Seguin ISD Tier 1 Mathematics High-Yield Instructional Strategies

Components of Effective Instruction	Description	Teacher Actions	Student Actions
High quality lesson planning: Planning Protocol	Teachers plan collaboratively with the end in mind to provide high-quality constructive learning experience.	Utilize the Seguin ISD Planning Protocol Steps 1-5 to plan effective instruction • Determine the focus concepts and standards for each unit and how they will be assessed • Determine what instructional resources are needed to teach the concepts and how all learners can be supported through differentiation • Mathematics Instructional Block Lesson Components o Problem Solving Think Aloud o Core Instruction (5-E) o Guided Math and Workstations o Daily assessment and closure	• Students are engaged in mathematically rich tasks that are aligned to the standards • Students are working collaboratively through purposeful grouping • Students making connections and justifying solutions
Problem Solving Approach	A process to help students be able to understand the problem, make a plan, carryout the plan and check solution for reasonableness. To provide students with entry points to be able to solve problems that involve multiple solution methods.	• Use the Engage and Explore parts of the lesson cycle • Give students opportunities to choose between activities • Give students opportunities in how they will present their learning • Incorporate Process Standards (throughout the 5-E model) • Provide Problem Solving Model : UPS Check	• Mathematically-rich tasks that allow for student exploration of difficult concepts • Students make connections to the real world • Students use a problem-solving model to solve a problem: UPS Check • Students work collaboratively to solve problems • Have students write their own problems in context that has meaning for them.
Mathematically Rigorous Learning Experiences	Increase the depth and complexity of lessons so that students have the academic knowledge and skills that they need to meet the challenges of the 21st century	• When planning, look at the suggested resources and choose a learning plan that incorporates rigorous, open ended activities • Incorporate Process Standards to increase the rigor of problems • Use high-level questioning strategies that promote critical thinking	• Tasks are open-ended and require students to think and reason about the math • Students are working collaboratively to solve a problem Students think and reason about mathematics and communicate their understanding through written and verbal responses Tasks that are relevant to real world situation

Progress from Concrete to Pictorial to Abstract (C-P-A)	A presentation sequence that moves gradually from concrete objects through pictures then to symbols	• Plan the use of the manipulatives within the lesson
		• Reuse the same manipulatives for many concepts, helping students generalize.
		  o Ex: Two color chips for counting, grouping, array, organizing, etc.
		• Keep the manipulatives easily accessible in the classroom for students to use at their discretion
		• Allow students to transition through each phase at their own pace
		• Manipulatives and pictorial modeling
		• Build on the use of manipulatives at the elementary level to support understanding of concepts at the secondary level:
		  o Ex: The use of base 10 blocks for multiplication on elementary and the use of algebra tiles for multiplication in Algebra I
			• Students routinely use manipulatives, as tools that support understanding of the concept
			• Students make connections between concrete, pictorial and abstract in the context of a math situation

Incorporate Frequent Formative and Summative Assessment	Formative Assessment is a process used by teachers and students as part of instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of content. Summative Assessment happens at the end of unit or course and assesses student mastery of content.	• Formative assessment is an ongoing part of the teaching cycle • Use progress monitoring tools to track mastery of skills and SEs. • Used to drive instruction • Used to create flexible grouping • Questioning and student talk are evident as part of ongoing formative assessment	• Students monitor their own mastery of content • Students keep a year long record of SEs and progress toward mastery. • Students graph pre-, during, and post-assessment data during a unit.

Gradual Release of Learning	Using scaffolding to shift from teacher-centered to student-centered instruction.	• Use during the Explain and Explore parts of the lesson cycle
		• Utilize Problem Solving Recording Sheets that are based on the gradual release of learning:
		  o Whole group instruction
		  o Guided Practice
		  o Student Collaboration
		  o Independent
			• Students are responding to teacher guiding questions throughout the Think-Aloud
			• Students work collaboratively during guided practice
			• Students work independently after completion of the teaching cycle