SECOND TERM E-LEARNING NOTE

SUBJECT: MATHEMATICS **CLASS: JSS1**

SCHEME OF WORK

WEEK	TOPIC
1.	**Revision**
2.	**Approximation:** (a) Degree of Accuracy of Numbers (B) Rounding up of Numbers (Significant Figures, Decimal Places, Nearest Whole Numbers, Tens, Hundreds and Thousands)
3.	**Approximation Cont'd:** (a)Approximating Values of Addition, Subtraction, Multiplication and Division (B) Quantitative Reasoning (QR)(C) Application of Approximation to our Everyday Activities.
4.	**Number Base:** (a) Number Bases/Expansion of Base Numbers (b) Counting in Base 2 (c) Addition and Subtraction of Two or Three Digits Binary Numbers
5.	**Number Base (Cont'd):** (a)Multiplication of Number in Base 2 Problem Solving on (QR) Related to Conversion and Application.
6.	**Basic Operations:** (a) Addition and Subtraction of Numbers with Emphasis on place Values using Spike or Abacus
7.	Review of first half term's work and periodic test
8.	**Basic Operations (Cont'd):** (a) Addition and Subtraction of Positive and Negative Integers Using Number Line and Collection of Terms (b) Solving Problems on Quantitative Reasoning and Application
9.	**Algebraic Processes:** (a) Use Of Symbols (i) Open Sentence and Authentic Operation (ii) Word Problems Involving Use of Symbols (b) Identification of Coefficient of Terms; Basic Authentic Operation Applied to Algebraic Expression (c) Collection and SimplificationOf Like Terms and the Use of Brackets.
10.	**Algebraic Process (Cont'd):** (a) Problem Solving on Basic Arithmetic Operations in Algebraic Processes (b) Solving Quantitative Aptitude Problems on the Use of Symbols and Brackets
11.	Revision of the Second Term's Work and Preparation for Examination
12.	Examination

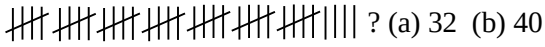
REFERENCE BOOKS

New General Mathematics, Junior Secondary Schools Book 1
Essential Mathematics for Junior Secondary Schools Book 1

WEEK ONE

Topic: Revision

1. The value of 8 in 18214 is (a) 8 units (b) 8 tens (c) 8 hundreds (d) 8 thousands (e) 8 ten thousands
2. The Roman numerals CXCIV represents the number (a) 194 (b) 186 (c) 214 (d) 215 (e) 216.

3. What is the number represented by  ? (a) 32 (b) 40 (c) 28 (d) 39
4. The value of 7 in 3.673 is (a) 7tenths (b) 7 hundredths (c) 7 units (d) 7 hundredth.
5. Three million and four in figures is (a) 300004 (b) 300040 (c) 30000004 (d) 3000004
6. What is the value of 1.2 km in metres? (a) 120m (b) 1 200m (c) 12 000m (d) 120 000m
7. Which of the following numbers is the largest?(a) 727345565 (b) 727245565 (c)727445565 (d) 726778876.
8. $\$1\frac{1}{4}$ million in digits only is (a) $1 200 000 (b) $1 140 000 (c) $1 250 000 (d) $125 000
9. Le 5 600 000 in digits and words is (a) Le 56 million (b) Le 5.6 billion (c) Le 0.56 billion (d) Le 5.6 million
10. 13 500 000mm in km is (a) 13.5 km (b) 1.35 km (c) 1350 km (d) 13500 km
11. The value of 23 x 32 is (a) 1291(b) 658 (c) 729 (d)7 36
12. The LCM of 12 and 15 is (a) 90 (b) 60 (c) 30 (d) 120
13. The HCF of 63and 90 is (a) 9 (b) 3 (c) 12 (d) 6
14. The first three common multiples of 3 and 11 are (a) 3, 33, 66 (b) 11, 33, 66 (c) 33, 66, 99 (d) 33, 44, 55
15. Which of the following is not a proper fraction?(a) ¼ (b) ¾ (c) $^3/_2$ (d) $^5/_8$
16. Express 3 $^1/_7$ as an improper fraction is (a) $^{11}/7$ (b)$\frac{21}{7}$ (c) $^7/_{22}$ (d) $^{22}/ 7$
17. Express $^{99}/_5$ as a mixed fraction (a) 19 $^4/_5$ (b) 18 $^4/_5$ (c) 19 $^5/_4$ (d) 18 $^5/_4$
18. Which of the following is not equivalent to ½ ? (a)$^9/_{18}$ (b)$^{11}/_{22}$ (c)$^{15}/_{30}$ (d)$^{24}/_{42}$
19. To express the fraction 30/48 in its lowest term, divide the numerator and demominator by (a) 2 (b) 3 (c)5 (d) 6
20. 3.45 minutes , expressed as a fraction of one hour is (a) 1/60 (b) 1/45 (c) ¾ (d) 4/5
21. The missing number in the fraction $\frac{3}{4} = \frac{?}{20}$ is (a) 6 (b) 9 (c) 12 (d)15
22. A woman bought 2 crates of eggs. ¼ of them are bad. How many of the eggs are good? (a) 36 (b) 24 (c) 48 (d)12
23. Simplify 2 ½ + ¼ (a) 3 ¾ (b). 2 1/8 (c) 1 ¾ (d) 2 ¾.
24. Simplify 4 2/5 – 3 ¼ (a) 1 3/20 (b) 3 2/5 (c) 1 7/20 (d) 1 5/8
25. The common denominator of the fractions 3 1/6 – 2 ½ = 2 2/3 is (a) 8 (b) 12 (c) 6 (d) 15
26. Simplify 2 2/5 – 3 7/9 + 2 1/3 (a) 1 43/45 (b) 43/45 (c) 2 37/45 1 41/45
27. What is the sum of 1 ¾, 2 3/5 and 5 ¾(a) 3 1/30 (b) 5 1/60 (c) 7 1/60 (d) 8 1/50.
28. Find the length of a rectangle whose breadth and area are $^7/_{20}$m and 8 $^1/_5$m^2 (a) 23 $^3/_7$ (b) 21 $^2/_7$ (c) 1 $^7/_{20}$ (d) 8 $^{11}/_{20}$.
29. Simplify 5 ¼ + 1 $^1/_6$ – 3 $^2/_3$ (a) 5 $^{11}/_4$ (b) 2 ¾ (c) 3 $^1/_{12}$ (d) 1 ¾
30. Simplify $^{11}/_{25}$ x 1 $^4/_{11}$ (a) $^2/_3$(b) $^3/_5$(c) $^2/_5$ (d) $^4/_5$

Section B

1. Change this Roman figure to natural numbers (i)MMCDLXXI (ii) MMMCLIV
2. Write the following in figures: (a) fifteen trillion, six hundred and seventy one billion, three hundred and ninety one million, eighty eight thousand, five hundred and fifty five(b) three hundred and twenty-nine billion, five hundred and sixty two million, eight hundred and one thousand, four hundred and thirty three
3. Write these numbers in digits only: (a) Le 0.5 billion (b) $ 9.1 million

4. A drum holds 2 ½ litres of water when itsis ¾ full. How many litres of water can it hold when it is (a) full, b, two-third (c)empty.
5. Simplify the following: (a) $3^{7}/8 + 2\ ¾$ (b) $2\ ^{5}/6 + 5\ ^{7}/8$(c) 2 4/5+ 71/2 -83/10
6. Mr. Hope spends 1/3 of his earnings on food and ¼ on clothes. He then saves the rest. What fraction does he (a) spend altogether(b) save?

WEEK TWO
Topic: Approximation
Content

- **Degree of Accuracy**
- **Rounding Up of Numbers**

I. **Degree of Accuracy**
Many calculations involve measurements. The degree of accuracy of the results of the calculations depends therefore on the degree of accuracy of the measurements. It therefore means that the degree of accuracy of measurement in a calculation must be taken into consideration when determining the answer to the calculation.

Rounded –of values are sometimes used in calculations for example, pi(π) is often taken as 3.14 or 3.14 2.

II. **Rounding –up of Numbers**
It is not cost effective to give exact number of certain things due to the difficulty that may be encountered in the course of carrying out such task. E.g. Number of vehicles plying a particular road, spectators in a stadium, population of a town etc. What is usually done is to round the number or approximate it to the nearest 10, 100,1000 and so on.

Example 1
Round the following numbers to the nearest ten
(a) 34 (b) 127 (c) 43678
Solution
(a) 34
:. To the nearest 10 = 30
(b) 127
:. To the nearest 10 =130.
(c) 43678
:. To the nearest 10 = 43680.

Evaluation:
1. Round these numbers to the nearest hundred
(a) 231 (b) 87345 (c) 567
2. The number of people at the cinema yesterday was 2576. Give this number to the nearest
(a) 10 (b) 100 (c) 1000

Decimal Places

See the illustration below
3. 5 7 8 6

From the illustration above, 3.5786 is divided into two parts by a decimal points to the right decimal to the left (whole number).

Example 1
Give each of the following correct to 1d.p and 2 d.p
(a) 3.4567 (b) 35. 4782 (c) 4.2071
Solution

(a) 3.4567
i. 3.5 (1 d.p)
ii. 3.46 (2d.p)
(b) 35. 4782
i. 35.5 (1d.p)
ii. 35.48 (2d.p)
(c) 4.2071
i. 4.2 (1 d.p)
ii. 4.21 (2d.p)

Evaluation
Give each number correct to 2.d.p and 3d.p
(a) 5.7804 (b) 0.007992 (c) 16.869 (d) 28.0099.

Significant Figures
The word significant means important. In mathematics, we need to study it in two aspects
i. whole numbers
3 8 0 6 9
ii. decimal numbers
0. 0 0 5 0 8 6
From the two illustrations above, we can conclude that zeros in the middle of a whole number are significant whilezeros at the end are not significant (insignificant)

Example 2
Give 45775 correct to (a) 1 s.f (b) 2s.f (c) 3 s.f
Solution
(a) 50000 (1s.f)
(b)46000 (2 s.f)
(c) 45 800 (3.s.f)

Example 3
Give each of the following numbers correct to 2 s.f
(a) 5.781 (b) 0.00244 (c) 0.0507

Solution
(a) 5.781 = 5.8 (2 s.f)
(b) 0.00244 = 0.0024 (2 s.f)
(c) 0.0507 = 0.051 (2 s.f)

Evaluation:
Give each number correct to 3 significant figures
(a) 57045 (b) 4540 (c) 456.56 (d) 0.5002 (e)34.0061 (f) 0.001011

Nearest Whole Number
To round a decimal number to the nearest whole number, check the number in the 1std.p, if it is 5 or more than round the number up but if it is less than 5 do not change the number…