Take three different colour blocks, maybe red, yellow and blue. Make a tower using one of each colour. Here’s one with red on top, blue in the middle and yellow on the bottom.

Now make another tower with a different colour on top.

**How many different towers can you make?**
**How will you know that you have found them all?**

Below you can see how two children started this task.

*Jemima says:*

I used multilink cubes to make the towers. First of all, I looked for towers that were red at the top.

*Elias says:*

I drew coloured squares for the blocks. I put them in any old order to start with:

Then I moved red to the bottom and moved yellow and blue up to make a new tower:
I did the same again, moving yellow to the bottom:

I did this again, but realised that would give the first tower. So I went back to my first tower and kept the bottom cube the same, but swapped the top and middle.

Did you start the problem in the same way as either of these children?
What do you think about each method?