Back To The Queer Future #10: Crack The Queer Code

You need to crack a passcode is made up of 4 digits (0-9). No single digit is repeated in the passcode.

You are given five 4-digit numbers. Each number contains 2 (and only 2) digits that are also present in the passcode:

- 1 digit that is present in the passcode and in the same position as it appears in the passcode
- 1 digit that is in the passcode but in a different position than it appears in the passcode

Here are the numbers:

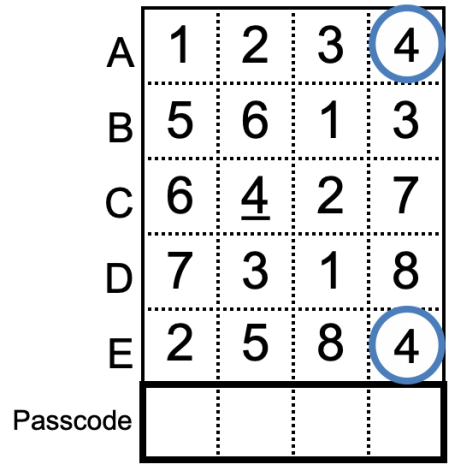
A	1	2	3	4
B	5	6	1	3
C	6	4	2	7
D	7	3	1	8
E	2	5	8	4
Passcode				

Hints

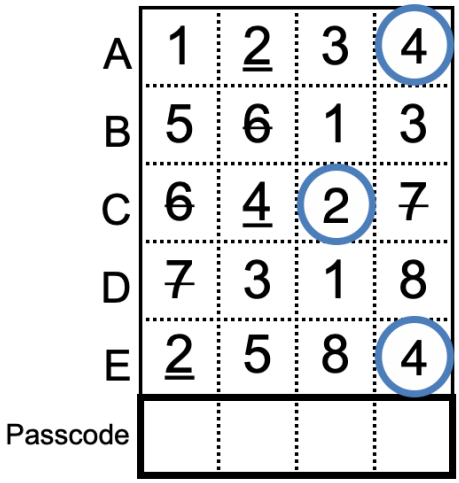
- There aren't any digits you can clearly eliminate to begin with, which makes things tricky!
- You will have to make some suppositions to work out which digits may or may not work - i.e. pick a digit or two and see if you could satisfy the rules with them
- It will help you to mark up digits on the grid as "well-placed," "wrongly-placed" or "eliminated"
- One observation is that the passcode is 4 digits in length, yet you've got 5 numbers with a digit in the correct place in the passcode. This means that there must be at least one digit in the passcode that appears in the same place in two of the lines. There are two digits this may apply to: the 4 that appears in lines A and E, and the 1 that appears in lines B and D.
- Therefore it would make sense to start your suppositions with with the 4 in line A/E or the 1 in line B/D!

Continue reading for a full walkthrough…

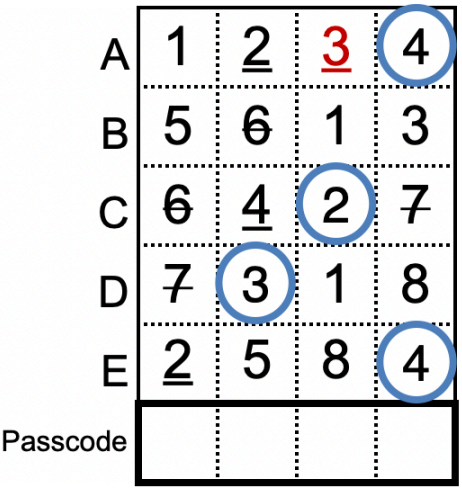
- Let's start with the supposition that the last digit should be 4, which helps us mark the well-placed digit for lines A and E, and the wrongly-placed digit for line C:



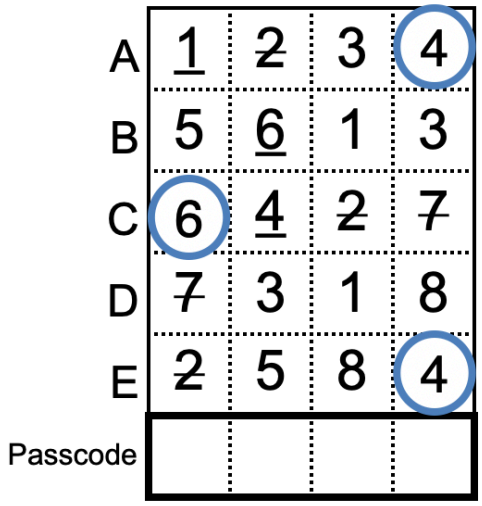
- Looking at line C, that means the well-placed digit for that line would be 6 or 2
- Let's suppose it's the 2 in line C that's well-placed. That means we'd mark up the 2s in line A and E as wrongly-placed, and we can eliminate 6 and 7 from being possible digits, because we've already got all the correct digits for line C



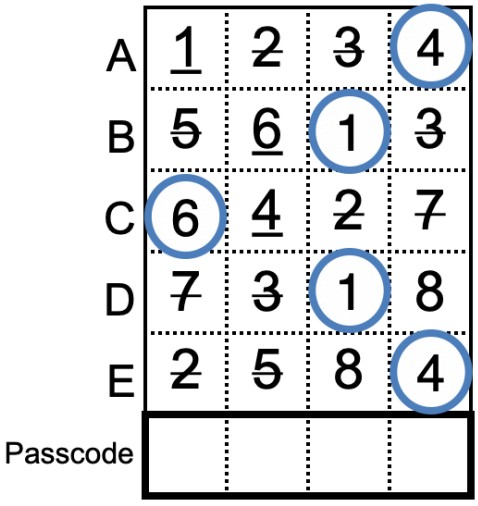
- Then we run into trouble - the only option for the second digit is 3. However, that wouldn't work because it would mean line A had 2 wrongly-placed digits!



- So, let's go back to our supposition about line C and pick 6 as the well-placed number. We can mark the 6 in line B as wrongly-placed, and eliminate 2 and 7



- This gives us a single option for the 3rd digit, which is 1. We can mark the 1 in line A as wrongly-placed, and eliminate 5 and 3



- We only have the 2nd digit to find now! We've marked off all the well-placed digits now, so it must be a wrongly-placed digit. Lines D and E don't yet have a wrongly-placed digit marked off; they both contain an 8, which doesn't appear on another line, so it must be that!

- Hey presto, the passcode is revealed!