

Secondary Mathematics Instructional Model

Purpose:

- To establish equitable instructional practices that connects the resources, standards, and assessments to accelerate student learning.
- APS Instructional Models provide content instruction that is differentiated by language proficiency levels in order to teach students the academic language necessary to engage in grade level standards.

Equitable Mathematics Instruction is grounded in...				
Elements of Instruction	Conceptual Understanding	Procedural Fluency (following conceptual understanding)	Student Discourse	Standards for Mathematical Practice
Best Practices	<ul style="list-style-type: none"> • 3-Part Problem Based Lesson (Launch-Explore-Summary) <ul style="list-style-type: none"> ○ Problem should be of High Cognitive Demand ○ Should include time for Group Exploration • Structured Student Math Talk • Content and Application are Accessible • Productive Disequilibrium <ul style="list-style-type: none"> ○ Questioning should Promote Deeper Thinking and Maintain Cognitive Demand • Small Group Instruction and Independent Practice included to match student need 			
Core Resources	MS: Connected Math Project – Investigations and CCSS Supplementary Units HS: Core Plus – Investigations	MS: Connected Math Project – Application, Connection, Extension problems HS: Core Plus – Application, Connection, Reflection, and Extension problems	MS: Connected Math Project – Mathematical Reflections HS: Core Plus – Reflection Problems	Standards for Mathematical Practice are embedded in all aspects of math instructional practices and are not specifically aligned to particular resources.
Supplemental Resources	<ul style="list-style-type: none"> • Learn Zillion • Georgia Dept. of Ed • Math Vision Project • Illustrative Mathematics • Mobius Online (6th – 10th) • Math Navigator • Constructing Meaning Language Supports 	<ul style="list-style-type: none"> • Mobius Online (6th – 10th) • Math Navigator 	<ul style="list-style-type: none"> • Constructing Meaning • Language Supports 	
4 th Year Options: Financial Algebra Discrete Probability & Statistics Math Modeling IB/AP Courses				
Assessments	Possible Assessments: <ul style="list-style-type: none"> • PLCs and Grade Level teams create common formative and summative assessments from Core Resources • Assessments provided in curriculum resources • Assessment Tasks from Math Shell, Illustrative Mathematics, and PARCC Online Required Assessment: PARCC			
Implementation Phases				
The best practices implemented by teachers at each phase are foundational and build on each other to produce rigorous and relevant instruction at each phase. The Teaching and Learning Cycle and Conditions for Learning are used to implement:				
Phase I	Phase II	Phase III		
<ul style="list-style-type: none"> • 3-Part Problem Based Lesson in Launch-Explore-Summary format • Contextual, High-Cognitive Demand Tasks from Core Resources Used (DOK) • Balance of Conceptual Understanding and Procedural Fluency Opportunities • Student Discourse is an element of each lesson 	<ul style="list-style-type: none"> • Formative assessment embedded throughout LES structure • Contextual, High-Cognitive Demand Tasks drive most lessons • Standards for Mathematical Practice is a focus of instruction, often connected to Math Habits of Mind • Mathematical Discourse between students is frequent and structured 	<ul style="list-style-type: none"> • Formative assessment includes selecting and sequencing of student thinking for whole group • Contextual, High-Cognitive Demand Tasks drive each lesson • Procedural Fluency is developed through strategic use of contextual tasks • Student thinking and discourse are the central feature of lessons 		