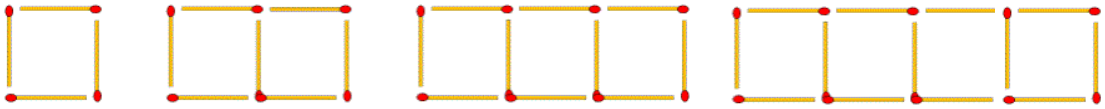
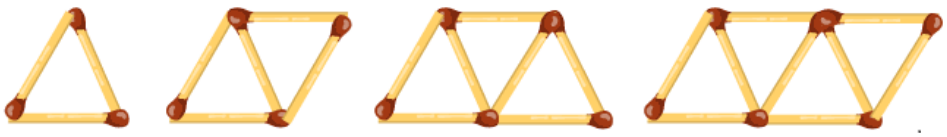
Matchstick Patterns

☞ It is possible to make patterns with very basic things that we are using in our everyday life. Look at the following matchstick pattern of squares in the below figure. The squares are not separate. Two neighbouring squares have a common matchstick. Let's observe the patterns and try to find the rule that gives the number of matchsticks.



In the above matchstick pattern, the number of matchsticks is 4, 7, 10 and 13, which is one more than the thrice of the number of squares in the pattern.
Therefore, this pattern can be defined using the algebraic expression 3x + 1, where x is the number of squares.

☞ **Now, let's make the triangle pattern using matchsticks as shown in the below figure. Here, the triangles are connected with each other.**



In this matchstick pattern, the number of matchsticks is 3, 5, 7 and 9, which is one more than twice the number of triangles in the pattern. Therefore, the pattern is 2x + 1, where x is the number of triangles.