



MODULE 1

OPERATION OF FRACTION

FRACTION

A representation of a part of a whole.

NUMERATOR

The number above the fraction bar; it indicates how many parts are being considered.

DENOMINATOR

The number below the fraction bar; it indicates the total number of equal parts the whole is divided into.

Expressing Units as Fractions

The lesson demonstrates how to convert real-world units into fractions:

- Time: 6 hours as part of a day = $6/24$ or $1/4$.
- Quantity: 6 as part of a dozen = $6/12$ or $1/2$.
- Calendar: 18 weeks as part of a decade = $18/540$ or $1/30$.
- History: 25 years as part of a century = $25/100$ or $1/4$.

Types of Fractions

- Proper Fraction: The numerator is strictly less than the denominator (e.g., $5/12$).
- Improper Fraction: The numerator is greater than or equal to the denominator (e.g., $15/12, 13/13$).
- Mixed Number: A combination of a whole number and a proper fraction (e.g., $3\frac{4}{5}$).

Key Procedures & Rules

- Simplifying (Lowest Terms): Find the Greatest Common Factor (GCF). Divide both the numerator and denominator by that GCF until they can no longer be divided.
- Mixed to Improper Conversion: Use the "Multiply, Add, Copy" method:
 - a. Multiply the denominator by the whole number.
 - b. Add that product to the numerator.
 - c. Copy the original denominator.
- Equivalent Fractions: Fractions that have different numbers but represent the same value (e.g., $4/12$ and $5/15$ both simplify to $1/3$).

Comparing & Ordering Fractions

To compare two fractions, use cross-multiplication:

- Multiply the first numerator by the second denominator.
- Multiply the first denominator by the second numerator.
- Application: This is used to rank items (e.g., recipe ingredients) from "the most" to "the least".

Thank You