

Unit 6 Decimals: Multiplication and Division

Introduction

Learning objectives

This unit aims to give participants an understanding of

- multiplying whole numbers and decimal numbers
- using long multiplication and the Box method for calculations
- using multiplication in contexts
- the use of BODMAS in calculations
- division with whole numbers and decimals.

Facts to remember

Long multiplication This can be achieved through the standard method

For example,

$$\begin{array}{r}
 36 \\
 \times 17 \\
 \hline
 360 \\
 252 \\
 \hline
 612
 \end{array}$$

but there are other methods, including the Box method, illustrated below for 36×17 .

×	30	6		
10	300	60	360	(adding along the row)
7	210	42	252	
	510	102	612	(column total or new total)
				(adding down the columns)

BODMAS This is an acronym to help with the order of calculations. It represents:

B Brackets first

O

D Divide

M Multiply

A Add

S Subtract

$$\begin{aligned}
 \text{For example, } 16 - (2 \times 3) &= 16 - 6 \\
 &= 10
 \end{aligned}$$

or

$$\begin{aligned}
 6 \times 6 - 30 \div 2 &= 36 - 15 \\
 &= 21
 \end{aligned}$$

$$\begin{aligned}
 \text{whereas } (6 \times 6 - 30) \div 2 &= (36 - 30) \div 2 \\
 &= 6 \div 2 \\
 &= 3
 \end{aligned}$$