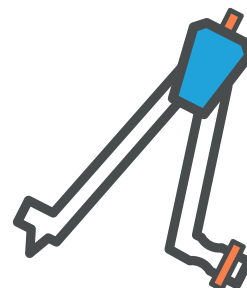
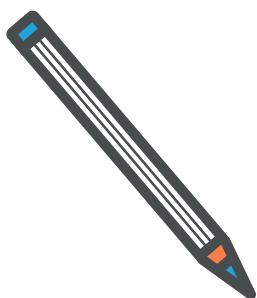
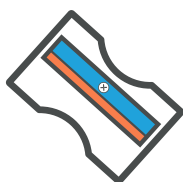


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# Winter activity pack 2018



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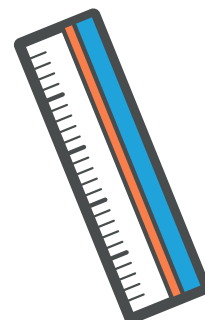
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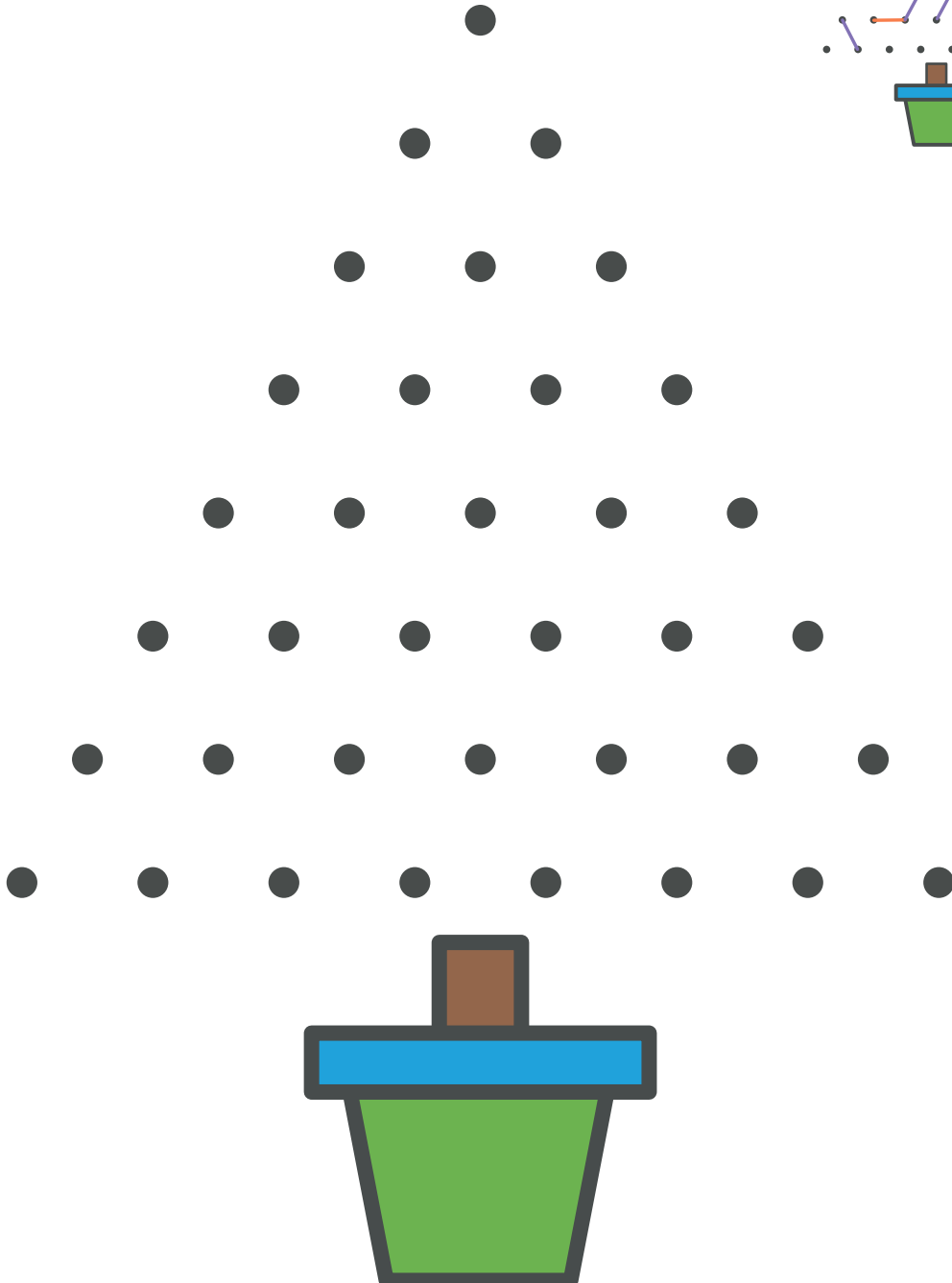
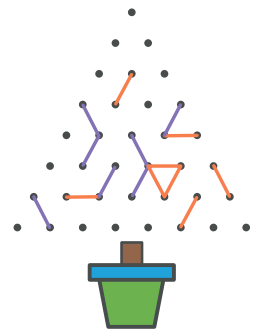




# Decorate the Christmas Tree

With a partner, using different coloured pens, take it in turns to join two dots. First player to complete a triangle wins.

For example

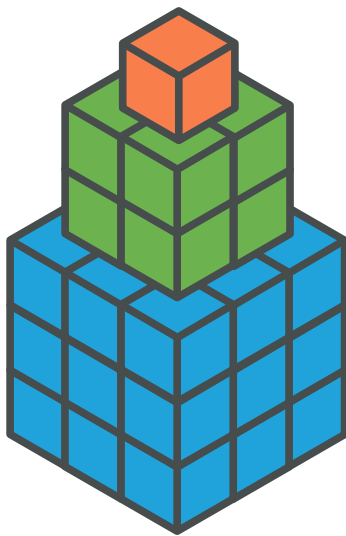


# Presents - Making 36

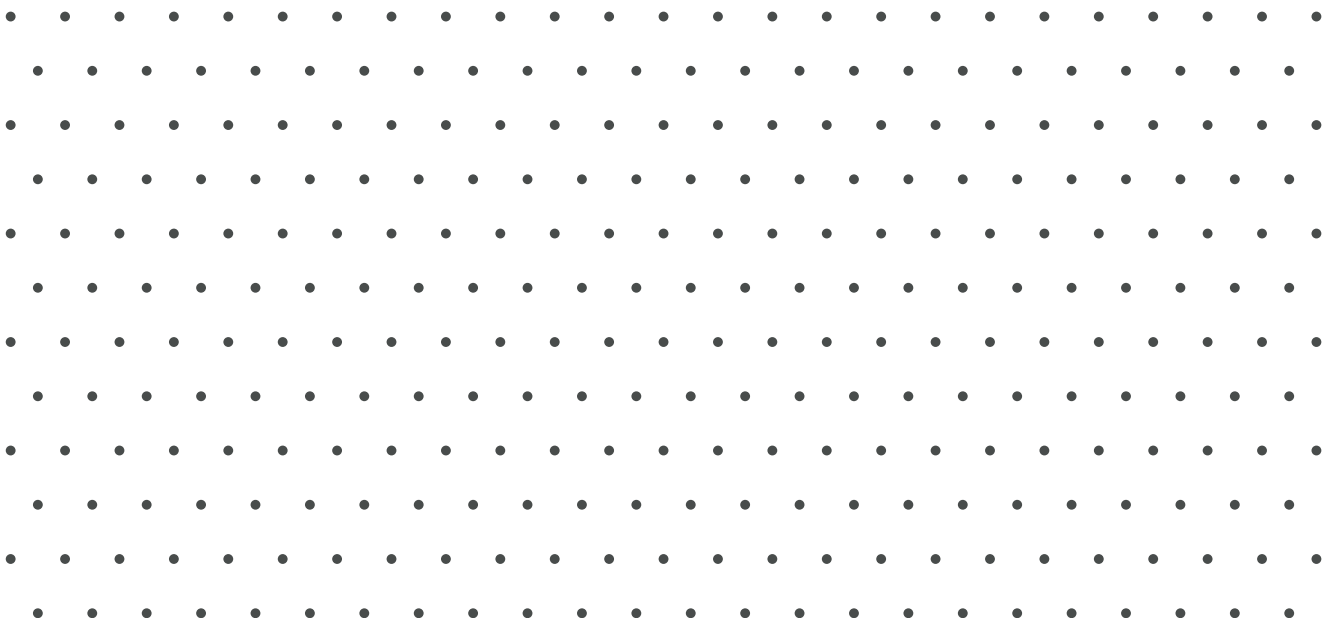
How many different shapes of 36 cubes can you make?

You could use multi-link or cubes.

For example:

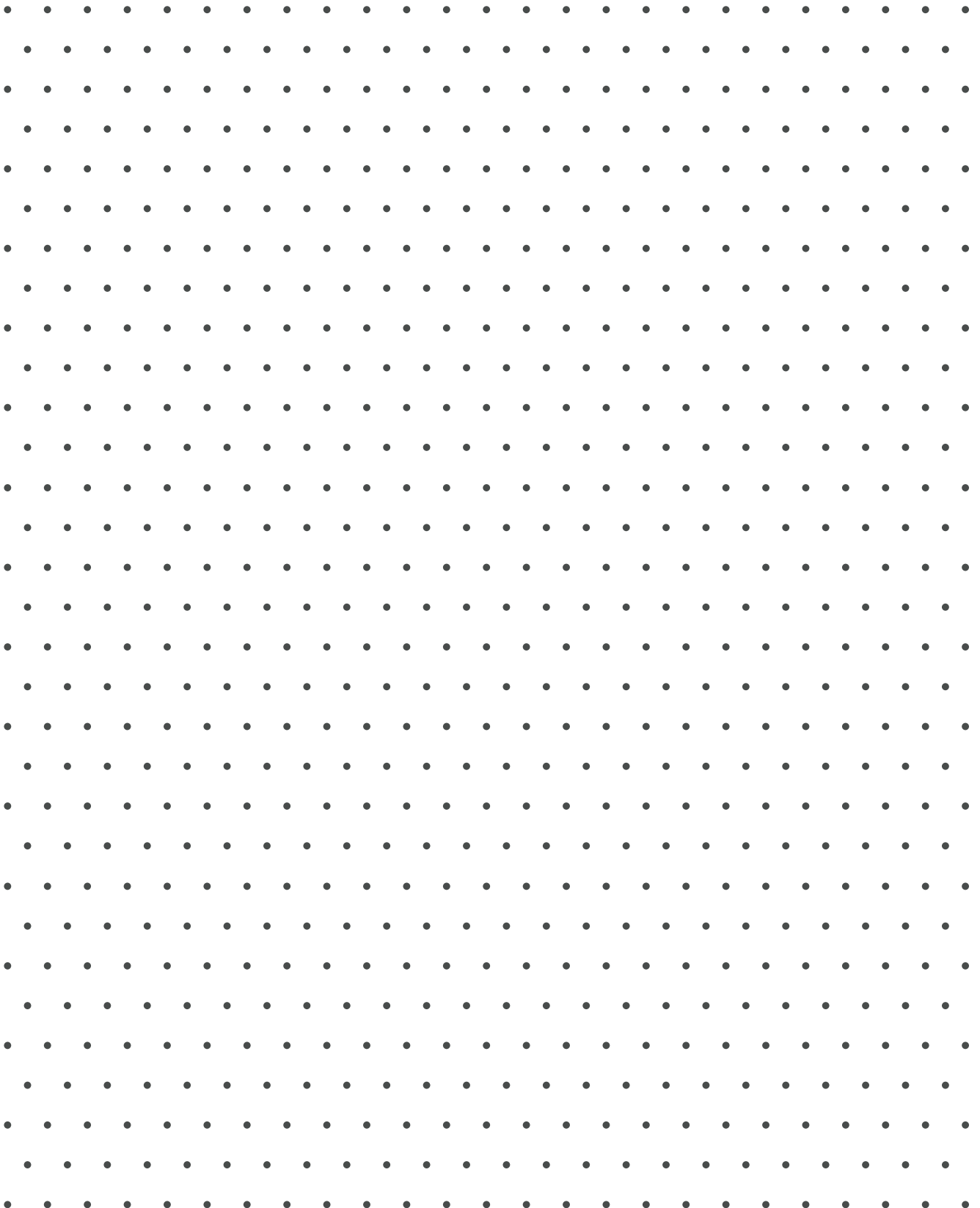


Try drawing the 3D shapes on dotted paper.





# Dotty paper





# Candy cane game

This is a game for two players.

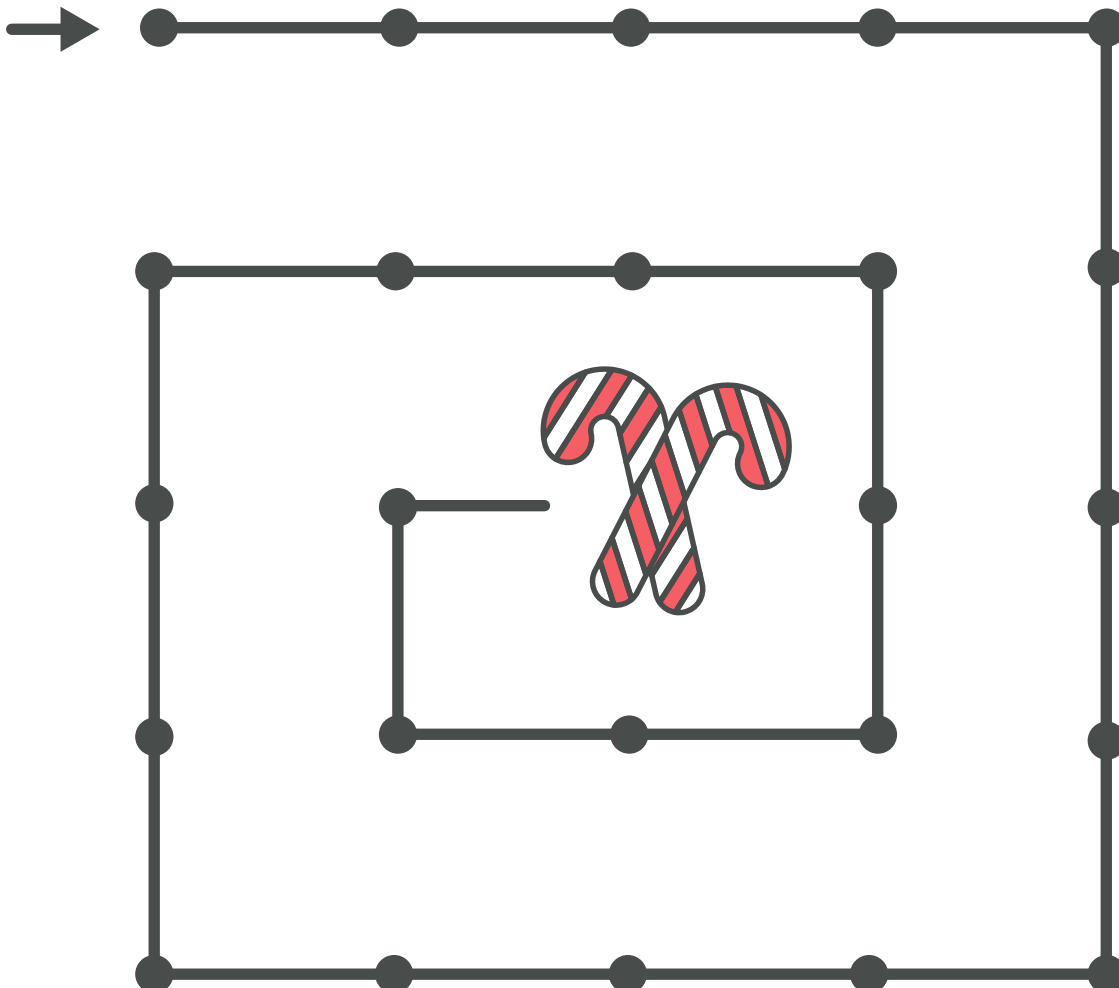
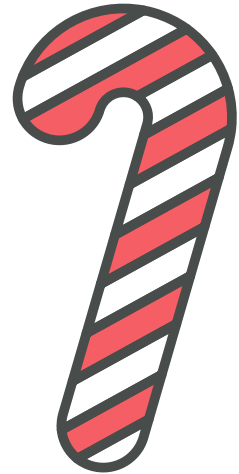
Place a counter on the dot marked with an arrow.

Now take it in turns to move the counter between 1 and 6 dots along the spiral, always inwards.

The first player to reach the candy cane wins.

Try to find a winning strategy.

Change the rule for moving in some way and investigate winning strategies.



# Snowballs

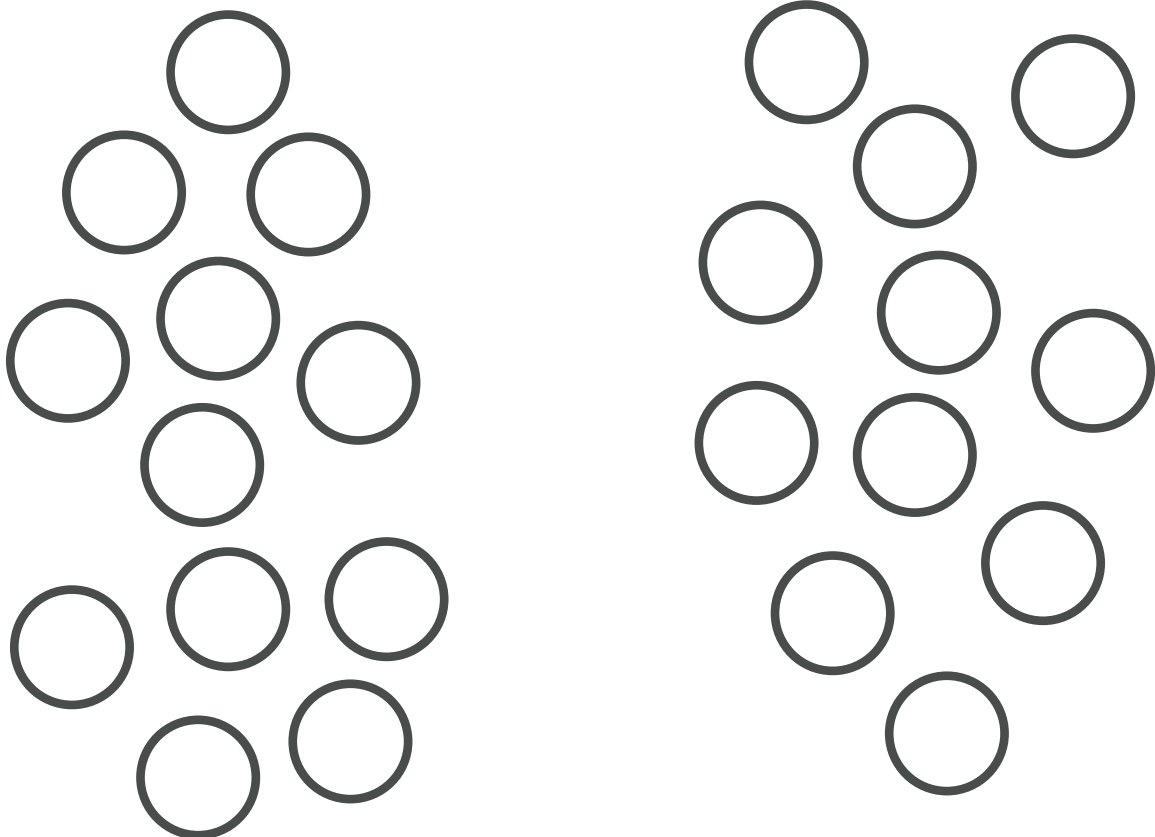
This is a game for 2 players.

Arrange a pile of counters into 2 heaps.

Each player in turn can remove as many counters as they like from one of the heaps, but they must take at least one.

The winner is the player who takes the last counter.

Try to find a winning strategy.





# Maths Mosaic

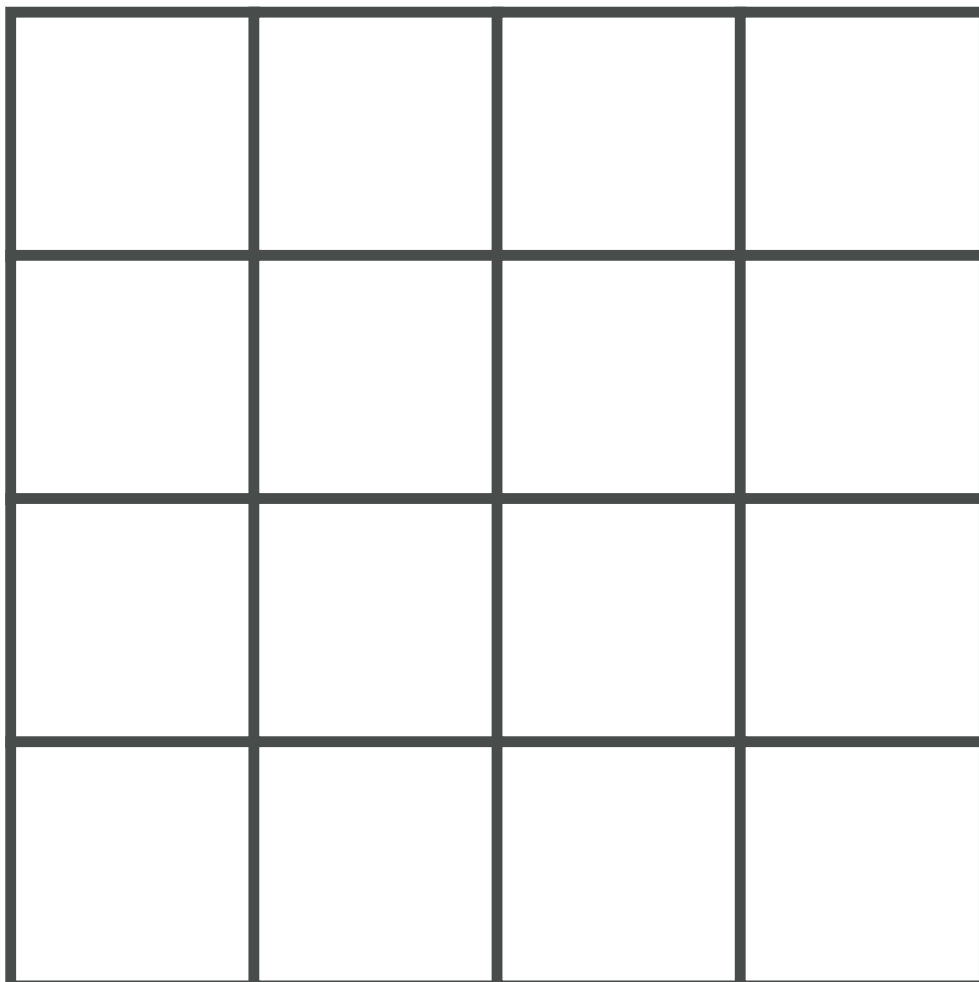
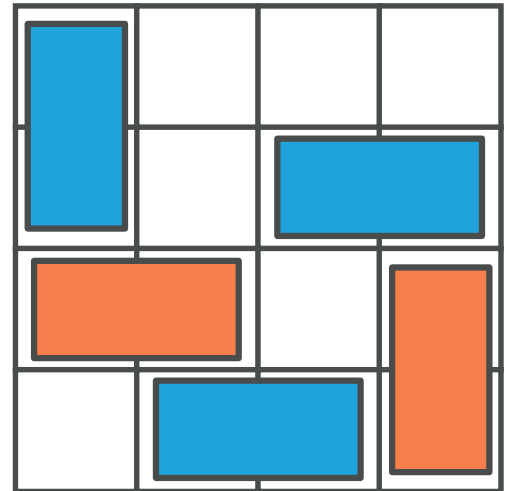
This is a game for 2 players.

You will need 8 coloured paper rectangles (or a supply of 8 dominoes) and a 4 x 4 grid.

Each player, in turn, places a coloured rectangle on the square grid, so that it covers two horizontally or vertically adjacent squares.

After a rectangle has been placed, it cannot be moved. The last player to be able to place a rectangle on the grid wins the game.

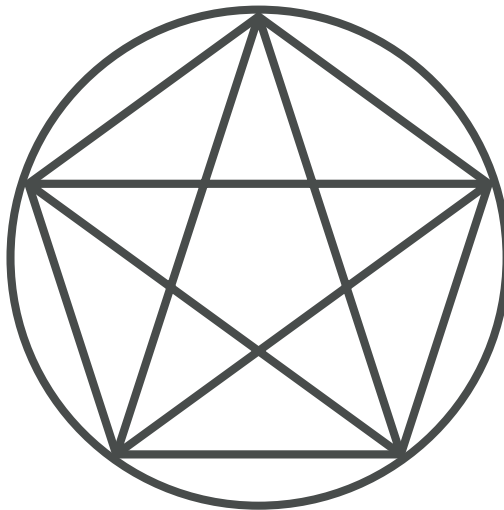
For example, this board is almost completed. Where would you place the next rectangle?



# Shining Stars (The Mystic Rose)

Start by creating a 5-point mystic rose.

1. Use a compass to draw a circle.
2. Work out  $360 \div 5$  (as it is a 5-point mystic rose). Use a protractor to mark this angle around the circumference of the circle. You should end up splitting the circle into 5 equal sections.
3. Now join each point marked to all the other points. This should create a 5-point mystic rose.
4. How many lines are needed to create a 5-point mystic rose?
5. How many triangles can you see?



Create a 6, 7 and 8-point mystic rose.

In each case how many lines are used to make each mystic rose?

How many lines would be needed to create a 100-point mystic rose?

(Hint: Find a quick way to work out the numbers of lines, without actually drawing the rose)



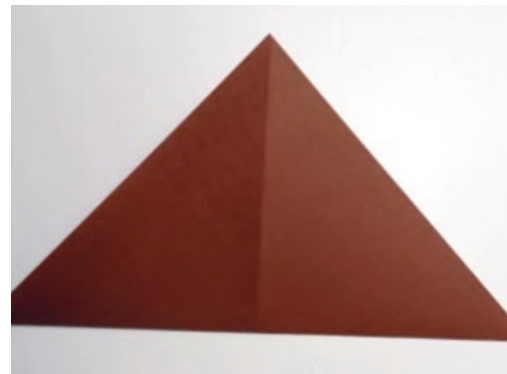
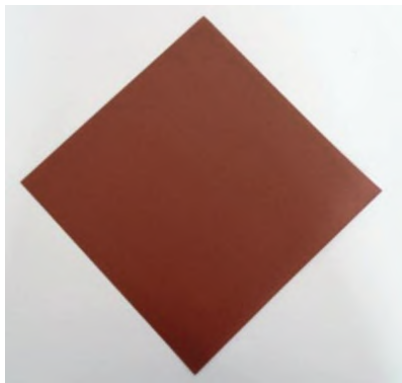
# Rudolph Bookmark

You start by colouring one side of the paper brown.

Then fold diagonally both ways.

Fold into a triangle (coloured side on the outside).

Crease well.



Now fold the tip of the triangle to the bottom (one side only).

You'll see a white square within the triangle now.

Next fold the right corner of the triangle towards the middle.

Do the same with the left one.

Crease well and unfold.

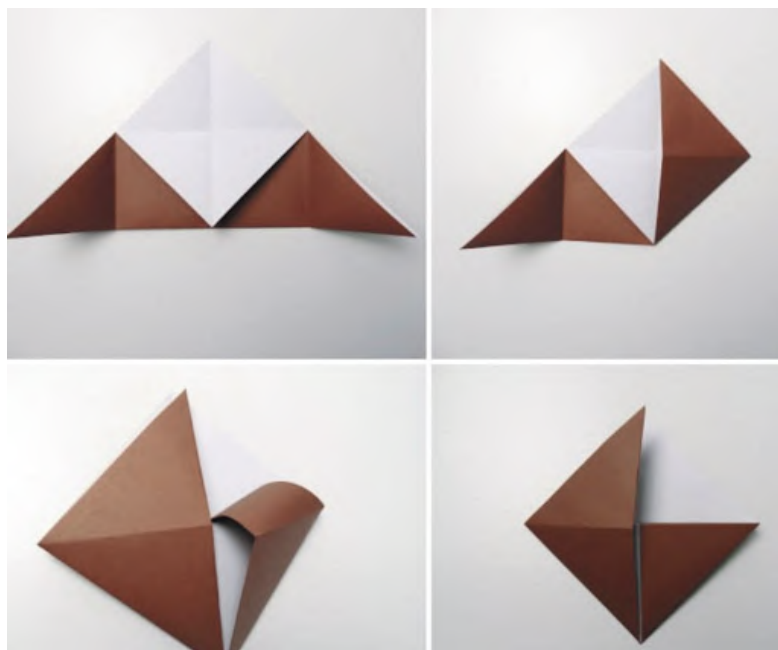
Now fold the right corner towards the top and do the same with the left one.

Crease well.



# Rudolph Bookmark

Tuck both "flaps" in the pocket.  
This reindeer corner bookmark is now ready to be decorated.



Cut two antlers and a red nose and two white circles for the eyes.  
Draw two black spots in the eyes and glue in place.

