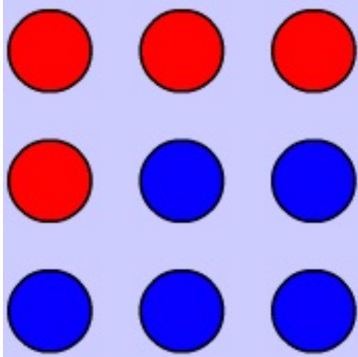# RED EVEN

(a) You must mark the squares in 3 by 3 grid to make 4 red squares and 5 blue squares.

How many ways can you do this so that all the rows columns and diagonals have an even number of red squares?

Two solutions are considered the same if one can be transformed to the other by rotating the square.

(b) Are there any additional solutions if only the rows and columns need to have an even number of red squares?

Help

Cut out counters from scrap card, or use bottle tops, so that you can move them around to make the different arrangements.

To record your results, use squared paper and 2 colours (or write R and B in the positions).
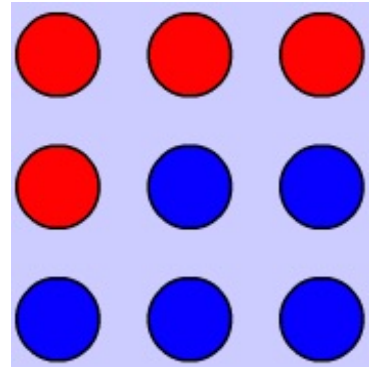
Extension

As an extension task find how many different arrangements you can make with 2 reds and 2 blues **in a row.**

Then choose for yourself a number of reds and blues (e.g. 1 red, 4 blues) and challenge a partner to see who can find the most arrangements in a line