

CALCULATOR FUN

Solving problems using a calculator

Choose one or more of these to work on in your group.

1. How long does a paper round take?

Lisa delivers papers along some roads near her house.
It takes her 1 hour to complete her round.
She delivers papers every day except Sunday.

- How long does she spend delivering papers in a week? (You shouldn't need a calculator for this question!).
- In a year?
- Does she spend more than a week delivering papers in a year?

2. How tall is a tower of multi-link cubes?

- How tall is a tower of 10 cubes? Make a tower and measure it.
- So how tall would a tower of 50 cubes be?
- What about a tower of 500 cubes?
- Or a tower of 3,216 cubes?

The tallest building in the world (when it is completed) will be the Burj Mubarak al-Kabir tower in Kuwait. It will be 1001 metres.

- How many cubes would you need to build a taller tower?

3. How old are you?

- How old are you in years, months, weeks, days, hours, minutes, seconds?
- If you live to be 80, will you have lived more than a million hours?

4. How hard is your heart working?

In one minute, the average heart pumps 4 litres of blood and beats 70 times.

- How many litres of blood does it pump in a year?
- How many times does it beat in a year?
- If you live to be 80, how many times will your heart have beaten?

5. How long would a snail take to slither a mile?

- How far do you think a snail could slither in a minute?
- How about in an hour?
- A day?
- So how long would it take it to slither a mile?

It turns out that you can probably run about a hundred times faster than a snail, so does your answer make sense?

6. Chess board

It is said that when chess was invented that the king of that country was so pleased with the inventor that he promised him anything he wanted. The inventor said he would like 1 grain of rice on the first square, 2 grains on the second square, 4 grains on the third square, 8 grains on the fourth square, and so on.

- If a chess board had only 4 squares, how many grains of rice would that be in total? (Don't use a calculator for this question!).
- How about if it was a 3 x 3 chess board?
- Or a 4 x 4 chess board?
- Carry on calculating for bigger sizes of chess boards.
- If one grain of rice occupies a volume of 2 cubic millimetres, how big a volume would the rice for each of your chess boards occupy?

7. How many houses are there in a city?

- How many houses are there in your road? (Don't worry about an exact answer, just estimate it roughly.)
- How many roads do you think there would be in a small village?
- So how many houses is that?
- How many times do you think a small village might fit into a big village?
- So how many houses is that?
- How many times do you think a big village might fit into a small town?
- So how many houses is that?
- How many times do you think a small town might fit into a big town?
- So how many houses is that?
- How many times do you think a big town might fit into a city?
- So how many houses is that?

There are between 2 and 3 million people in Manchester. Does your answer make sense?