BASIC 7

WEEKLY LESSON PLAN – WEEK 6

| Strand:	Algebra		Sub-Strand:		Equations and Inequalities	
Content Standard:	B7.2.3.1 Demonstrate an understanding of linear equations of the form x + a = b (where a and b are integers) by modelling problems as a linear equation and solving the problems concretely, pictorially, and symbolically					
Indicator (s)	B7.2.3.1.1 Translate word problems to linear equations in one variable and vice versa B7.2.3.1.2 Model and solve linear equations using concrete materials (e.g., counters and integer tiles) and describe the process orally and symbolically.				**Performance Indicator:** Learners can solve equations using algebra tiles and other models.	
Week Ending	16-02-2024					
Class	B.S.7	**Class Size:**		**Duration:**		
Subject	Mathematics					
Reference	Mathematics Curriculum, Teachers Resource Pack, Learners Resource Pack, Textbook.					
Teaching / Learning Resources	Cardboard, Poster, Video		**Core Competencies:**		• Analyze and make distinct judgment about viewpoints expressed in an argument	
DAY/DATE	**PHASE 1 : STARTER**	**PHASE 2: MAIN**			**PHASE 3: REFLECTION**	
MONDAY	Discuss with Learners on the steps involved in translating a word problem into a linear equation.	1. Demonstrate on solving examples of solve word problems of linear equations in one variable 2. Learners brainstorm to write word problems for given linear equations. 3. Assist Learners to solve examples of word problems of linear equations in one variable. **Steps involved in solving a linear equation word problem:** ● Read the problem carefully and note what is given and what is required and what is given. ● Denote the unknown by the variables as x, y, ……. ● Translate the problem to the language of mathematics or mathematical statements. ● Form the linear equation in one variable using the conditions given in the problems. ● Solve the equation for the unknown. ● Verify to be sure whether the answer satisfies the			Learners in small groups to discuss and solve more examples of linear equations word problems. **Exercise;** 1. The length of a rectangle is twice its breadth. If the perimeter is 72 metre, find the length and breadth of the rectangle. 2. Aaron is 5 years younger than Ron. Four years later, Ron will be twice as old as Aaron. Find their present ages 3. A number is divided into two parts, such that one part is 10 more than the other. If the two parts are in the ratio 5 : 3, find	

		conditions of the problem.	the number and the two parts.
		Step-by-step application of linear equations to solve practical word problems:	
		1. The sum of two numbers is 25. One of the numbers exceeds the other by 9. Find the numbers.	
		Solution:	
		Then the other number = x + 9	
		Let the number be x.	
		Sum of two numbers = 25	
		According to question, x + x + 9 = 25	
		$\Rightarrow$ 2x + 9 = 25	
		$\Rightarrow$ 2x = 25 - 9 (transposing 9 to the R.H.S changes to -9)	
		$\Rightarrow$ 2x = 16	
		$\Rightarrow$ 2x/2 = 16/2 (divide by 2 on both the sides)	
		$\Rightarrow$ x = 8	
		Therefore, x + 9 = 8 + 9 = 17	
		Therefore, the two numbers are 8 and 17.	
		2.The difference between the two numbers is 48. The ratio of the two numbers is 7:3. What are the two numbers?	
		Solution:	
		Let the common ratio be x.	
		Let the common ratio be x.	
		Their difference = 48	
		According to the question,	
		7x - 3x = 48	
		$\Rightarrow$ 4x = 48	

		$\Rightarrow x = 48/4$	
		$\Rightarrow x = 12$	
		Therefore, $7x = 7 \times 12 = 84$	
		$\quad 3x = 3 \times 12 = 36$	
		Therefore, the two numbers are 84 and 36.	
TUESDAY	Review Learners knowledge on the previous lesson.	1. Learners brainstorm to distinguish between expression and equation. 2. Assist learners to explain Algebra tiles and their purposes. 3. Discuss examples of Algebra tiles with the Learners. 4. Assist Learners to identify the formula for a linear model. Linear models describe a continuous response variable as a function of one or more predictor variables. They can help you understand and predict the behavior of complex systems or analyze experimental, financial, and biological data. Linear regression is a statistical method used to create a linear model. The stages involved in mathematical modelling; ○ Formulation ○ Solution ○ interpretation ○ validation. **What are Algebra Tiles**? Algebra tiles are rectangular shapes that provide area models of variables and integers. They usually consist of x sets and y sets. Different pieces are used to model 1, x, x 2 , y, y 2 , and xy. Sets consist of two different colours to represent both positive and negative terms. Overhead versions are used for whole class learning opportunities. A clear plastic organizer prevents tiles from moving around. **How Algebra Tiles help Learners;** Algebra tiles are used to build concrete area representations of abstract algebraic concepts. The concrete representations help students become	Individual Learners brainstorm to model Linear equations. **Exercise;** 1. State the formula for modeling linear equations. 2. Outline 4 steps of the mathematical modeling process

		comfortable with using symbols to represent algebraic concepts. Algebra tiles are typically used to explore integers, algebraic expressions, equations, factoring, and expanding. They can also be used to explore fractions and ratios.	
THURSDAY	Demonstrate on modeling and solving equations using algebra tiles	1. Assist Learners to represent a problem *with* a *linear equation* and *solve* the *equation using concrete models*, (*e.g.*, *counters*, *integer tiles*) and record the *process symbolically* . 2. Learners brainstorm to use models to solve equations. 3. Demonstrate on using algebra tiles to solve addition or subtraction equation 4. Assist Learners to practice using algebra tiles to solve examples of linear equations. An equation is a mathematical sentence that says two expressions are equal. Consider the equation below. $$2x + 3 = 7$$ For the balance scale model, use the following figures to represent *x* and 1. You can represent combinations of *x* and 1 using combinations of the figures. The equation, $2x + 3 = 7$, can be built on the balance shown below.	Learners brainstorm to use algebra tiles to solve equations with variables on both sides of an equation.
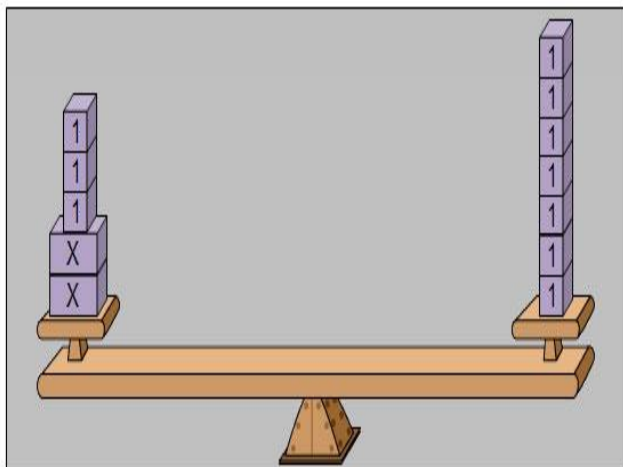
Once the equation is built on the model, the unit blocks, or 1-blocks, can be removed from both sides of the balance to determine the number of unit blocks it takes to balance the 2 *x*-blocks.
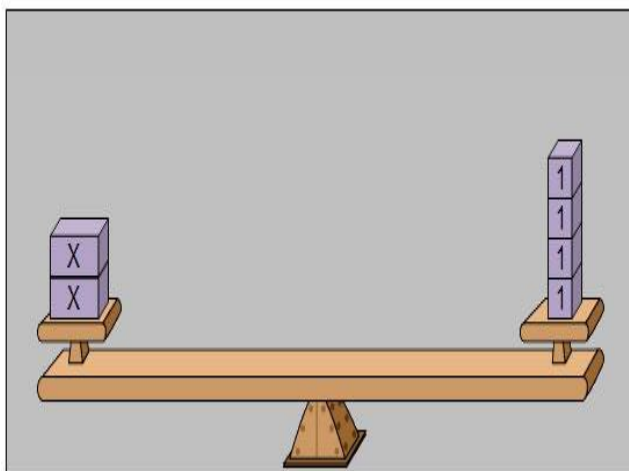
Each *x*-block must balance the same number of unit blocks, so in this case, each *x*-block balances 2 unit blocks. According to the model, $x = 2$

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