

# Maths - Year 6

## Calculating 2: Multiplying and dividing

### Key Vocabulary

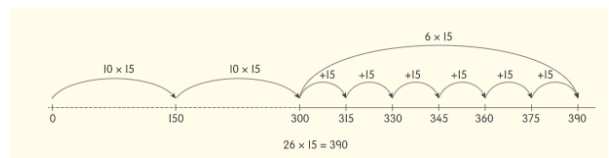
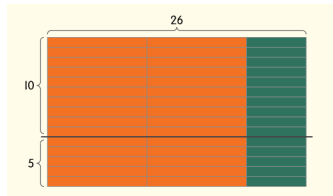
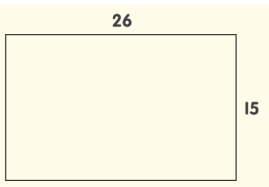
|             |   |
|-------------|---|
| Factor      | A number that divides into another number exactly.  |
| Multiple    | The product of two whole numbers.   |
| Array       | A rectangular arrangement of objects or numbers in rows and columns.  |
| Dividend    | The number in a problem that is being 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

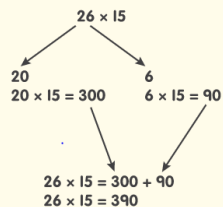
- Use an array to describe and explain a multiplying calculation.
- Explain how they carried out a calculation clearly, using mathematical language.
- Explain, using example calculations, how factors can be used to simplify a multiplying calculation.
- Explain, using example calculations, how partitioning 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  $24 \times 5$ .
- 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.  $26 \times 15$



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

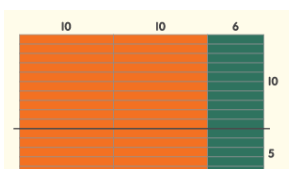
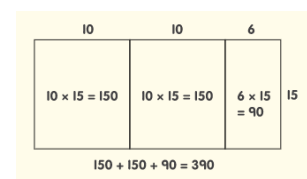
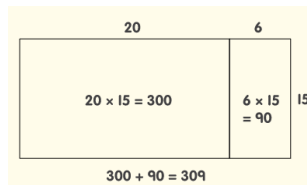
$$24 = 3 \times 2 \times 2 \times 2$$

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

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

$$= 300 + 90$$

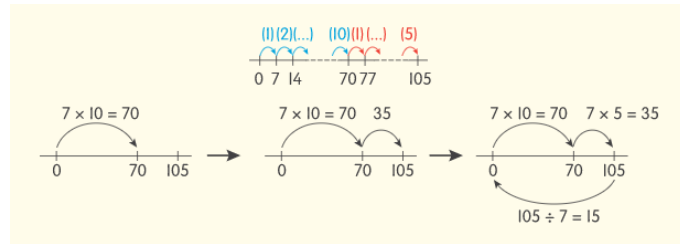
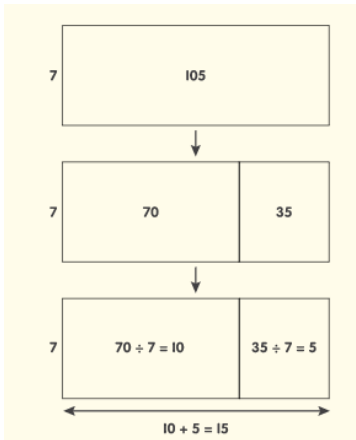
$$= 390$$



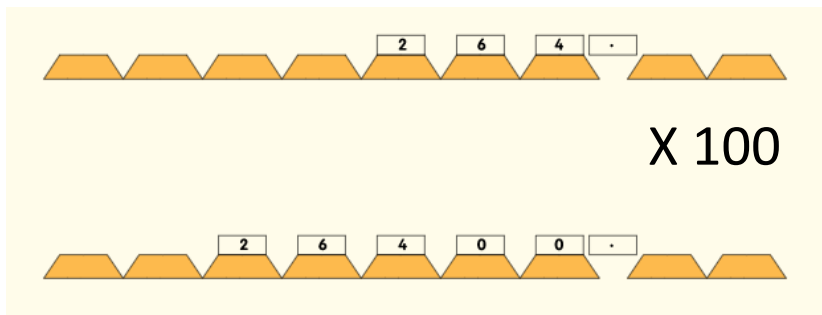
- Using the distributive property when dividing e.g.  $105 \div 7$

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

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



- 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:

$$372 \times 17$$

$$485 \times 26$$

$$217 \times 26$$

$$196 \div 14$$

$$552 \div 24$$

$$896 \div 32$$