

## Alien shape patterns

**This task is about finding a rule for a growing pattern.**

Gerry is using matchsticks to make "alien" shapes. He has made three so far.



## Alien 1



## Alien 2



### Alien 3

- a) Draw Alien 4 in the space below.

- b) Complete the following table.

Alien number	1	2	3	4	5	7	9
Number of matches used	7						

- c) Describe, in words, the rule which links the *Alien number* to the *number of matches* used.

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- d) Using  $x$  for the *Alien number* and  $y$  for the *number of matches*, write your rule as a formula.

$$y = \underline{\hspace{2cm}}$$

- e) Show how to use your formula to work out the number of matchsticks needed for Alien 21.

Number of matchsticks used: \_\_\_\_\_