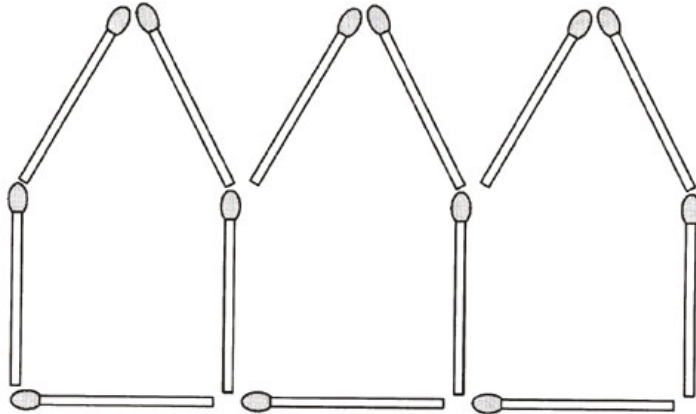


# Matchstick patterns

This task is about patterns and rules.

Christine began making the pentagon pattern below with matches.



She noticed a relationship between the number of pentagons and the total number of matches used, which she recorded on a chart.

Number of pentagons	1	2	3	4	5	6	7	8
Number of matches	5	9						

a) Complete the chart above to show the number of matches used.

b) How many matches would be needed for 30 pentagons? \_\_\_\_\_ matches

c) Complete the rule below which you could use to find the number of matches needed for any number of pentagons.

Rule: "The number of pentagons  $\times$  \_\_\_\_\_ + \_\_\_\_\_ = the number of matches."