# 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* =_____

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

Number of matchsticks used: _____