

FIRST TERM E-LEARNING NOTE

SUBJECT: MATHEMATICS

CLASS: JSS 2

SCHEME OF WORK

WEEK	TOPIC
1.	Basic Operation of Integers
2.	Whole Numbers and Decimal Numbers, Multiples and Factors
3.	LCM & HCF and Perfect Squares
4.	Fractions as Ratios, Decimals and Percentages
5.	Household Arithmetic Relating to Profit, Interest, Discount and Commission
6.	Approximation of Numbers Rounding off to Decimal Places, Significant Figures
7.	Multiplication and Division of Directed and Non Directed Numbers
8.	Algebraic Expressions
9.	Algebraic Fractions (Addition and Subtraction)
10.	Simple Algebraic Equations
11.	Revision of First Term Lessons
12.	Examination

WEEK ONE BASIC OPERATION OF INTEGERS

- Definition
- Indices
- Laws of Indices

Definition of Integer

An integer is any positive or negative whole number

Example:

Simplify the following

$$(+8) + (+3) \quad \text{(ii)} \quad (+9) - (+4)$$

Solution

$$(+8) + (+3) = +11 \quad \text{(ii)} \quad (+9) - (+4) = 9-4 = +5 \text{ or } 5$$

Evaluation

Simplify the following

$$(+12) - (+7) \quad \text{(ii)} \quad 7 - (-3) - (-2)$$

Indices

The plural of index is indices

$10 \times 10 \times 10 = 10^3$ in index form, where 3 is the index or power of 10. $P^5 = p \times p \times p \times p \times p$. 5 is the power or index of p in the expression P^5 .

Laws of Indices

1. Multiplication law:

$$a^x \times a^y = a^{x+y}$$

E.g. $a^5 \times a^3 = a \times a \times a \times a \times a \times a \times a \times a \times a = a^8$

$$y^1 \times y^4 = y^{1+4}$$

$$= y^5$$

$$a^3 \times a^5 = a^{3+5} = a^8$$

$$4c^4 \times 3c^2$$

$$= 4 \times 3 \times c^4 \times c^2 = 12 \times c^{4+2} = 12c^6$$

Class work

Simplify the following

(a) $10^3 \times 10^4$ (b) $3 \times 10^6 \times 4 \times 10^2$ (c) $p^3 \times p$ (d) $4f^3 \times 5f^7$

Division law

(1) $a^x \div a^y = a^x \div a^y = a^{x-y}$

Example

Simplify the following

(1) $a^7 \div a^3 = a \times a \times a \times a \times a \times a \times a \div a \times a \times a$
 $a^{7-3} = a^4$

(2) $10^6 \div 10^3 = \dots$