

In this unit, I will:

- Find common factors and multiples
- Learn about prime, square and cube numbers
- Learn about the order of operations
- Solve mental calculations

Year 6

Four Operations

Key vocabulary

factor	Numbers that when multiplied together form a product
common factor	A whole number that divides two or more other numbers exactly.
multiple	A number that can be divided by another number a certain number of times without a remainder.
common multiple	A multiple that is shared by two or more numbers
prime	A number greater than 1 with only two factors – themselves and 1
composite	Whole numbers that can be divided by numbers other than itself and 1
squared (x2)	The result when a number has been multiplied by itself.
cubed (x3)	The result when a number has been multiplied by itself twice
order of operations	A rule that tells the correct sequence of steps for evaluating a maths calculation.
brackets	A pair of symbols used to enclose sections of a mathematical calculation.
inverse operations	An opposite operation – one reverses the effect of the other.

How does this unit build on prior learning?

In this unit, children use their knowledge of the four operations to consider specific properties of numbers. They learn about the order of operations and mental methods, before moving on to work with fractions in Unit 4.

Before they start this unit, it is expected that children:

- are fluent in their multiplication tables
- understand the terms, and are able to find, factors and multiples
- understand and can use the four operations.

National Curriculum Link**Year 6 Number – Addition, Subtraction, Multiplication and Division**

- Identify common factors, common multiples and prime numbers.
- Use their knowledge of the order of operations to carry out calculations involving the four operations.
- Perform mental calculations, including with mixed operations and large numbers.
- Solve problems involving addition, subtraction, multiplication and division.

Year 5 Number – Multiplication and Division

- Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).

Common Multiples

Multiples of 3

3	...	18	21	24	...	39	42
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Multiples of 7

7	14	21	28	35	42
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Common multiples: 21, 42...

Squares and Cubes

Square numbers result from a number being multiplied by itself (e.g. $5 \times 5 = 25$):

1, 4, 9, 16, 25, 36, 49, 64, 81, 100

Cube numbers result from a number being multiplied by itself twice ($2 \times 2 \times 2 = 8$):

1, 8, 27, 64, 125

Reason from Known Facts

$$90 \div 10 = 9 \quad \text{so } 90 \div 20 = 4.5 \text{ and } 90 \div 5 = 18$$

$$16 \times 9 = 144 \quad \text{so } 1.6 \times 9 = 14.4$$

$$4352 \div 17 = 256 \quad \text{so } 256 \times 18 = 4352 + 256 = 4608$$

$$3786 + 2850 = 6636 \quad \text{so } 4786 + 2850 = 7636$$

$$\text{and } 2786 + 3850 = 6636$$

$$\text{and } 8636 - 3786 = 4850$$

Common Factors

Factors of 48

1	2	3	4	6	8	12	16	24	48
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Factors of 30

1	2	3	5	6	10	15	30
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Common factors: 1, 2, 3, 6

Primes

A prime number has only 1 and itself as factors: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43

A composite number has factors other than 1 and itself.

Mental Calculations and Estimation**Order of calculations:**

$$50 \times 34 \times 2 = 50 \times 2 \times 34 = 100 \times 34 = 3400$$

$$\text{Money: } \pounds 8.99 + \pounds 3.49 = \pounds 12.48$$

$$\text{Use } \pounds 9 + \pounds 3.50 = \pounds 12.50 \text{ and subtract } 2\text{p}$$

Estimate on a number line



Subdivide line to estimate: 17