# Programming Challenge:

A biscuit factory sells boxes of broken biscuits at the end of each production run. They place all the broken biscuits, which vary in weight, in boxes so that all boxes have the same, or as close as possible to the same, weight.

1. Without breaking the biscuits any further, construct an algorithm that will sort the broken biscuits in to boxes of near equal weight. The difference in weight between boxes should be minimal.
2. You are given 1 extra box. Try to improve your algorithm from part 1 so that the difference in weight across the boxes could be reduced even further by using the extra box to hold spare pieces. The weight of biscuits in the extra box should be less than the total weight of any one box, i.e. it only holds spare biscuits. *(The idea of the spare box is that left over pieces could be held over for the next production run and the left over pieces be used to even out the broken biscuits from the next production run).*
3. The factory wants to package the broken biscuits in boxes so that no box weighs more than 500g and no less than 200g. Construct an algorithm that will determine whether or not it is possible to sort the broken biscuits in to boxes of no more than 500g and no less than 200g of biscuits in each. If it is possible to sort the biscuits in to such boxes then do so minimising the difference in weight between each box. If it is not possible then state the minimum number of boxes it would take to sort the biscuits in to boxes with minimal difference in the weight between boxes.