

Operations and Algebraic Thinking: Grade 2

Stage 1 Desired Results

ESTABLISHED GOALS: <u>Competencies:</u> - Students will demonstrate the ability to solve arithmetic problems by utilizing effective strategies and applying properties of operations to whole numbers. - Students will demonstrate the ability to model operations by utilizing objects, drawings, and equations. <u>Content Standards:</u> 2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. 2.OA.2 Fluently add and subtract within 20 using mental strategies. 2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends. 2.OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends. - MP1 Make sense of problems and persevere in solving them. - MP3 Construct viable arguments and critique the reasoning of others. - MP6 Attend to precision.	Transfer	
	Students will be able to independently use their learning to solve arithmetic problems, with fluency.	
	Meaning	
	ENDURING UNDERSTANDINGS Students will understand that... - mathematical operations are used in solving problems in which a new value is produced from one or more values. - algebraic thinking involves choosing, combining, and applying effective strategies for answering quantitative questions.	ESSENTIAL QUESTIONS What would happen if you could only add, and never subtract?
	Acquisition	
	Students will know... - that addition and subtraction are inverse operations. - what it means to be odd or even. - how the formation of an array leads to understanding equations. <u>Vocabulary:</u> addends, array, odd, even, facts, sum, difference, equation, mental strategies, adding to, taking from, putting together, taking apart, comparing	Students will be skilled at... - solving one and two-step word problems using addition and subtraction within 100 (with unknowns in all positions). - using mental strategies fluently to add and subtract within 20. - identifying numbers and groups of objects (0-20) as odd or even. - using repeated addition to describe the total number of objects in a rectangular array, up to 5x5. - recalling addition facts to 18 with automaticity.
Content Area Literacy Standards		21st Century Skills
not applicable		- solve problems - reason effectively - make judgments and decisions

Stage 2 - Evidence

Evaluative Criteria	Assessment Evidence
	PERFORMANCE TASK(S):

	OTHER EVIDENCE:

Stage 3 – Learning Plan

Summary of Key Learning Events and Instruction

<i>Language Arts Integration</i>	<i>Mathematics Integration</i>
• <u>1.OA.1</u> Use	not applicable
<i>Technology Integration</i>	<i>District Materials</i>
• <u>1.OA.1</u> Use	