



Welcome to this week's Maths Challenge!

Everyone is encouraged to take part.

There are 3 to 5 merit points for correct solutions, depending on the difficulty of the problem and how impressed the marker is with your solution.

There are house points for students who submit 7 or more correct solutions in one term.

Solutions must be explained in detail, responses with just the answer may be ignored.

Drop your solution in the box in the staffroom by Tuesday.

Year 8 and below

Write a ten-digit number so that the first digit tells how many zeros there are in the number, the second how many ones, the third how many twos, and so forth. 1210 is a four digit example, there is 1 zero, 2 ones, 1 two and 0 threes.

Year 9 and above

Alice rides her bicycle up a certain hill at 10 km h^{-1} and returns at 20 km h^{-1} . What is her average speed for the entire trip?