Week 2 Marbles   https://youtu.be/p6Bw3rZRiaA   https://youtu.be/2Xik6XxGREw

The focus strategy is 'Make a Table'. It is a problem solving strategy that you can use to write the information in a more organised way. It helps you to show your mathematical thinking in a logical way enabling you to look critically at the data to find patterns and develop a solution.

A dealer packages marbles in two different box sizes. One size holds 5 marbles and the other size holds 12 marbles.   If the dealer packaged 99 marbles and used more than 10 boxes, how many boxes of each size did he use?

After some marbles are packaged in boxes of 12, the remaining marbles must be completely packaged in boxes of 5. The following table shows what happens when some marbles are packaged in boxes of 12.

Number of boxes of 12	Number of extra marbles	Number of boxes of 5	Total number
1	99 – 12 = 87	17; 2 marbles leftover	--
2	99 – 24 = 75	15	17
3	99 – 36 = 63	12; 3 marbles leftover	--
. . .	. . .	. . .	. . .
7	99 – 84 = 15	3	10

Only two cases (highlighted) can all 99 marbles be completely packaged in 12-marble and 5-marble boxes. However, only the first of these two cases will satisfy the condition that more than 10 boxes must be used. Therefore 2 of the large boxes and 15 of the small boxes were used.