

Investigation

Mrs Multiple's cakes

1. Mrs Multiple, the baker, has made 12 cup cakes. She is thinking how to arrange them in her shop window. She likes to arrange them in rectangles like this:



In maths, these rectangles are called arrays.

She could also arrange the 12 cakes like this:



2. How else could she arrange them? Use 12 counters to help you and write down how many ways you found altogether.
3. In how many ways can she arrange 15 cakes in an array? Do you think there will be more or fewer ways of arranging 15 cakes than of arranging 12 cakes?
4. Which number of cakes from 10 to 20 can be arranged in the most ways?

Can bigger numbers of cakes always be arranged in more ways than smaller numbers?

Can you think of a number of cakes between 20 and 30 that can only be arranged in two ways? Which numbers of cakes between 20 and 30 do you think could be arranged in lots of ways? Why?