



DAWSAN'S

Maths

DICTIONARY

Grades 4 - 8
(C.A.P.S. Compliant)

S. Edwards & D. Williams



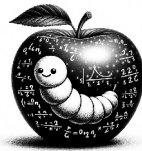
DAWSAN'S
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This book

EXCERPT

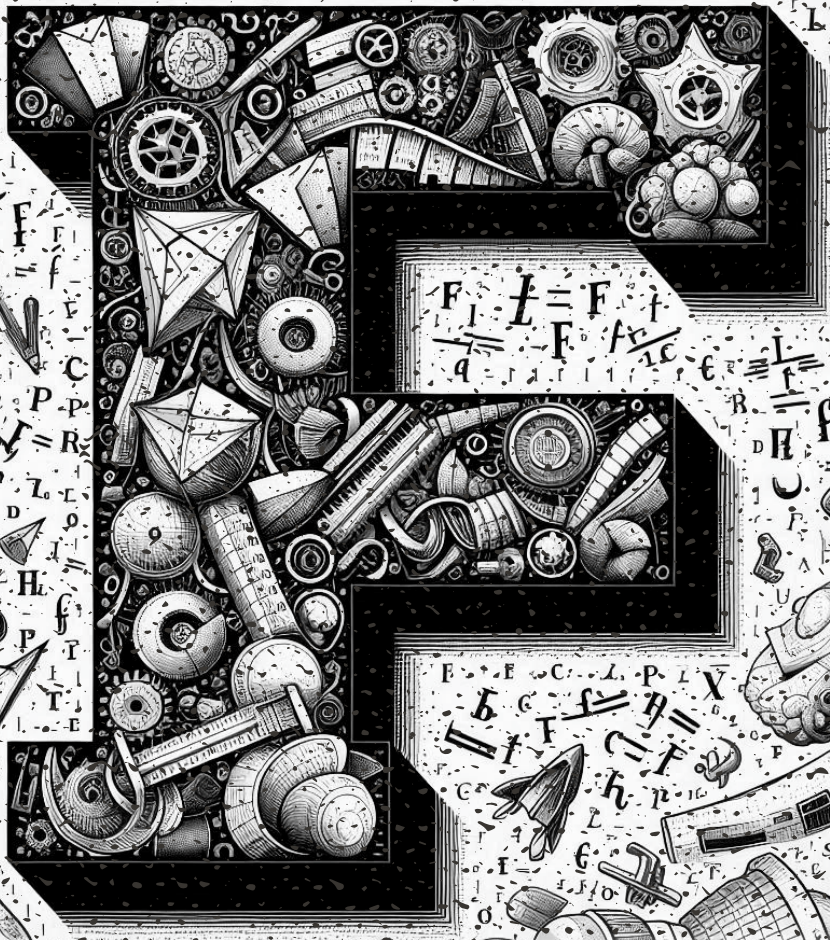
covers all aspects of the syllabus
from Grade 4 to Grade 8.



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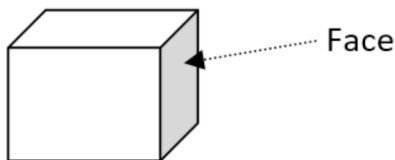
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FACE:

One of the polygons on a solid figure.

Example:

**FACTOR:**

A number that is multiplied by another number to find the product.

Example:

$$\begin{array}{ccccccc} 6 & \times & 2 & = & 12 & & \\ & & \swarrow & & \downarrow & & \\ & & \text{Factors} & & \text{Product} & & \end{array}$$

6 and 2 are factors of 12.

All factors of 12 are: 1; 2; 3; 4; 6; 12

FAHRENHEIT:

A temperature scale that registers the freezing point of water as 32° and the boiling point as 212° at one atmospheric pressure.

FIBONACCI SEQUENCE:

The infinite sequences of numbers formed by adding two previous numbers to get to the next number.

Example: 1; 1; 2; 3; 5; 8; 13; 21; ...

FINITE:

This describes a set which does not have an infinite number of elements, that is, a set which can have its elements counted using natural numbers.

FIVE NUMBER SUMMARY:

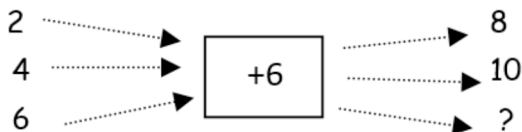
See **DATA REPRESENTATION** Box and Whiskers.

FOOT: (*Plural FEET*)

See **TABLES OF MEASURE: BRITISH** page 122.

FLOW DIAGRAM:

This is a mathematical diagram using an input and a rule to determine an output.



FORMULA: (*Plural Formulae*)

This is an equation containing symbols and numbers to do a specific calculation.

Example: Area of a rectangle = length x breadth

$$A = l \times b$$

FORMULAE:

see pages 126 - 130.

FRACTIONS:

(*Also known as common fractions or vulgar fractions*).

A fraction is a number that names a part of a whole or part of a group.

- **NUMERATOR:** The top part of a fraction▶ 4
- **DENOMINATOR:** The bottom part of a fraction▶ 5
- **PROPER FRACTION:** This is a fraction with a smaller numerator than denominator. *Example:* $\frac{7}{8}$ is a proper fraction.
- **IMPROPER FRACTION:** This is a fraction which has a larger numerator than denominator. *Example:* $\frac{12}{7}$ is an improper fraction.
- **MIXED NUMBER:** A number made up of a whole number and a fraction. *Example:* $5\frac{5}{8}$ is a mixed number.

- **SIMPLIFYING (or REDUCING):** This is to express the fraction in its lowest terms by dividing the numerator and the denominator by their common factors.

Example: $\frac{15}{20} \left(\div 5 \right) = \frac{3}{4}$

- **CONVERTING** a common fraction to a decimal fraction:
See DECIMAL SYSTEM.

- **EQUIVALENT FRACTIONS:** These are fractions that name the same amount or part.

Example: $\frac{1}{2} = \frac{3}{6} = \frac{6}{12}$

FRACTIONS: THE FOUR OPERATIONS

- **ADDITION:**

Example: $\frac{1}{2} + \frac{4}{5} + \frac{3}{10}$

Step 1 : Convert all fractions to fractions with a common denominator.

$$\frac{1}{2} + \frac{4}{5} + \frac{3}{10} = \frac{5}{10} + \frac{8}{10} + \frac{3}{10}$$

Step 2: Add the numerators.

$$\frac{5}{10} + \frac{8}{10} + \frac{3}{10} = \frac{16}{10}$$

Step 3: Simplify (or reduce).

$$\frac{16}{10} = 1\frac{6}{10} = 1\frac{3}{5}$$

- **ADDITION OF MIXED NUMBERS:**

Example: $1\frac{1}{2} + 2\frac{2}{3} + 3\frac{1}{6}$

Step 1: Add the whole numbers and record the sum.

6

Step 2: Find a common denominator of the fractions.

$$6\frac{1}{2} \left(\frac{3}{6}\right) + \frac{2}{3} \left(\frac{4}{6}\right) + \frac{1}{6}$$

Step 3: Add your numerators.

$$6\frac{3}{6} + \frac{4}{6} + \frac{1}{6} = 6\frac{8}{6}$$

Step 4: Simplify (or reduce).

$$6\frac{8}{6} = 7\frac{2}{6} = 7\frac{1}{3}$$

• SUBTRACTION:

Example: $\frac{11}{12} - \frac{1}{3}$

Step 1: Convert all fractions to fractions with a common denominator.

$$\frac{11}{12} - \frac{1}{3} \left(\frac{4}{12}\right)$$

Step 2: Subtract the numerators.

$$\frac{11}{12} - \frac{4}{12} = \frac{7}{12}$$

• SUBTRACTION OF MIXED NUMBERS:

Example: $2\frac{1}{4} - 1\frac{5}{6}$

Step 1: Subtract the whole numbers and record the difference.

$$2 - 1 = 1$$

Step 2: Find a common denominator of the fractions.

$$1\frac{1}{4} \left(\frac{3}{12}\right) - \frac{5}{6} \left(\frac{2}{12}\right)$$

Step 3: As you are unable to subtract $\frac{10}{12}$ from $\frac{3}{12}$ you must express the whole number as a fraction of the same denominator (in this case twelfths).

$$\left[1 \left(\frac{12}{12}\right) + \frac{3}{12} \right] - \frac{10}{12} = \frac{15}{12} - \frac{10}{12} = \frac{5}{12}$$

• MULTIPLICATION:

Example: $\frac{4}{5} \times \frac{5}{8}$

Step 1: Multiply your numerators and record the product.

$$\frac{4}{5} \times \frac{5}{8} = \frac{20}{40}$$

Step 2: Multiply your denominators and record the product.

$$\frac{4}{5} \times \frac{5}{8} = \frac{20}{40}$$

Step 3: Simplify (or reduce).

$$\frac{20}{40} = \frac{1}{2}$$

• MULTIPLICATION OF MIXED NUMBERS:

NOTE: Multiplication of fractions with mixed numbers CANNOT be calculated unless all mixed numbers are expressed as improper fractions.

NEVER multiply the whole numbers separately.

Example: $2\frac{1}{2} \times 1\frac{7}{8}$

Step 1: Convert to improper fractions.

$$\left(2\frac{1}{2}\right) \frac{5}{2} \times \left(1\frac{7}{8}\right) \frac{15}{8}$$

Step 2: Multiply your numerators and record the product.

$$\frac{5}{2} \times \frac{15}{8} = \frac{75}{16}$$

Step 3: Multiply your denominators and record the product.

$$\frac{5}{2} \times \frac{15}{8} = \frac{75}{16}$$

Step 4: Simplify (or reduce).

$$\frac{75}{16} = 4\frac{11}{16}$$

• DIVISION:

NOTE: Division of fractions is computed (calculated) in the same way as multiplication of fractions except that the second fraction in your sum MUST BE INVERTED (that is turned upside down) then change the division sign to a multiplication sign.

Example: $1\frac{1}{2} \div \frac{3}{4}$

Step 1: Convert to improper fractions.

$$\frac{3}{2} \div \frac{3}{4}$$

Step 2: Invert the second fraction and change the sign.

$$\frac{3}{2} \times \frac{4}{3}$$

Step 3: Multiply numerators and record the product.

$$\frac{3}{2} \times \frac{4}{3} = \frac{12}{6}$$

Step 4: Multiply the denominators and record the product.

$$\frac{3}{2} \times \frac{4}{3} = \frac{12}{6}$$

Step 5: Simplify (or reduce).

$$\frac{12}{6} = 2$$

FREQUENCY:

The number of times an outcome occurs in an experiment.

FREQUENCY TABLE:

See **DATA REPRESENTATION**.

FROM:

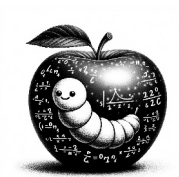
When recording a list of numbers from two given amounts, the two given amounts must be included.

Example: List the odd numbers from 27 to 35.

27; 29; 31; 33; 35; 37

FURLONG:

See **TABLES OF MEASURE: BRITISH** page 122.





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