

# Integrated ELD/Math Resources to Support ELs with Problem Solving and Math Discourse

## 1. What are the expectations for Integrated ELD?

### INTEGRATED ELD LESSON COMPONENTS

**CA ELD Standards in Tandem with Content Standards**

**Content and Language Objective (Integrated ELD)**

**Scaffolds**

**Strategic Grouping**

**Formative Assessment**







**High Impact Essential Practices**

## 2. Model Lesson At-A-Glance


Los Angeles Unified School District  
MULTILINGUAL AND MULTICULTURAL EDUCATION DEPARTMENT  
INTEGRATED ELD/MATHEMATICS THREE PHASE LESSON

**LESSON OPENING**






- Introduce Focus Question and Math Objectives
- Introduce Language Objective
- Review Conversation Norms and Skills

BEFORE PHASE	DURING PHASE	AFTER PHASE
Teacher uses guiding questions as students make sense of the problem	Teacher circulates to provide support as students attempt to solve the problem and explain their thinking	Teacher facilitates whole-group discussion; students make connections across solutions and summarize learning
 Understand the problem enough to have an entry point for solving it	 Generate and explain multiple solution pathways	 Reflect individually and collectively on the ideas explored
<b>THREE READS</b> 	<b>MATH INTERVIEW</b> 	<b>MATH SUMMIT</b> 
<ul style="list-style-type: none"><li>Notice and Wonderings</li><li>Pose the problem</li><li>Students apply Constructive Conversation Skills as they explain/listen to make sense of the problem using Three Reads Protocol</li><li>Model how to think of a plan – Think Aloud</li></ul>	<ul style="list-style-type: none"><li>Review Language Objective</li><li>Model Constructive Conversation</li><li>Students apply Constructive Conversation Skills as they explain/listen to others explain</li><li>Collect a language sample</li><li>Follow-up of Math Interview</li><li>Select solutions to be shared for the Math Summit</li></ul>	<ul style="list-style-type: none"><li>Ask guiding questions to support students as they present their solutions</li><li>Students apply Constructive Conversation Skills in whole-group discussion using Math Summit Protocol</li><li>Summarize learning</li><li>WRAP-UP AND NEXT STEPS</li><li>Review Focus Question</li><li>Students self-assess</li><li>Give feedback to students</li><li>Introduce next topic</li></ul>

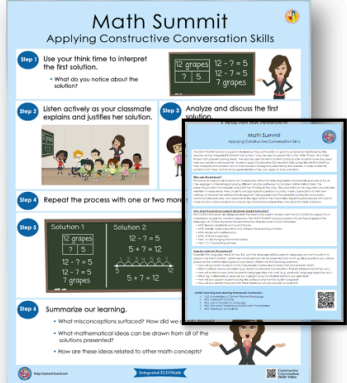
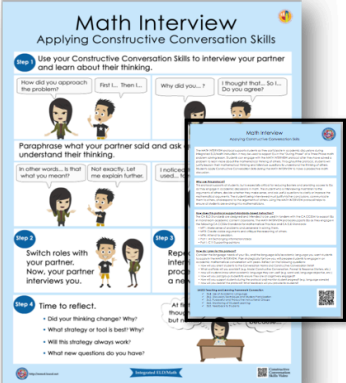
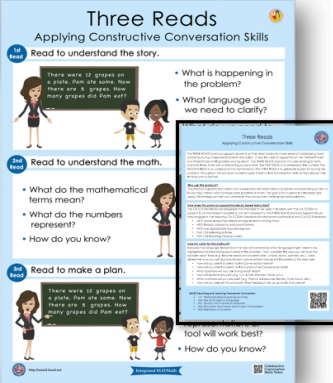
## 3. Model Lessons Grades K-6 One Per Grade Level



Integrated ELD/Mathematics  
Three Phase Lesson



## 4. Posters & Companion Cards For Protocols



**BEFORE****DURING****AFTER**

## 5. Video of Gr. K Lesson Gr. 3 & Gr. 4 Coming Soon



INTEGRATED ELD/MATH

# Integrated ELD/Math Resources to Support ELs with Problem Solving and Math Discourse

## **1. EXPECTATIONS FOR INTEGRATED ELD/MATH**

The goal of Integrated ELD is for EL students to learn and apply content knowledge, the purposes for using language, and how English works. (Ch. 2 p. 109)

The following is a list of essential components of Integrated ELD instruction:

- CA ELD Standards working in tandem with the CA Common Core State Standards for Mathematics (CA CCSSM)
- Content & Language Objectives aligned to the language demands of the task
- Appropriate scaffolds to support math discourse (Model Constructive Conversations, Prompt & Response Starters, etc.)
- Strategic Grouping
- Formative Assessment (SPF-CCLS)
- High Impact Essential Practices
  - Using Complex Text (Three Reads Protocol)
  - Fostering Academic Interactions (Math Interview Protocol)
  - Fortifying Complex Text (Math Summit Protocol)

## **4. POSTERS & COMPANION CARDS FOR EACH PROTOCOL**

Each of the protocols—Three Reads, Math Interview, and Math Summit—can stand on its own and should be introduced to students one at a time. Once students are familiar with all three protocols, they may be combined to orchestrate a full Integrated ELD/Math Three Phase lesson. The posters and companion cards were designed to support implementation of the protocols and Integrated ELD/Math instruction focused on problem solving, developing mathematical thinking, conceptual understanding, and mathematical discourse. Each poster highlights a specific protocol that supports students with applying Constructive Conversation Skills as they navigate each phase of a problem solving lesson. The companion cards provide teachers with a Model Constructive Conversation on the front and a description of the protocol on the back along with connections to the TLF, Mathematical Practices, and ELD Standards.

## **2. INTEGRATED ELD/MATH THREE PHASE LESSON AT-A-GLANCE**

The At-A-Glance resource was developed to provide an overview listing all components featured in the Integrated ELD/Math Three Phase model lessons.

## **3. INTEGRATED ELD/MATH THREE PHASE MODEL LESSONS**

Integrated ELD/Math Three Phase model lessons, one per grade level (K-6), were designed and vetted by elementary teachers who participated in the 2016 Integrated ELD/Math Elementary Teacher Fellowship.

The lessons include the essential components of Integrated ELD in order to meet the needs of ELs in math. Each lesson follows an inquiry-based model using the Three Phase lesson structure and includes protocols that support ELs as they engage in problem solving and mathematical discourse.

Three Phase math lessons are a district-wide initiative that engage students in the Mathematical Practices and foster critical thinking skills. The district goal is to teach one Three Phase math lesson per week. Lessons are available for downloading and printing on our MMED website, under Integrated ELD.

## **5. VIDEOS OF MODEL LESSONS**

Videos of the Integrated ELD/Math Model lessons for Kindergarten, Grade 3, and Grade 4 are also available to support teachers of ELs with implementation of Integrated ELD/Math instruction. Each video features a classroom teacher who completed the MMED 2016 Integrated ELD/Math Elementary Teacher Fellowship. The videos highlight the essential components of an Integrated ELD/Math Three Phase lesson in addition to three protocols—Three Reads, Math Interview, and Math Summit—designed to support ELs with problem solving and math discourse.