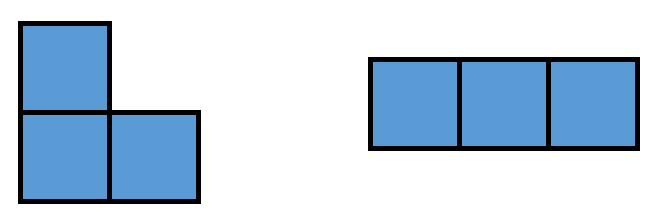
 Triominoes worksheet

A Triomino is a ‘piece’ that is made of three squares put together. They can take either of the orientations below, or rotations of these.



Proposition

Any grid of squares can be covered by triominoes, leaving just one empty square in the corner, for positive integral values of

For , the grid is and the proof is simple.

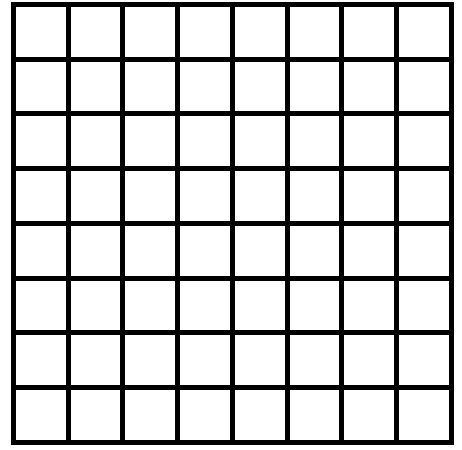
Proposition – Any grid of 2n x 2n squares can be covered by triominoes, leaving just one empty square in the corner, for positive integral values of n. 
For n = 1, the grid is 2 x 2 and the proof is simple. 


Using different colours, shade in triominoes in these grids to prove this statement for larger values of

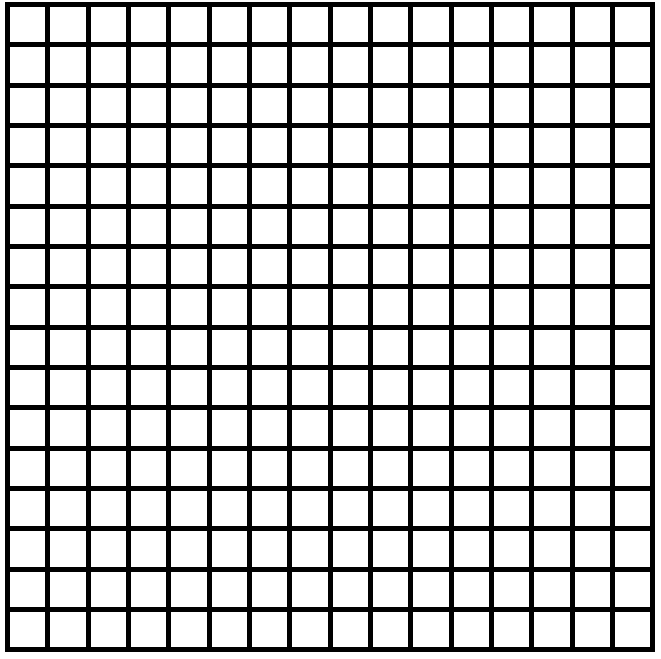
grid.

Using different colours, shade in triominoes in these grids to prove this statement for larger values of n.
n=2,4×4 grid.


grid



grid



Proof

What we are trying to prove is that the number of squares in each of these grids () when divided by 3 has a remainder of 1.

**i.e.** Prove by mathematical induction that is divisible by 3 for all integral values of such that .

Extension – review the practical proof at [Underground mathematics](https://undergroundmathematics.org/divisibility-and-induction/triominoes)