

## Multiplication and Division: Key Skill 9

### Create and use arrays described in terms of 'rows' and 'columns' as a strategy for multiplication



An **array** is a rectangular diagram divided into rows and columns.

**Multiplication** is a process of repeatedly adding the same number a given amount of times. Multiply, product of, times and lots of all mean the same thing.



Learning to create and use arrays is an important step towards children understanding multiplication and division. Arrays help children to learn how to skip count to multiply or divide. It also helps with fact families!

Arrays create a picture to help children understand multiplication and they can use this to learn their times tables faster. It also prepares children to learn how to find the area of a rectangle in later years.

Children often begin by counting each object in the array and then learn to skip count the rows to find the answer. It is helpful to show that you can count from the rows or the columns of the rectangle e.g. in  $4 \times 2$  you can count 4 rows twice ( $4 + 4$ ) or 2 columns four times ( $2 + 2 + 2 + 2$ ).



Arrays are a grid like pattern. Explore around you and find arrays! It could be a bookshelf, the kitchen drawers or the plates laid at the dinner table. Work out what these arrays are (their rows and columns) and their answer if they were multiplied.

A fun way to show arrays is to bake some muffins or cookies and multiply the rows and columns to work out how many you will make.

Make arrays with items around the house. Challenge yourselves to see who can make the arrays in the fastest time!



**WEB LINKS go to:**

[Notes: Arrays](#)

[Notes: Examples of arrays in a classroom](#)

[Video: Explaining arrays](#)

[Video: Arrays for multiplication](#)

[Game: The array](#)

## Multiplication and Division: Key Skill 10

### Create and use groups, arrays and repeated subtraction as strategies for division



An **array** is a rectangular diagram divided into rows and columns.

**Repeated subtraction** is subtracting the same number again and again in order to find the answer to a division problem.

**Division** is to share into equal groups or parts. Divide, split, quotient, distribute, share equally and separate all mean the same thing.



There are 2 types of sharing problems. Children work with the total to give each group a specific number of items. The first type is the easiest. Here's the difference:

- Share 10 pencils into 5 groups. How many pencils are in each group?
- Share 10 pencils so that each child gets 2 each. How many children get 2 pencils?

Repeated subtraction is a way to explain the idea of division. It is also a skill that can be used to divide on paper or in one's head.

Arrays help by creating a picture for children to understand division. Children often begin by counting each object in the array and then learn to skip count the rows to find the answer. It is helpful to show that you can count from the rows or the columns of the rectangle e.g. in a rectangle that is 3 x 2, you can have 2 rows of 3 ( $6 \div 2 = 3$ ) or 3 columns of 2 ( $6 \div 3 = 2$ ).



At mealtimes, have your child divide dishes or snacks equally among family members. You may want to set up dolls, toys, or other props to act as additional members.

Use a muffin tray and marbles (or anything small) to divide equally into arrays.

Use a number line to jump backwards with repeated subtraction ([see Video: Number line to divide](#)).



**WEB LINKS go to:**

[Notes: Arrays explained](#)

[Video: Repeated subtraction to introduce division](#)

[Video: Repeated subtraction](#)

[Video: Repeated subtraction teacher demonstration](#)

[Video: Number line to divide](#)

[Game: Division](#)

[Game: Repeated subtraction](#)