

**MATATAG**

Bansang Makabata



Batang Makabansa



BAGONG PILIPINAS

School
Logo

Name of School:		Quarter:	4th 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 COMPETENCIES AND OBJECTIVES	2. Apply steps for solving linear equations to solve the literal equation. 3. Accurately isolate one variable and express the solution in terms of the remaining variable	
II. CONTENT		
Solving Literal Equations		
III. LEARNING RESOURCES		
A. REFERENCES	Amusing Algebra. (2024). Solving literal equations clue mystery activity. https://www.teacherspayteachers.com/Product/Solving-Literal-Equations-Clue-Mystery-Activity-6109358?st=e2ed7bee0bf6ad1824978c9f5fd01822 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/	

	Glencoe & McGraw-Hill. (n.d.). Teaching Algebra with Manipulatives. Sault Area Public Schools. https://www.saultschools.org/cms/lib/mi17000143/centricity/domain/137/a2tam.pdf 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/solvingliteralequationsbreakout.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 • Area formulas (e.g., $A = lw$ for rectangles, $A = \frac{1}{2}bh$ 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: $x = \frac{9a}{3}$ 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: $q = 2f$	
DEVELOPING 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. 1. If your classmate lost something valuable while

8. $p = mn - x$

Who?		Where?		When?	
	Tom		Canteen		First Period
$x = \frac{np}{m}$		$x = u-v-w$		$x = mn+ p$	
	Joy		Gym		Second Period
$x = \frac{z-y}{m}$		$x = \frac{b-d}{c}$		$x = m + n + p$	
	Alex		Library		Third Period
$x = \frac{b+d}{c}$		$x = \frac{wv}{y}$		$x = c - bd$	

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

Who?	Where	When?
☐ Tom $x = \frac{yz}{m}$	☐ Canteen $x = u - v - w$	☐ First Period $x = \text{min} + p$
☒ Joy $x = \frac{z-y}{m}$	☐ Gym $x = \frac{b-d}{e}$	☒ Second Period $x = m + n + p$
☐ Alex $x = \frac{b+d}{e}$	☒ Library $x = \frac{wy}{e}$	☐ Third Period $x = c - bd$

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.

Solution:

$$-2y = 10 - 4x$$

Divide both sides by -2 :

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

Simplify:

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

Separate the terms:

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

Simplify:

$$y = 2x - 5$$

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 :

$$8f - 4q = 2f + 6q$$

2.

Solution:

Move like terms to the same side:

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

Simplify:

$$3a = 7b$$

Divide both sides by 3:

$$a = \frac{7b}{3}$$

✓ Answer:

$$a = \frac{7b}{3}$$

3.

Solution:

Move like terms:

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

Simplify:

$$-5q = -4p$$

Divide both sides by -5 :

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

Simplify:

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

✓ Answer:

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

4.

Solution:

Move like terms:

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

Simplify:

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

Divide both sides by 2:

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

Separate the terms:

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

Simplify:

$$x = -y + 5$$

✓ Answer:

$$x = -y + 5$$

5.

Solution:

Move like terms:

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

Simplify:

$$6f = 10q$$

Divide both sides by 6:

$$f = \frac{10q}{6}$$

Simplify the fraction:

$$f = \frac{5q}{3}$$

✓ Answer:

$$f = \frac{5q}{3}$$

ADDITIONAL ACTIVITIES FOR APPLICATION OR REMEDATION (IF APPLICABLE)		
REMARKS		
REFLECTION		

Prepared by:

Subject Teacher
Teacher

Reviewed by:

Master Teacher/Head