

CU Home Learning Challenge:

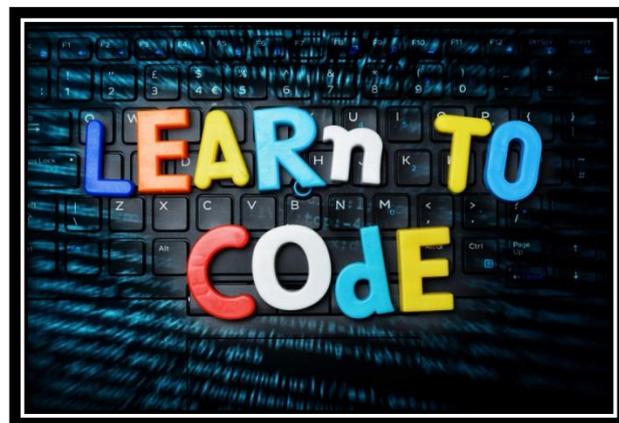
Coding - part 1!



'Coding' is a really important skill - it's being able to work out step-by-step instructions (an 'algorithm'), spotting and developing patterns ('programming'), and working out where they might have gone wrong ('debugging'). The skills needed to 'code' are really useful in everyday life, from being able to follow instructions to working out why something isn't working. So let's get coding! If you enjoy this challenge, give part 2 a try too!

You will need:

- Paper or card
- Colouring pencils or pens
- Pencil or pen
- Scissors



Step 1: Draw and cut out the following: (or you could use the templates on the next page to help if you need to)

- a bee (about 5cms long)
- a bee hive (about 5cms long)
- 4 separate flowers (each about 5cms long and 2x a colour)
- Draw a grid 5 squares long and 4 squares high (each square about 5cms by 5cms) - a sheet of A4 paper is about the right size.
- Direction cards (small squares, with 10x straight arrows, 4x turn right, 4x turn left)

Step 2: You will be 'programming' your bee to find its way through the garden to the flower. Put your bee hive on a corner square (this is the start). Put a flower on another square at the other side of the grid (this will be your finish). Work out the steps your bee will need to make to get from the hive to the flower. Choose the right direction cards your bee will need to follow. This order of cards is called an 'algorithm'.



Step 3: Repeat the activity using different routes. Can you work out how the bee can get to the flower to collect the pollen and take it back to the hive? Perhaps you could add in extra flowers that the bee must visit on the way?

Step 4: Play a game: one person lays out the direction cards (the algorithm) for the other person to follow with the bee. If a mistake is made, can you work out how to put it right? This is called 'debugging'.

Step 5: Can you make your game on a big scale, using a longer algorithm? Could you lay out a grid on the floor (using ribbon, string or tape for the grid, or even draw it using chalk on the ground outside?) Choose a start position, an end position and a route through. You could expand it even further and instead of a grid, use your whole room, house or even garden! Solve any problems by debugging your algorithm.

If you have enjoyed this challenge, why not extend your learning with Part 2 of this challenge.

1 CU Credit for completing this challenge. To claim your credits, please complete your CU Club Reflection Diary and return to your school along with your work.



