

Multiplication facts

This ITP allows you to represent multiplication as repeated addition using a grid of blocks or counters. The grid can also be hidden. You first select the number of rows and columns in the grid. As the children count in steps equivalent to the number of blocks or counters in a column, you can identify each additional column using the pointers. As you do so, these are represented as steps, equivalent to the size of the column, along a number line. A similar representation appears on the screen when moving along the rows. One or both number lines can also be hidden. Each number line has an associated calculation, revealed by clicking on the equals sign. Clicking on ? gives the answer to the calculation.

In the example below with 5 rows and 9 columns, when you select to count along the columns the given calculation is:

$$5 \times 9 = 45 \quad [\text{the } 5 \text{ is multiplied by } 9].$$

Selecting to count along rows gives:

$$9 \times 5 = 45 \quad [\text{the } 9 \text{ is multiplied by } 5].$$

The ITP can be used to develop children's understanding of multiplication and to develop links between the different representations and notation. The dynamic images should help children to understand why 5×9 means that the 5 is multiplied by the 9, and to recognise that multiplication is a commutative operation.

click row or column markers to build up a number line as each row or column is coloured

show product

select a shape - block $5 \times 9 = ?$ or 'counter'

show or hide this number line and its calculation

make a grid of shapes with the selected number of rows and columns

rows cols

5 9

quit

reset

i