

Hardin County Schools Combined Curriculum Guide
Math – Third Grade
DRAFT

Big Idea	ALGEBRAIC THINKING			
Academic Expectations	<p>Students explore and examine patterns and develop rules to go with patterns. They generate input-output for functions and create tables to analyze functions. Students use number sentences with missing values.</p> <p>2.8 Students understand various mathematical procedures and use them appropriately and accurately. 2.11 Students understand mathematical change concepts and use them appropriately and accurately. 2.12 Students understand mathematical structure concepts including the properties and logic of various mathematical systems.</p>			
POS Understandings	<p>MA-P-AT-U-1 Students will understand that patterns, relations and functions are tools that help explain or predict real-world phenomena. MA-P-AT-U-2 Students will understand that numerical patterns can be written as rules that generate the pattern.</p>	9 Weeks Taught	<div style="border: 1px solid black; display: inline-block; padding: 2px;">1</div> 2 3 4	
POS Skills & Concepts	Date(s) Taught	Core Content for Assessment	Objective	Essential Vocabulary
<p>MA-P-AT-S-PRF1 Students will identify and describe patterns in real life and in numerical and geometric situations.</p> <p>MA-P-AT-S-PRF2 Students will reproduce and extend patterns using manipulatives.</p> <p>MA-P-AT-S-PRF3 Students will use pictures or words to create, reproduce, extend and explain patterns of shapes, objects, movements, sounds and numbers.</p> <p>MA-P-AT-S-PRF4 Students will recognize and extend simple number patterns.</p> <p>MA-P-AT-S-PRF6 Students will use calculators to explore how constant addition produces a pattern and can be expressed as a rule for a pattern.</p>		<p>MA-EP-5.1.1 Students will extend simple patterns (e.g., 2,4,6,8,...; ◊△◊△...). DOK 2</p>	<p>I can reproduce and create simple patterns.</p> <p>I can identify and extend simple patterns using pictures and manipulatives.</p>	<p>Pattern Increase Decrease</p>
Strategies & Activities		Resources	Common Assessments	
<p>Two Ways to Count to Ten – p. 135 (Math and Literature, grades 2-3 by Marilyn Burns and Stephanie Sheffield)</p>				
		Essential Questions	Higher Order Questions	

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POS Understandings	MA-P-AT-U-3 Students will understand that algebra represents mathematical situations and structures for analysis and problem solving (e.g., finding the missing value in open sentences). MA-P-AT-U-4 Students will understand that real-world situations can be represented using mathematical models to analyze quantitative relationships.	9 Weeks Taught	1 2 3 4	
POS Skills & Concepts	Date(s) Taught	Core Content for Assessment	Objective	Essential Vocabulary
MA-P-AT-S-VEO1 Students will explore unknowns and open sentences to express relationships. MA-P-AT-S-EI1 Students will solve simple equations (e.g., $1 + 1 = []$; $[] - 2 = 7$). MA-P-AT-S-EI2 Students will solve simple inequalities (e.g., $[] < 6$). MA-P-AT-S-EI3 Students will solve for unknowns in simple open sentences. MA-P-AT-S-EI5 Students will use manipulatives, numbers and/or symbols to model real-world situations with simple number sentences MA-P-AT-S-VEO2 Students will create stories about mathematical sentences with missing values. MA-P-AT-S-EI4 Students will read and create story problems to represent mathematical sentences with missing values.		MA-EP-5.3.1 Students will model real-world and mathematical problems with simple number sentences (equations and inequalities) with a missing value (e.g., $2 + ? = 7$, $___ < 6$) and apply simple number sentences to solve mathematical and real-world problems. DOK 2		
Strategies & Activities		Resources	Common Assessments	
		Essential Questions	Higher Order Questions	

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POS Understandings		MA-P-AT-U-5 Students will understand that functions are used to analyze change in various contexts and model real-world phenomena.		9 Weeks Taught	1 2 3 4
POS Skills & Concepts		Date(s) Taught	Core Content for Assessment	Objective	Essential Vocabulary
MA-P-AT-S-PRF5 Students will explore input-output machines (e.g., function machines) and solve simple function machine tasks.			MA-EP-5.1.2 Students will describe functions (input-output) through pictures and words. <p style="text-align: right;">DOK 2</p> <i>MA-EP-5.1.3</i> <i>Students will determine the value of an output given a function rule and an input value.</i>		
Strategies & Activities			Resources	Common Assessments	
Two Ways to Count to Ten – p. 135 (Math and Literature, grades 2-3 by Marilyn Burns and Stephanie Sheffield)					
			Essential Questions	Higher Order Questions	
			Where do you see patterns? How can you make patterns? How can you create and extend patterns?	How can you tell what will come next in the pattern? What makes a pattern a pattern? When is something not a pattern? (from <i>Good Questions for Math Teaching</i> by Sullivan and Lilburn)	