

Maths - Year 6

Calculating 2: Multiplying and dividing

Key Vocabulary

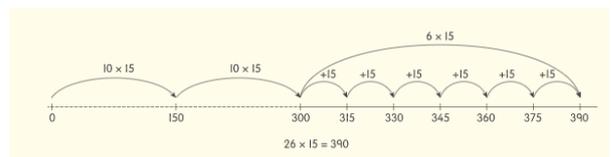
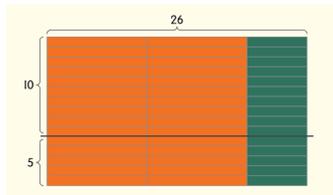
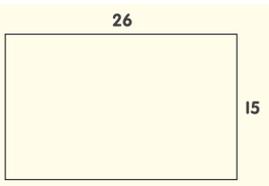
Factor	A number that divides into another number exactly.
Multiple	The product of two whole numbers.
Array	A rectangular arrangement of objects or numbers in rows and columns.
Dividend	The number in a problem that is being divided.
Divisor	The number you are dividing by.
Quotient	The result of dividing one number by another.
Scaling	Describes the amount by which something is increased or reduced to make it larger or smaller in proportion.
Equivalence	At least two numbers or quantities are the same or equal to each other.

Mathematical Skills

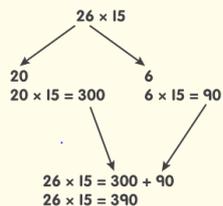
- Use an array to describe and explain a multiplying calculation.
- Explain how they carried out a calculation clearly, using mathematical language.
- Explain, using example calculations, how factors can be used to simplify a multiplying calculation.
- Explain, using example calculations, how partitioning can be used to simplify a multiplying or dividing calculation.
- Suggest more than one way of partitioning numbers in order to simplify a multiplying or dividing calculation.
- Reason, that if, e.g. $\frac{1}{5}$ of a whole amount is 24 then the whole amount is given by 24×5 .
- Describe and explain the effect of multiplying or dividing by 10, 100 or 1000.
- Simplify a dividing calculation by identifying a suitable common factor by which to multiply or divide the dividend and divisor.

Mathematical Methods

- Using factors and the associative property when multiplying e.g. a section of seating in a stadium contains 15 rows of seats with 26 seats in each row. Calculate the number of seats using a mental method.



- Using the associative and distributive properties when multiplying e.g. 26×15



$$24 = 2 \times 2 \times 2 \times 3$$

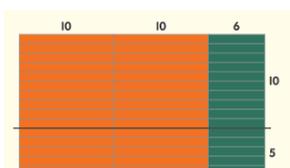
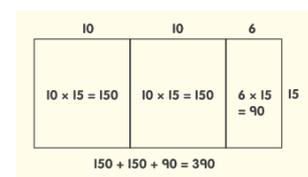
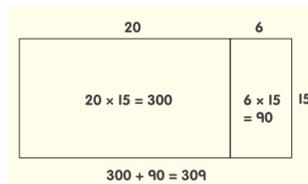
$$24 = 3 \times 2 \times 2 \times 2$$

$$24 = 2 \times 2 \times 2 \times 3$$

$$26 \times 15 = (20 \times 15) + (6 \times 15)$$

$$= 300 + 90$$

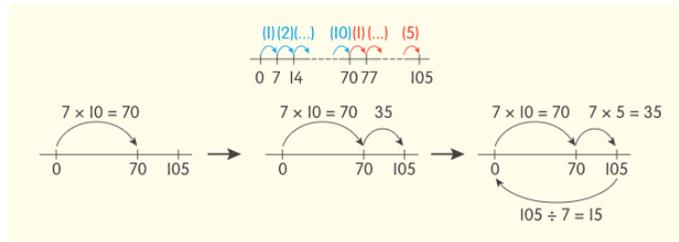
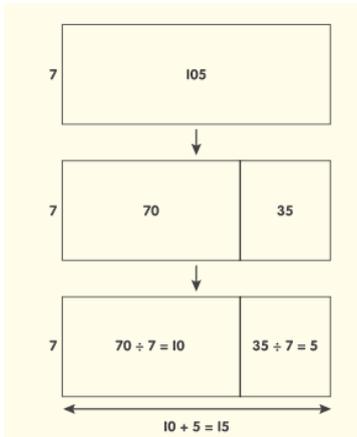
$$= 390$$



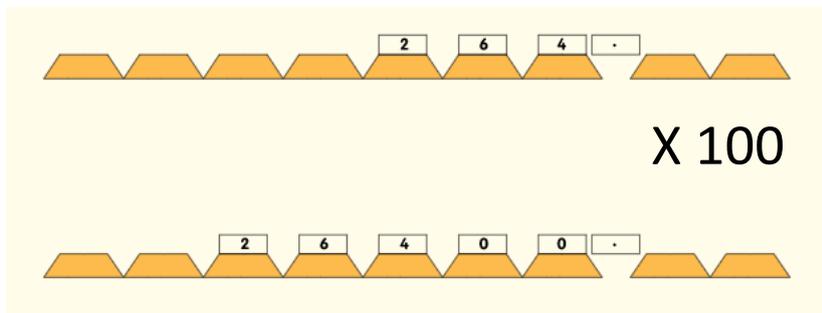
- Using the distributive property when dividing e.g. $105 \div 7$

$$\begin{aligned} 105 \div 7 &= (70 \div 7) + (35 \div 7) \\ &= 10 + 5 \\ &= 15 \end{aligned}$$

$$\begin{aligned} 105 \div 7 &= (84 \div 7) + (21 \div 7) \\ &= 12 + 3 \\ &= 15 \end{aligned}$$



- Multiplying and dividing by 10, 100, 1000.



- Using common factors when dividing
e.g. $128 \div 8$

factors when dividing

$$128 \div 8 = (80 \div 8) + (48 \div 8) = 10 + 6 = 16$$

and

$$128 \div 8 = 32 \div 2 = 16$$

$$126 \div 18 = (90 \div 18) + (36 \div 18) = 5 + 2 = 7$$

and

$$126 \div 18 = 63 \div 9 = 7$$

$$96 \div 24 = (48 \div 24) + (48 \div 24) = 2 + 2 = 4$$

and

$$96 \div 24 = 48 \div 12 = 4.$$

Can you..?

- Use a mental method to solve:

$$372 \times 17$$

$$485 \times 26$$

$$217 \times 26$$

$$196 \div 14$$

$$552 \div 24$$

$$896 \div 32$$