines?

Lines which are perpendicular don't always have to be horizontal and vertical.

Remember! *Perpendicular* lines are lines which meet at a right angle.

Learning Reminders

Identify parallel lines.



This shape has a pair of **parallel** lines.

These two lines are the same distance away from each other all the way along their length.

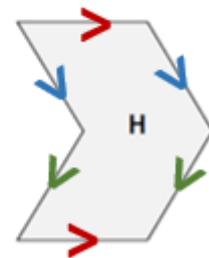
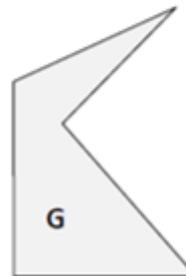
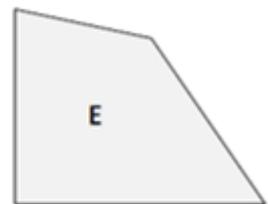
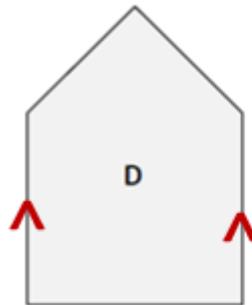
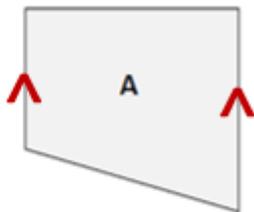
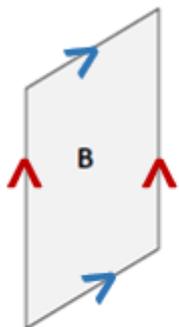
Mathematicians show parallel lines on a diagram by drawing arrows on each of the pair of lines.



This shape has 4 sides. It has 2 pairs of parallel lines.

This type of shape is called a **parallelogram**.

Identify parallel lines.

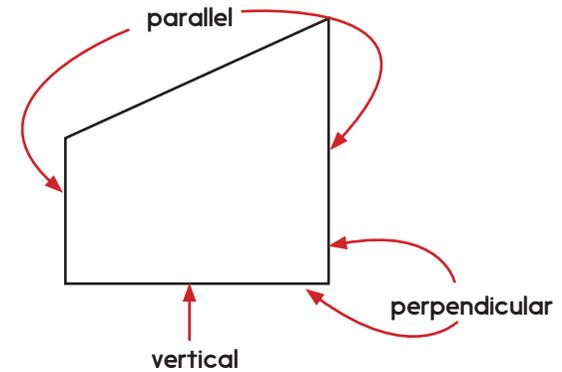
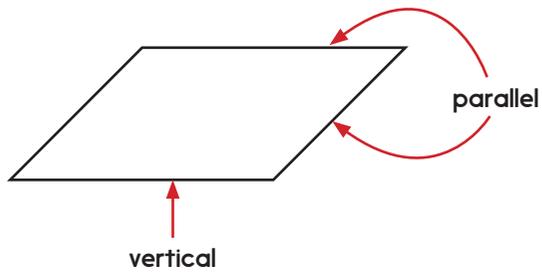
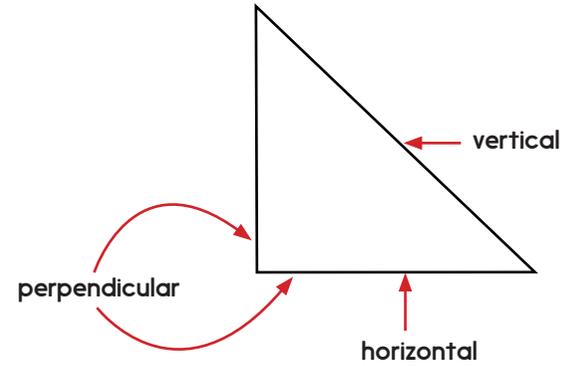
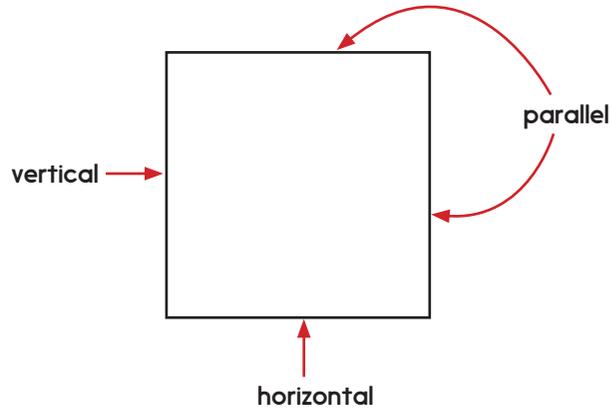


Can you find pairs of **parallel** lines on any of these shapes?

Practice Sheet Mild

Vertical, horizontal, perpendicular and parallel lines

Draw a tick or cross by each label.



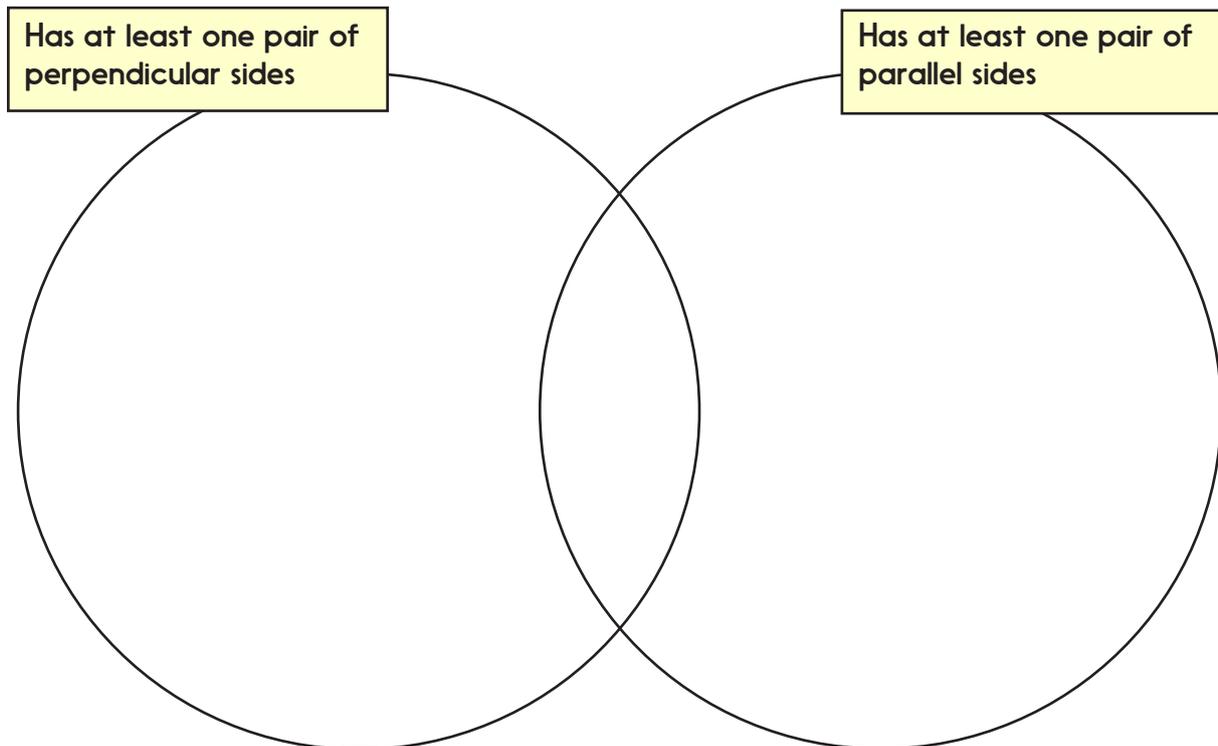
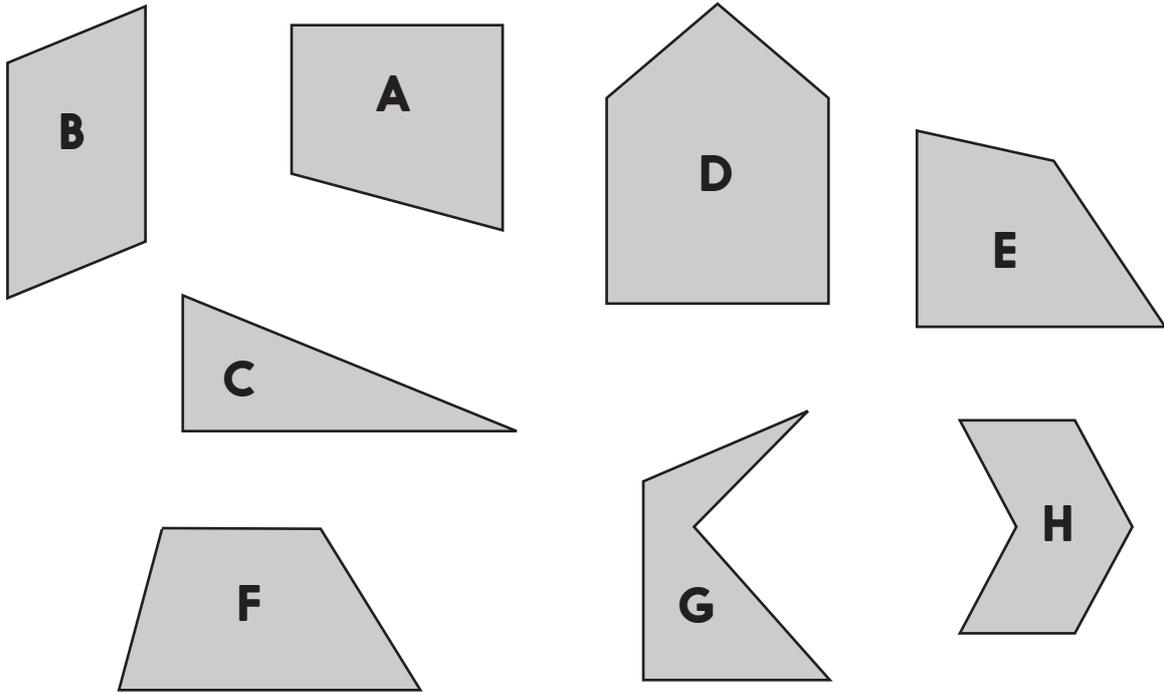
Challenge

Draw your own shape which has horizontal, vertical, perpendicular and parallel lines!

Practice Sheet Hot

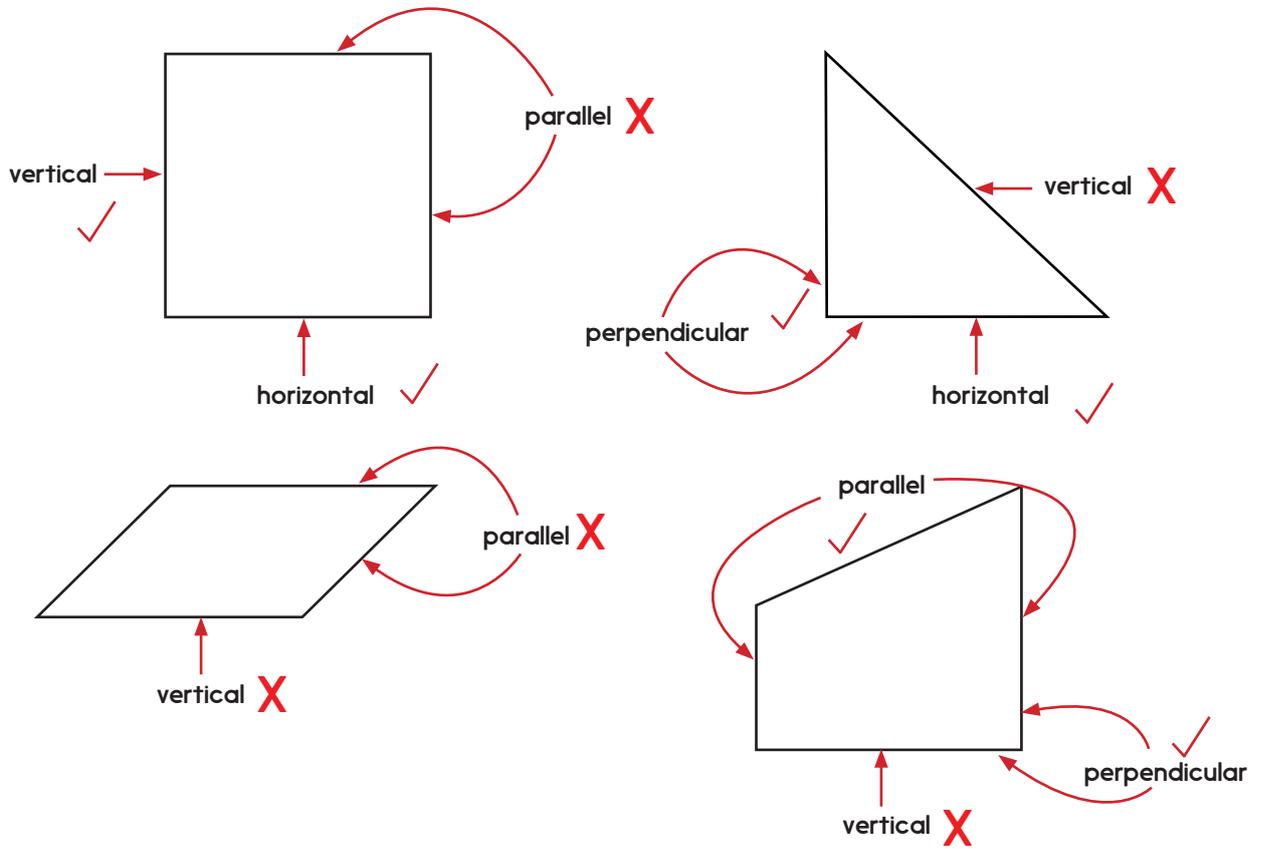
Perpendicular and parallel lines

Write the letter of each shape where it belongs in the Venn diagram.

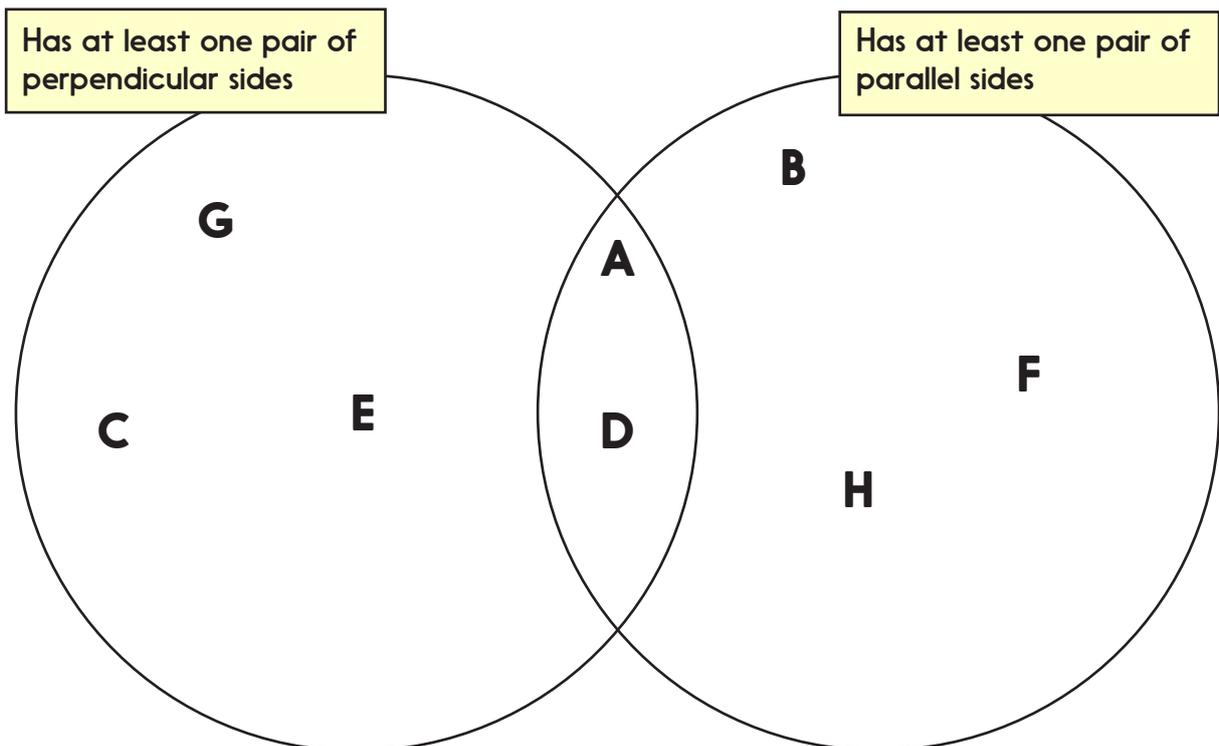


Practice Sheet Answers

Practice Sheet (Mild)



Practice Sheet (Hot)

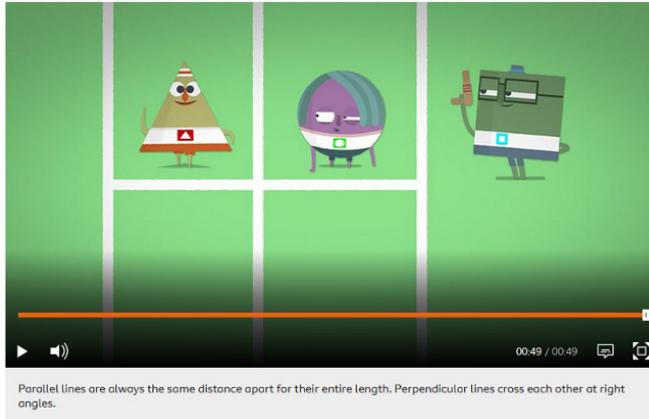


A Bit Stuck?

Parallel and perpendicular lines

What to do:

- Watch this video about parallel and perpendicular lines
<https://www.bbc.co.uk/bitesize/topics/zb6tyrd/articles/zp327hv>



Which of these flags have pairs of perpendicular lines? Which have parallel lines?



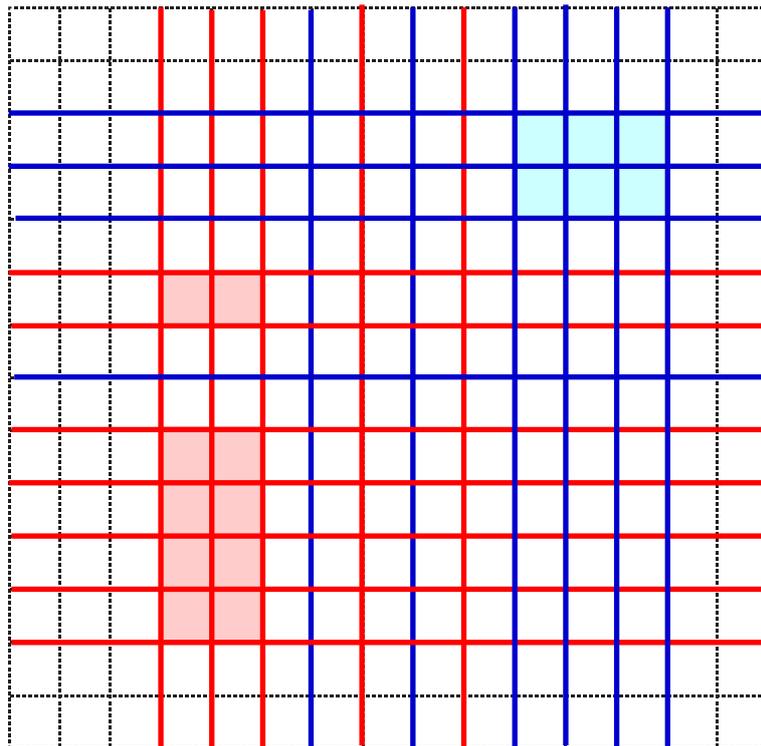
S-t-r-e-t-c-h:

Design your own flag with both parallel and perpendicular lines.

Investigation

My square, not yours!

1. Take a sheet of squared paper and start in the middle of the page. One of you draws a long line.
2. The second player draws another long line in a different colour. This can be parallel with the line the first person drew or perpendicular to it. If it is parallel, it must be no more than one square away from the other line, on either side.
3. Keep taking turns until you have each drawn 13 lines!
Look at your drawing.
4. Shade in any squares which have all four sides drawn in your colour. Your partner does the same in their colour.
5. Count your squares.
The person with the most squares is the winner.
Is it possible to plan ahead, so that you will definitely get some squares of your own?
Play again and this time, try to plan ahead...



In this game, red won!

