

Year 4 Multiplication & Division Knowledge Organiser



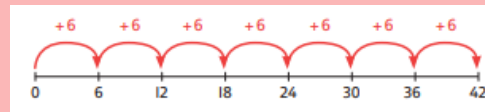
Star Vocabulary

multiple
divide
multiplication fact
division fact
multiplier (factor)
multiplicand (factor)
place value
inverse
how many
array
calculation
total (product)
groups of, lots of

Multiply numbers up to 2-digits by a 1-digit number, progressing to formal written methods.

Multiply numbers up to 4-digits by a one- or two-digit number using formal written methods.

The **number line** is an effective way to represent multiplication and division. It shows grouping clearly and helps with counting on and back.



Arrays visually show multiplication and division. They are clear at showing commutativity, such as $2 \times 5 = 5 \times 2$



The **ten frame** helps to reinforce knowledge of place value.



Multiplication:

$$6 \times 3 = 18$$

Factor (or Multiplier) Factor (or Multiplicand) Product

Sentence Stems

What is the missing number?
_____ x 6 = 300

What is the missing number?
6 x _____ = 6

An athlete runs 12km every day for 5 days. How many kilometres do they run in total?

Misconceptions: Why?

A number multiplied or divided by 0 doesn't equal the original number:
 $0 \times 7 = 0$ (not 7)

Multiplication and addition aren't the same:
 $2+2+2 = 6$ and $3 \times 2 = 6$ but you can use repeated addition to solve multiplication.

How do I know when I need to multiply or divide?

When multiplying by 10 or 100 you don't just put a zero on the end.

This wouldn't work with decimals: 0.5×10 isn't 0.50 the answer is 5!

Factual & Conceptual Fluency progression

Multiplying by multiples of 10 & 100

Multiplying by 0 and 1

Multiplying and dividing by 6

Multiplying and dividing by 9

Multiplying and dividing by 7

11 and 12 times-table

Dividing by multiples of 10 & 100

Dividing by 1

6 times-table

9 times-table

7 times-table