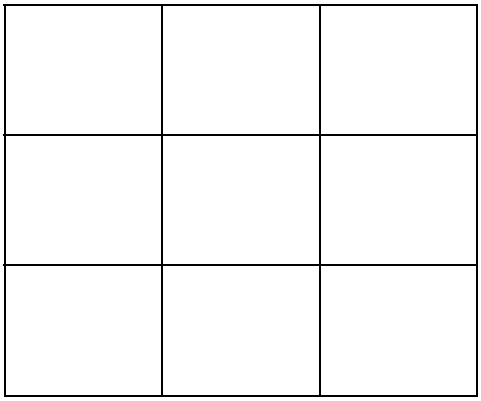
NUMBER SQUARE (1)



The problem

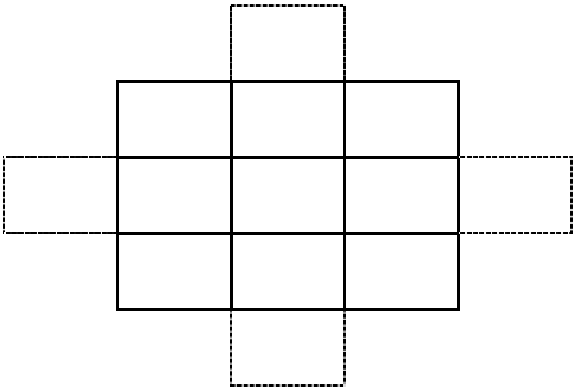
Insert the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9 in the grid above so that:

- each vertical row (up & down)
- each horizontal row (side to side)
- each diagonal row (corner to corner)

all add up to 15.

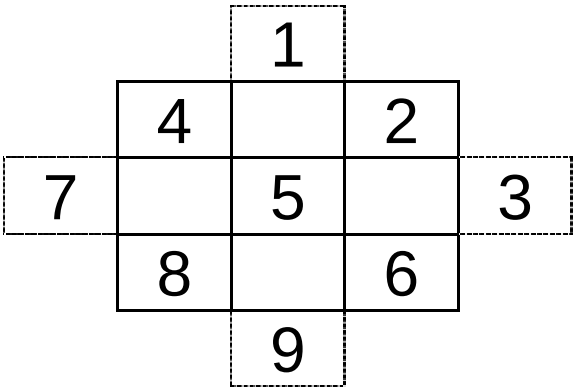
NUMBER SQUARE (2)

The “trick”

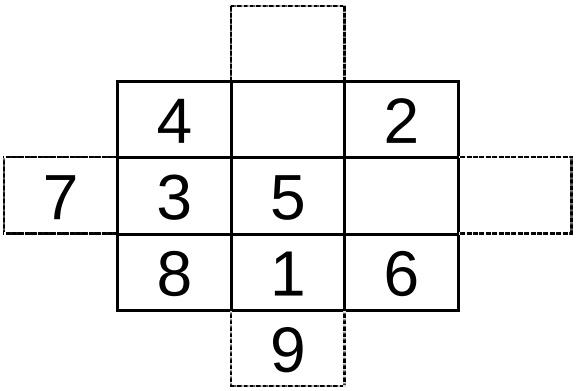


Draw the grid – then add “extra” boxes at top, bottom and sides (see above).

Now insert the numbers 1 – 9 in diagonal lines (as shown below)



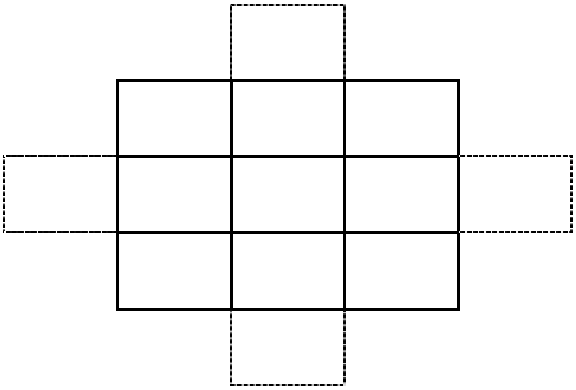
Now “flap over” the numbers in the dotted boxes so that they fit into the furthest opposite box on the grid. (In the example below, the numbers 1 and 3 have been “flapped over”.



When you have “flapped over” all the numbers, check the rows and columns. You will find that they all add up to 15 – and so do the diagonals.

NUMBER SQUARE (3)

And now…



Puzzle 1

Can you alter the square so that every row adds up to 18?

Instead of 1-9, what numbers have you used?

Puzzle 2

Can you alter the square so that every row adds up to 24?

Instead of 1-9, what numbers have you used? The numbers should all be consecutive ("in a row" – with no gaps).

Puzzle 3

Can you alter the square so that every row adds up to 25?

Puzzle 4

Design a 5 x 5 square and insert the numbers 1-25 so that every row adds up to the same number. (Clue: try to apply the "trick".)

Think about it

Do you notice anything about the number squares you have drawn? Consider the row totals. Look at the numbers you have used. Look at the middle square.

Really hard puzzle

I want to design a 5 x 5 number square where each row adds up to 100. What are the 25 consecutive numbers I need to use?