Alison and Charlie are playing a divisibility game with a set of 0-9 digit cards.

They take it in turns to choose and place a card to the right of the cards that are already there.

- After two cards have been placed, the two-digit number must be divisible by 2.
- After three cards have been placed, the three-digit number must be divisible by 3.
- After four cards have been placed, the four-digit number must be divisible by 4.

And so on!

They keep taking it in turns until one of them gets stuck.

Play the game a few times on your own or with a friend.

Are there any good strategies to help you to win?

After a while, Charlie and Alison decide to work together to make the longest number that they possibly can that satisfies the rules of the game.

They very quickly come up with the five-digit number 12365. Can they make their number any longer using the remaining digits? When will they get stuck?

What's the longest number you can make that satisfies the rules of the game?

Is it possible to use all ten digits to create a ten-digit number?

Is there more than one solution?