NAME OF TEACHER: ..... **WEEK ENDING.....12-05-2023.....**

NUMBER ON ROLL: ..... **SUBJECT... MATHEMATICS**

DURATION: ..... **REFERENCE...SYLLABUS(CRDD,2007), MATHS FOR JHS .....**

FORM.....BASIC 9..... **WEEK.....6.....**

DAY/DURATION	***TOPIC/SUB-TOPIC/ASPECT***	***OBJECTIVES/R.P.K***	***TEACHER-LEARNER ACTIVITIES***	**T/L MATERIALS**	**CORE POINTS**	**EVALUATION AND REMARKS**
MONDAY **08-05-2023**	**Topic;** Algebraic Expressions **Sub-Topic;** Change of Subject	By the end of the lesson the Pupil will be able to: i. Explain the concept of "Change of Subject" in algebraic expressions. ii. Change the subject of formula in expressions. **RPK** Pupils were taught change of subject in basic 7.	**Introduction** Discuss the meaning of "Change of subject" in algebra with the Pupils. **Activities** 1. Assist Pupils to identify 5 formulae in algebraic expressions. 2. Demonstrate how to the change the subject of an expression by making a variable a subject of a given formula 3. Guide pupils to change subjects of formulae that	Cardboard, Power Point Presentation. Poster	**Subject in algebra;** The subject of a formula is the letter that appears on its own on one side of the equal sign, eg A is the subject in A = lw. **Changing the subject of a formula** is a way of rearranging a formula to determine a missing quantity in terms of other quantities. This is exactly the same process we apply to solving equations; however, to solve an equation, we usually work with one variable and numerical values. **Algebra Formula** • $a^2 - b^2 = (a-b)(a+b)$ • $(a+b)^2 = a^2 + 2ab + b^2$ • $(a-b)^2 = a^2 - 2ab + b^2$ • $a^2 + b^2 = (a-b)^2 + 2ab$.	**Exercise** Make x the subject in the following equations; i. y= 2x + a ii. y= 2a-x iii. y= x/b + 2 iv. y= x+5/2 v. y = x(2+a)

			involve the inverses of the four basic operations. **Closure** Pupils in small groups discuss to solve more examples of changing the subject of an algebraic expression.		• $(a+b+c)^2 = a^2+b^2+c^2+2ab+2ac+2bc$. • $(a-b-c)^2 = a^2+b^2+c^2-2ab-2ac+2bc$. • $a^3-b^3 = (a-b)(a^2+ab+b^2)$ • $a^3+b^3 = (a+b)(a^2-ab+b^2)$ Question 1: Make y the subject of each of the following (a) $y+w=c$ (b) $y-p=m$ (c) $m+y=s$ (d) $y-2g=n$ (e) $3y=c$ (f) $ay=w$ (g) $\frac{y}{c}=w$ (h) $\frac{y}{a}=2c$ (i) $a=y+p$ (j) $c=y-k$ (k) $y^2=s$ (l) $y^3=x$ (m) $\sqrt{y}=g$ (n) $\pi y=c$ (o) $n-y=t$ (p) $ry=c$ (q) $4\pi y=b$ (r) $y+7t=c+r$ (s) $\frac{r}{y}=w$ (t) $y^2=k+x$ (u) $A=xy$ Question 2: Make x the subject of the following formulae (a) $4x+c=w$ (b) $dx-t=8$ (c) $x^2+3=h$ (d) $2x+2y=P$ (e) $s=x^2-3$ (f) $y=xz+s$ (g) $\frac{x}{n}+2=w$ (h) $\frac{x}{6}-5=w$ (i) $\frac{x+3}{c}=h$ (j) $3y=4x+1$ (k) $x^2+a=v$ (l) $x^3-4=5y$ (m) $\frac{x+t}{m}=2c$ (n) $\frac{w+x}{u}=3z$ (o) $A=\pi x^2$ (p) $A=\frac{1}{2}bx$ (q) $V=abx$ (r) $v^2=u^2+2ax$ (s) $\frac{a+b}{x}=r$ (t) $\frac{5cx}{b}=a$ (u) $\sqrt[3]{\frac{x}{k}}=w$	
WEDNESDAY **10-05-2023**	**Topic;** Algebraic Expressions **Sub-Topic;** Substitution of Values	**Objective** By the end of the lesson the Pupil will be able to; Substitute values for a given variable. **RPK**	**Introduction** Demonstrate solving examples of substituting values for variables in algebraic expression. **Activities**		**Substitution;** Substitution means replacing the variables (letters) in an algebraic expression with their numerical values. We can then work out the total value of the expression.	**Exercise;** 1. Find the value of 20−m/5, when =35

		Pupils can already change the subject of a formula.	1. Discuss the procedure to follow to substitute values in given variables with the Pupils. 2. Assist Pupils to practice substituting values for variables in algebraic expression. **Closure** Pupils brainstorm to solve more examples on substituting values in algebraic expression.		**In order to substitute into an algebraic expression:** 1. Rewrite the expression substituting each letter with its given numerical value. 2. Calculate the total value of the expression. Remember that you must apply BIDMAS (Brackets, Indices, Division/Multiplication, Addition/Subtraction)	2. Find the value of 3x − 5y when x = 5 and y = 4. 3. Find the value of 2p(q − r) when p = 5, q = 15 and r = 6. 4. Find the value of 4g(10 − 2h) when g = 2.5 and h = 1.8. 5. Find the value of 7x - 10, when x = 5.
THURSDAY **11-05-2023**	**Topic;** Algebraic Expressions **Sub-Topic;**	**Objective** By the end of the lesson the Pupil will be able to; Simplify algebraic expressions. **RPK**	**Introduction** Review Pupils knowledge on the previous lesson. **Activities** 1. Discuss with Pupils on the basic rules and steps for simplifying in algebraic expressions.		**Simplifying expressions** Simplifying an expression is just another way to say solving a math problem. When you simplify an expression, you're basically trying to write it in the simplest way possible.	**Exercise;** 1. Simplify the expression, 4(2x+1) – 3x. 2. Simplify the

	Simplifying Expressions	Pupils can already substitute values in expressions.	2. Pupils brainstorm to explain what it means to group like terms. 3. Demonstrate simplifying expressions to the lowest terms. 4. Assist Pupils to practice simplifying expressions. **Closure** Through questions and answers, conclude the lesson.		At the end, there shouldn't be any more adding, subtracting, multiplying, or dividing left to do. **Basic rules and steps of simplifying expressions;** 1. Remove any grouping symbol such as brackets and parentheses by multiplying factors. 2. Use the exponent rule to remove grouping if the terms are containing exponents. 3. Combine the like terms by addition or subtraction. 4. Combine the constants. ***Example 1*** Simplify $3x^2 + 5x^2$ <u>Solution</u> Since both terms in the expression are have same exponents, we combine them; $3x^2 + 5x^2 = (3 + 5)\ x^2 = 8x^2$ ***Example 2*** Simplify the expression: 2 + 2x [2(3x+2) +2)]	expression, $[2x\ ^3y^2]^3$. 3. Simplify the expression, 6(p +3q) – (7 +4q). 4. Simplify the expression, 4rs - 2s – 3(rs +1) – 2s 5. Simplify the expression, [(3 – x) (x + 2) + (-x + 4) (7x + 2) – (x – y) (2x – y)] – $3x^2$ – 7x + 5.

					Solution First work out any terms within brackets by multiplying them out; = 2 + 2x [6x + 4 +2] = 2 + 2x [6x + 6] Now eliminate the parentheses by multiplying any number outside it; 2 + 2x [6x + 6] = 2 + 12x ^{2} + 12x This expression can be simplified by dividing each term by 2 as; 12x ^{2}/2 + 12x/2 + 2/2 = 6 x ^{2} + 6x + 1 ***Example 3*** Simplify 3*x* + 2(*x* – 4) Solution In this case, it is impossible to combine terms when they are still in parentheses or any grouping sign. Therefore, eliminate the	

					parenthesis by multiplying any factor outside the grouping by all terms inside it. Hence, $3x + 2(x - 4) = 3x + 2x - 8$ $= 5x - 8$ When a minus sign is in front of a grouping, it normally affects all the operators inside the parentheses. This means that a minus sign in front of a group will change the addition operation to subtraction and vice versa.	

Name of Teacher: ***School:*** ***District:***