## Grades 1-2 Mathematics Framework for FORMATIVE/CLASSROOM Instruction and Assessment Productive Domains of Speaking and Writing

#### Pennsylvania English Language Proficiency Standard 3

English language learners communicate information, ideas, and concepts necessary for academic success in the content area of Mathematics.

#### **Pennsylvania Core Standards**

#### Speaking and Listening

**CC.1.5.1.A** Participate in collaborative conversations with peers and adults in small and larger groups. **CC.1.5.2.A** Participate in collaborative conversations with peers and adults in small and larger groups.

#### **Mathematics**

**CC.2.2.1.A.1** Represent and solve problems involving addition and subtraction within 20. **CC.2.2.2.A.1** Represent and solve problems involving addition and subtraction within 100.

The PA ELL Overlays for English Language Arts and Mathematics assist educators in developing instructional units, lessons, or activities that are meaningful and comprehensible for English language learners. They illustrate the dynamic process of adapting instruction and assessment based on the English language proficiency of students. The PA ELL Overlays for English Language Arts and Mathematics are models that exemplify adaptations for a select instructional context and provide resources to extend this process to other instructional units.

## Speaking Model Performance Indicator (MPI)

**Classroom Context:** Explain problem-solving procedures.

**Cognitive Function:** Students at all levels of English proficiency will EXPLAIN problem-solving procedures. Proficiency Proficiency Concepts Competencies Vocabulary Proficiency Proficiency **Proficiency** and Topic Level 4 Level 1 Level 2 Level 3 Level 5 Related Entering Emerging Expanding Developing Bridaina Language Addition and Use addition and Addend Recite words Restate the steps of Describe the Compare Explain the operation used subtraction subtraction within about the an operation to steps used in possible 20 to solve word Addition operation to be solve a math story an operation to operations to solve a problems by using problem using used to solve a solve a math necessary to math story story problem objects, drawings, graphic support problem using Counting on math story solve a math within a small and equations with problem using using graphic story problem a graphic a symbol for the Equal to a chart with a support to a using graphic organizer. group. unknown number partner support within partner. to represent the Greater than following a small group. problem. explicit, Less than repeated examples, as Making ten modeled and monitored by Ones the teacher. Place value Subtraction Sum Tens Plus Minus In all Total First, Second, Next, Last . . .

# Writing Model Performance Indicator (MPI)

**Classroom Context:** Explain problem-solving procedures.

**Cognitive Function:** Students at all levels of English proficiency will EXPLAIN problem-solving procedures.

Example	Example	Proficiency	Proficiency	Proficiency	Proficiency	Proficiency
Competencies	Vocabulary	Level 1	Level 2	Level 3	Level 4	Level 5
-	-	Entering	Emerging	Developing	Expanding	Bridging
Use addition and subtraction within 20 to solve word problems by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. Apply properties of operations as strategies to add and subtract.	Addend Addition Counting on Equal to Greater than Less than Making ten Ones Place value Subtraction Sum Tens Plus Minus In all Total First, Second,	Supply words for addition and subtraction problems using manipulative materials and a sentence frame with a partner following explicit, repeated examples, as modeled and monitored by the teacher.	Compose phrases or simple sentences about a visually supported addition/subtraction problem using a word bank or a sentence frame.	Write the steps to solve an addition or subtraction problem using a word bank or sentence frames within a small group.	Create and solve an addition or subtraction problem from a guided model with a partner.	Create and solve an addition or subtraction problem from a guided model.
	Example Competencies	Example CompetenciesExample VocabularyUse addition and subtraction within 20 to solve word problems by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.AddendApply properties of operations as strategies to add and subtract.Greater than Less thanApply properties of operations as strategies to add and subtract.Making ten OnesPlace valueSubtractionSum TensFirnst, Second,	Example CompetenciesExample VocabularyProficiency Level 1 EnteringUse addition and subtraction within 20 to solve word problems by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.AddendSupply words for addition and subtraction Counting on Equal to Greater than Less thanSupply words for addition and subtraction problems using manipulative materials and a sentence frame with a partner following explicit, repeated examples, as modeled and monitored by the teacher.Apply properties of operations as strategies to add and subtract.Ones SubtractionApply could be added and monitored by the teacher.SubtractionSubtractionSum TensPlusMinus In allTotalFirst, Second,	Example CompetenciesExample VocabularyProficiency Level 1 EnteringProficiency Level 2 EmergingUse addition and subtraction within 20 to solve word problems by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.AddendSupply words for addition and subtraction problems using manipulative materials and a sentence frame with a partner following explicit, repeated and subtract.Compose phrases or simple sentences addition 	Example CompetenciesExample VocabularyProficiency Level 1 EnteringProficiency Level 2Proficiency Level 3Use addition and subtraction within 20 to solve word problems by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.AddendSupply words for addition and subtraction manipulative materials and a sentence frame with a partner following examples, as modeled and monitored by the teacher.Proficiency Level 2 EmergingProficiency Level 3 DevelopingUse addition and subtraction problems using a symbol for the unknown number to represent the problem.AdditionSupply words for addition a sentence frame with a partner following explicit, repeated examples, as modeled and monitored by the teacher.Proficiency Level 3 DevelopingApply properties of operations as strategies to add and subtract.AdditionSum Tens Plus MinusProficiency additionProficiency Level 3 DevelopingDisplay properties of operations as strategies to add and subtract.AdditionSum Place valueProficiency subtractionSum Tens Plus MinusTens First, Second,Proficiency subtractionProficiency Level 3 DevelopingDisplay properties of operations as strategies to add and subtract.In all TotalProficiency subtractionProficiency Brodem using a word bank or a sentence frame.Display properties of proficitionAdditionAddition	Example CompetenciesExample VocabularyProficiency Level 1 EnteringProficiency Level 2 EmergingProficiency Level 3 EmergingProficiency Level 3 EmergingProficiency Level 3 DevelopingProficiency Level 4 ExpandingUse addition and subtraction within 20 to solve word problems by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.AddendSupply words for addition and quations with a symbol for the unknown number to represent the problem.Counting on a guided materials and a sentence frame with a partner following explicit, repeated examples, as modeled and monitored by the teacher.Proficiency Level 1 EmergingProficiency Level 2 DevelopingProficiency Level 3 DevelopingApply properties of operations as strategies to add and subtract.AddendSupply roperties of ones Place valueCounting on a sentence frame with a partner following explicit, repeated examples, as modeled and monitored by the teacher.Proficiency Level 2 DevelopingProficiency Level 4 ExpandingMinus In all TotalIn all First, Second,Proficiency subtractionProficiency tevel 4 EmergingProficiency Level 2 Compose phrases of addition or subtraction problem using a model and monitored by the teacher.Proficiency addition/subtraction subtraction explicit, repeated examples, as modeled and monitored by the teacher.Proficiency Borden addition or subtractionProficiency additi

**Building Productive Model Performance Indicators (MPI)** to differentiate and scaffold instruction per English language proficiency level by adjusting the *language function* and *support*.

### **Classroom Context:**

**Cognitive Function:** Students at all levels of English proficiency will

Concepts	Competencies	Vocabulary and Topic Related Language	Proficiency Level 1 Entering	Proficiency Level 2 Emerging	Proficiency Level 3 Developing	Proficiency Level 4 Expanding	Proficiency Level 5 Bridging		
			<b>Language Function</b> (differentiated measurable expectations of student language use increasing in complexity and amount from English language proficiency level 1 to level 5)						
			Identify	Answer either/or	Sequence steps	Develop	Revise		
			Copy or adapt single words, set	questions	Compare	Predict Summarize	Draw conclusions		
			phrases	Collect and	Interpret		Create		
			Label	display					
			<b>Content Stem</b> (selected focus of grade-level curriculum for all students remains constant across all English language proficiency levels)						
			<b>Instructional Support</b> (scaffolds to accompany explicit instruction with multiple opportunities for student response and feedback decreasing in degree from English language proficiency level 1 to level 5. "I do, We do, You do")						
			Manipulative materials	Manipulative materials	Manipulative materials	Guided model	Guided model		
			Visual support	Visual support	Visual support	Manipulative materials	Modeling		
			Realia	Realia	Realia	Modeling	organizers		
			Modeling	Modeling	Modeling	Graphic organizers	Word bank		

Sentence	Sentence	Sentence		
frames	frame	frame	Visual support	Sentence
<b>C</b> ara a bia	Quantita	Quantita		frame
Graphic	Graphic	Graphic	Word bank	Dubuine
organizers	organizers	organizers	Combones	RUDFICS
Dartnor	Word bank	Word bank	Sentence	Chacklista
Partier	WOLD DALIK	WOLD DALIK	ITallie	Checklists
Flexible	Rubrics	Rubrics	Rubrics	Partner
arouping	Rubiles	Rubiles	Rabiles	
3. ° ° P 3	Checklists	Checklists	Checklists	Re-teaching
First language				and/or pre-
support	Partner	Partner	Partner	teaching
Re-teaching	Flexible	Flexible	Flexible	
and/or pre-	grouping	grouping	grouping	
teaching				
	First language	First language	Re-teaching	
	support	support	and/or pre-	
	Po-toaching	Po-toaching	teaching	
	and/or pre-	and/or pre-		
	teaching	teaching		
	ceaening			