What a View!

You need ☑ a calculator (optional) ☑ a classmate
☑ 2 pieces of coloured overhead transparency (optional)

Activity One

Sparkle the window cleaner has cleaned all the windows in a building that is 18 floors high and has 13 windows in each floor. He charges the building owners for the number of windows he has cleaned. (Each square in the diagram below represents 1 window.)

Sparkle uses this array to help work out how many windows he has cleaned:

The other window cleaners tell him their ways of working out how many windows he has cleaned in this building.

10 x 13

8 x 13

Well, Sparkle,
18 is only 2 away from 20.
20 x 13 = 260, so
18 x 13 = 260 – 2 lots of 13.
That's 260 – 26, which is 234.

10 x 10 = 100
10 x 8 = 80
10 x 3 = 30
3 x 8 = 24
100 + 80 + 30 + 24 = 234

You could go 13 x 10 = 130
and then add another 13 x 10.
That would be 260.
Then take off 26 to get 234.

I'd use halving and doubling to work it out, Sparkle. 18 x 13 = 9 x 26.
9 is close to 10, so that's 260 minus 1 lot of 26. That's 234.
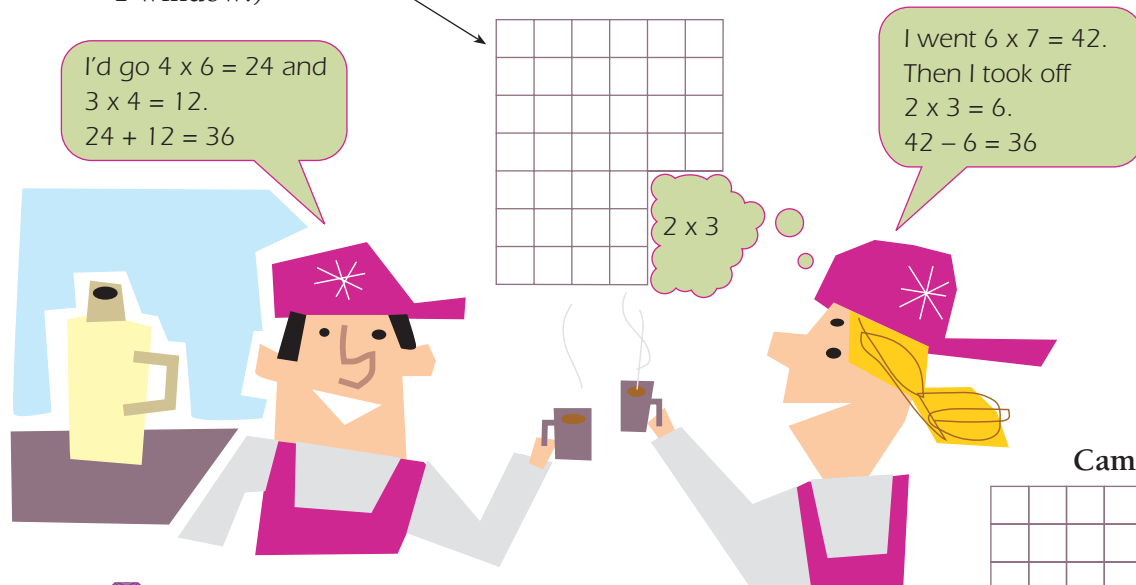
Using multiplication arrays

Complete these equations using two different strategies for each one. You might like to use the array that Sparkle used and some pieces of overhead transparency to check your strategies. Compare your use of strategies with a classmate's.

a. 13 x 17 =
b. 14 x 6 =
c. 19 x 6 =
d. 16 x 4 =
e. 23 x 18 =
f. 19 x 3 =
g. 15 x 9 =
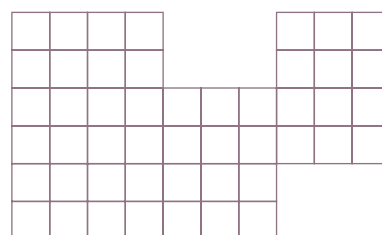h. 7 x 17 =
i. 7 x 28 =
j. 6 x 24 =

Activity Two

Not all the buildings that Sparkle cleans are rectangles.
This is how two of the window cleaners work out how many windows are in this building. (Each square in the 3 diagrams on this page represents 1 window.)

I'd go 4 x 6 = 24 and
3 x 4 = 12.
24 + 12 = 36

2 x 3

I went 6 x 7 = 42.
Then I took off
2 x 3 = 6.
42 − 6 = 36

Camel Towers

1. a. How many windows are in the Camel Towers building? Show two different ways of working this out.

   b. If Sparkle charges $6.30 per window, how much will he charge for cleaning all the windows in Camel Towers? Discuss with a classmate how you worked this out.

Vision Complex

2. a. How many windows are in the Vision Complex? Show two different ways of working this out.

   b. If Sparkle charges $6.30 per window, how much will he charge for cleaning all the windows in the Vision Complex?