MAT	TATAG	School Logo	
Bansang Makabata	Batang Makabansa BACONG PILIPINAS		
Name of		Quarter:	<b>4</b> <sup>th</sup>
School:			Quarter
Grade Level & Section:	Grade 7	Week:	Week 5 D2
Subject:	MATHEMATICS	Date and Time:	
Topic:		Teacher:	

I. CONTENT	STANDARDS AND LEARNING COMPETENCIES	ANNOTATIONS		
A. CONTENT STANDARDS	The learner should understand the rearrangement of a formula to make a different variable the subject of the formula.			
B. PERFORMANCE STANDARDS	By the end of the lesson, the learners are able to rearrange a formula to make a different variable the subject of the formula. (NA)			
C. LEARNING COMPETENCIE S AND	2. Apply steps for solving linear equations to solve the literal equation.			
OBJECTIVES	3. Accurately isolate one variable and express the solution in terms of the remaining variable			
	II. CONTENT			
	Solving Literal Equations			
A. REFERENCES	III. LEARNING RESOURCES  Amusing Algebra. (2024). Solving literal equations clue mystery activity.  https://www.teacherspayteachers.com/Product/Solving-Literal-			
	Equations-Clue-Mystery-Activity-6109358?st=e2ed7be 22	e0bf6ad1824978c9f5fd018		
	Cachet. (2014, July 25). Rate-Time-Distance problems (Powerpoint slides). https://www.slideserve.com/cachet/4-8-rate-time-distance-problems			
Chilimath. (2024). Solving Literal Equations. Chilimath. https://www.chilimath.com/lessons/intermediate-algebra/literal-equations/		a/literal-equations/		

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Metropolitan Community College. (n.d.). Solving Literal Equations. Metropolitan Community College. https://mcckc.edu/tutoring/docs/blue-

river/math/equat\_inequ/Practice\_Solving\_Literal\_Equations.pdf

Oronce, O.A., et al (2007). e-math I Elementary Algebra. Rex Bookstore, Inc. Sampaloc, Manila

Pleacher, D. (n.d.). Equation Analysis Test #2. Pleacher. https://www.pleacher.com/mp/puzzles/mathpuz/eqtstan3.html2

S2Tem Centers. (2019). Literal Equations Breakout. S2Tem Centers.

https://www.s2temsc.org/uploads/1/8/8/7/18873120/solving literal equations breakout.pdf

Studylib. (n.d.). Equation Analysis Assessment. Studylib. https://studylib.net/doc/9713503/equation-analysis-assessment

B. OTHER
LEARNING
RESOURCES

#### IV. TEACHING AND LEARNING PROCEDURE

#### BEFORE/PRE-LESSON PROPER

# ACTIVATING PRIOR KNOWLEDGE

#### **Short Review:**

**Literal equation** is an equation that contains **two or more variables** (e.g., formulas in math and science).

## Give examples:

- $A=\pi r^2$  (Area of a circle)
- d = rt (Distance formula)

## **Identify Key Components**

- Variables letters representing unknown values (e.g., x,y,r,h)
- Coefficients numbers multiplying
   variables (e.g., in 3x, 3 is the coefficient)
- Constants fixed values (e.g., 5 in x+5=10)

# Review Common Formulas Used in Science & Geometry

- ullet Area formulas (e.g., A=lw for rectangles,  $A=rac{1}{2}bh$  for triangles)
- Motion formulas (e.g., d=rt for distance)
- Volume formulas (e.g., V = lwh for rectangular prisms)

## LESSON PURPOSE/INTENTION

Today, we will develop a deeper understanding of how properties of equality are applied when isolating variables.

### **DURING/LESSON PROPER**

# READING THE KEY IDEA/STEM

### **Worked Example**

Solve each equation for the indicated variable.

1. Solve 3x - 2a = 7a for x Answer: x = 3a

Step 1: Move all terms with a to the other side:

$$3x = 7a + 2a$$

Step 2: Combine like terms:

$$3x = 9a$$

Step 3: Isolate x by dividing both sides by 3:

$$x = \frac{9a}{2}$$

Step 4: Simplify:

$$x = 3a$$

# 2. Solve -3x + 3y = 12 for y Answer: y = x + 4

**Step 1**: Move -3x to the other side:

$$3y = 12 + 3x$$

Step 2: Divide through by 3:

$$y = \frac{12}{3} + \frac{3x}{3}$$

Step 3: Simplify:

$$y = 4 + x$$

or equivalently:

$$y = x + 4$$

# 3. Solve 6f + 3q = 16f - 2q for q Answer: q = 2f

**Step 1**: Move all terms with q to one side and f to the other:

$$3q + 2q = 16f - 6f$$

Step 2: Combine like terms:

$$5q = 10f$$

**Step 3**: Divide through by 5:

$$q = \frac{10f}{5}$$

Step 4: Simplify:

$$q=2f$$

# DEVELOP NG and DEEPENING UNDERSTANDING OF THE KEY IDEA/STEM

### Activity 3: Who Found It?

Gavin has a mathematics class in the fourth period. Before he arrived in his math class after recess, he found out that his math project was missing. Help Gavin by pretending you are an investigator who will help him find his Math project. Solve for x in the literal equations. Then mark an "X" on the correct answers to verify who got his project, where he left it, and what time he lost it.

1. 
$$z = mx + y$$

$$5. xy = wv$$

2. 
$$x - m = n + p$$

6. 
$$u = v - w + x$$

3. 
$$xm = n + p$$

7. 
$$cx + d = b$$

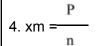
# Values Integration for Lesson

### Activity "Who Found It"

The teacher may ask the following questions before presenting the activity to the

class.

 If your classmate lost something valuable while



8. p = mn - x

W	ho?	Wh	ere?	Wh	ien?
	Tom		Canteen		First Period
x :	$=\frac{np}{m}$	X = 1	u-v-w	x = r	nn+ p
	Joy		Gym		Second Period
x =	$=\frac{z-y}{m}$	X =	$\frac{b-d}{c}$	x = m	+ n + p
	Alex		Library		Third Period
x =	$=\frac{b+d}{c}$	x =	$=\frac{wv}{y}$	x = 0	e – bd

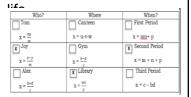
you were in the classroom,

and your seatmate suspects

your friend stole it what do you usually do?

2. Are you fair in making judgments?

Tell the learners that fair judgment is important to exercise in our everyday



**Answer:** Joy found the Math

project in the library during the second period.

## AFTER AFTER/POST-LESSON

MAKING GENERALIZATIONS AND ABSTRACTIONS	Making Generalizations  Learners create a "One-Minute Paper" where they write down the most important concept they learned and a question they still have. Then, they pair up to discuss their insights and clarify doubts.	
EVALUATING LEARNING	Short quiz on identifying variables and solving for one variable:  1. Solve for y:  4x-2y=10	ANSWER: $1. \qquad \begin{array}{c} \text{Solution:} \\ -2y = 10 - 4x \\ \text{Divide both sides by } -2: \\ y = \frac{10 - 4x}{-2} \\ \text{Simplify:} \end{array}$

eparate the terms:

 $y = \frac{-4x}{-2} + \frac{10}{-2}$ 

Simplify:

y = 2x -



### 2. Solve for *a*:

$$5a-3b=2a+4b$$

# 3. Solve for q:

$$7p+4q=3p+9q$$

# 4. Solve for x:

$$2x+5y=3y+10$$

# 5. **Solve for** *f***:**

## 2.

Solution:

Move like terms to the same side:

$$5a - 2a = 4b + 3b$$

Simplify:

$$3a = 7b$$

Divide both sides by 3:

$$a=rac{7b}{3}$$

Answer:

$$a=rac{7b}{3}$$

### 3.

Solution:

Move like terms:

$$4q-9q=3p-7p$$

Simplify:

$$-5a = -4$$

Divide both sides by -5:

$$q = \frac{-4p}{-5}$$

Simplify:

$$q = \frac{4p}{\epsilon}$$

Answer:

$$q=rac{4p}{5}$$

4.

Solution:

Move like terms

$$2x = 3y - 5y + 10$$

Simplify:

$$2x=-2y+10$$

Divide both sides by 2:

$$x=rac{-2y+1}{2}$$

Separate the terms:

$$x=\frac{-2y}{2}+\frac{10}{2}$$

Cimplifie

$$x = -y + 5$$

Answer:

$$x = -y + 5$$

5.

Solution:

Move like terms:

$$8f-2f=6q+$$

Simplify:

$$6f=10q$$

Divide both sides by 6:

$$f = rac{10q}{6}$$

Simplify the fraction:

$$f=rac{5q}{3}$$

Answer:

$$f = \frac{5q}{}$$

ADDITIONAL ACTIVITIES FOR APPLICATION OR REMEDIATION (IF APPLICABLE)		
REMARKS		
REFLECTION		
Dropored by	Poviovo	d by
Prepared by:	Reviewe	d by:

Master Teacher/Head

Subject Teacher

Teacher