NAME:……………………………………………CLASS:…………………..
SECOND TERM: *E– LEARNING NOTES*
JS 2 (BASIC 8)

SUBJECT: MATHEMATICS

SCHEME OF WORK

WEEK	TOPIC
1.	Revision of First Term Work.
2.	Simple Equations: Harder problems on Algebraic Fractions.
3.	Word Problems on algebraic Fractions. World problem leading to Simple Algebraic Fractions.
4.	Linear inequality in one variable. Graphical representations of solutions of linear inequalities in one variable.
5.	Graphs: plotting points on the Cartesian plane (the axis and plotting of points). Linear Equation in two variables – plotting the graph of Linear Equations in two variables
6.	More work on plotting and joining points to form plane shapes on Cartesian Planes.
7.	Graphs: Linear graphs from real life situations - plotting linear graphs from real life situation. Quantitative reasoning – solving quantitative aptitude problems.
8.	Plane Figures/shapes: Revision on properties of parallelogram rhombus and kite.
9.	Scale drawing – Drawing to scale to represent given distances. Solving problems on quantitative aptitude related to plane shapes/ figures
10.	Revision
11.	Examination.

WEEK 1
Topic: Revision of last term's work using past examinations questions papers.
NOTE: Teachers should ensure all topics that seem complex are thoroughly explained for better understanding. Evaluation should be given and marked.

WEEK 2

TOPIC: SIMPLE EQUATION AND WORLD PROBLEMS

DEFINITION OF EQUATIONS
Equations are open sentences which have the equal sign. Solving an equation means finding a value of the unknown which makes the equation true. Any letter *a, f, c, x* etc. can be used as unknown. The set of values which make an equation true is called the truth set.

Example 1
Solve the following simple equations:
  a. $3a - 8 = 10$
  b. $10x - 7 = 27$
  c. $4 + 5y = 19$

   Solution
a. $3a - 8 = 10$
   Method 1

   $3a - 8 + 8 = 10 + 8$
   $3a = 18$
   $\frac{3a}{3} = \frac{18}{3} = 6$

   Method 2
   $3a - 8 = 10$
   $3a = 10 + 8$
   $3a = 18$
   $a = \frac{18}{3} = 6$

Note: If a number is moved from one side to an equation over the equal sign to the other side, the sign of the number changes.

  b. $10x - 7 = 27$
   Method 1
   $10x - 7 + 7 = 27 + 7$
   $10x = 34$
   $\frac{10x}{10} = \frac{34}{10}$
   $x = 3.4$
   Method 2

$$10x - 7 = 27$$
$$10x = 27 + 7$$
$$x = \frac{34}{10} = 3.4$$

EXAMPLE 2

Solve the following equations:

a. $4(3y-2) = 6$

b. $2(x-8) = 3(x+5)$

Solution

a. $4(3y-2) = 6$

Removing the bracket we have

$12y-8=6$

Solving the equation

$12y= 6 +8 =14$

$$y= \frac{14}{12} = \frac{7}{6} = 1\frac{1}{6}$$

b. $2(x-8) = 3(x+5)$

Removing the brackets

$2x-16 = 3x+15$

Collecting the like terms together and solving

$-16-15 = 3x-2x$

$-31 = x$

Or

$x = -31$

EXAMPLE 3

Solve the following equations

a. $\frac{a-2}{3} = 4$

b. $5 = \frac{2x-3}{7}$

c. $\frac{2}{3x} + \frac{2}{2} = \frac{1}{x}$

Solution

a. $\frac{a-2}{3} = 4$

Multiply both sides by 3

$$\frac{a-2}{3} \times 3 = 4 \times 3$$

$a-2 = 12$

a =12+2
a = 14

b. $5 = \frac{2x-3}{7}$

Multiply both sides by 7

$5 \times 7 = 2x - 3$

$35 + 3 = 2x$

$38 = 2x$

$x = \frac{38}{2}$

$x = 19$

c. $\frac{2}{3x} + \frac{2}{2} = \frac{1}{x}$

Collecting the like terms together

$\frac{2}{3x} - \frac{1}{x} = \frac{-1}{x}$

(L.C.M of 3 and x is 3x)

$\frac{2-3}{3x} = \frac{-1}{2}$

$\frac{-1}{3x} = \frac{-1}{2}$

$-2 = 13x$

$\frac{-2}{-3} = x \qquad \therefore x = \frac{2}{3}$

WORD PROBLEM ON SIMPLE EQUATIONS

This is the same as solving simple equations.

EXAMPLE:

a. I think of a number, add 3 to it and then divide the result by 5. If the answer equals the original number, what is the number?

b. The average cost of a number of erasers is 50k. if all the erasers cost ₦ 20, find the total number of erasers.

Solution:

a. Let the number be x.

3 added to the number becomes: x+3

Divide the result by 5: $\frac{x+3}{5}$

And since the result equals original number, we have,

$$\frac{x + 3}{5} = x$$

Solving, we have…