



# Willis Independent School District Mathematics Instructional Framework



## MATHEMATICS VISION

*Our vision is for all students to see themselves as mathematicians who are equipped with the mathematical skills to prepare them for the future of their choice.*



## MATHEMATICS BELIEF STATEMENTS

### 1. Balance Conceptual & Procedural

We believe that ALL WISD students will have a deep and balanced understanding of both why and how math works in order to tackle real-world, relevant tasks.

### 2. Depth of Key Concepts

We believe that all WISD students will achieve their grade-level standards by engaging deeply with key concepts through the use of high-quality instructional materials (HQIM), to grapple with authentic, meaningful tasks.

### 3. Coherence of Key Concepts

We believe that mathematics is a continuous, connected story where new ideas build on students' prior knowledge in order to help them learn in a way that makes sense and prepares them for more challenging math as they continue in WISD and beyond.

### 4. Productive Struggle

We believe that all WISD students will be competent and confident problem solvers by embracing mathematical challenges, taking risks, exploring new approaches, learning from their mistakes, and demonstrating perseverance.

#### MATH BELIEF STATEMENT #1

We believe that ALL WISD student will have a deep and balanced understanding of both why and how math works in order to tackle real-world, relevant tasks.

#### STUDENT

**Students will:**

- Make meaningful connections between a variety of representations and use mathematical tools and manipulatives to develop a deep understanding of how mathematics works
- Actively engage in learning conceptual and procedural mathematical concepts, applying this knowledge to solve real-world problems and relevant tasks
- Engage in problem-solving tasks that require both critical thinking and practical application of math skills

#### TEACHER

**Teachers will:**

- Provide families with resources/tools to support math instruction
- Provide tools and manipulatives and model how they connect the why and the how
- Empower students to problem solve in a variety of ways using flexible strategies
- Connect math lessons to real-world, relevant tasks that are meaningful and engaging for students

#### LEADER

**Leaders will:**

- Allocate resources, including funding, time, and professional development to impactful mathematical tools
- Monitor and evaluate the balance of conceptual and procedural instruction in the classroom
- Monitor implementation of HQIM with fidelity
- Ensure that teachers have and are providing resources to families

#### FAMILIES

**Families will:**

- Engage in discussions about math concepts with their children, asking questions that encourage them to explain the reasoning behind their solutions and how they arrived at their answers
- Connect math to everyday situations by discussing how math is used in activities like cooking, budgeting, or planning outings, reinforcing the relevance and importance of mastering grade-level standards

#### MATH BELIEF STATEMENT #2

We believe that every student will achieve their grade-level standards by engaging deeply with key concepts through the use of High-Quality Instructional Materials (HQIM), to grapple with authentic, meaningful tasks.

#### STUDENT

**Students will:**

- Engage with high-quality instructional materials and tasks to understand key math concepts
- Take ownership of their learning by actively participating in lessons and practicing consistently to achieve mastery of grade level standards

#### TEACHER

**Teachers will:**

- Utilize and internalize lessons from HQIM
- Provide feedback on student progress and adjust instruction to ensure all students are mastering grade level standards
- Collaborate, share best practices, analyze data, and adjust instruction to ensure all students are engaging deeply with key math concepts and mastering grade-level standards

#### LEADER

**Leaders will:**

- Ensure teachers have access to and receive ongoing professional development on HQIM, to support the effective use of these resources
- Create structures for regular collaboration allowing teachers to share best practices, analyze data, and adjust instruction to ensure all students are engaging deeply with key math concepts and mastering grade-level standards

#### FAMILIES

**Families will:**

- Support methods that are being taught in HQIM
- Create a supportive home environment where their child feels comfortable asking questions and seeking help with challenging math tasks

#### MATH BELIEF STATEMENT #3

We believe that mathematics is a continuous, connected story where new ideas build on students' prior knowledge in order to help them learn in a way that makes sense and prepares them for more challenging math as they continue in WISD and beyond.

#### STUDENT

**Students will:**

- Make connections between what they already know and use their prior knowledge to help them understand new math ideas
- Recognize how each new concept prepares them for more difficult math in the future and approach it with confidence

#### TEACHER

**Teachers will:**

- Review and understand concepts as they are vertically aligned and use common math vocabulary to help students activate their prior knowledge and see its relevance to the new topic
- Create collaborative learning environments and learning opportunities where students can discuss and explore how their existing knowledge helps them understand new math ideas, promoting peer learning and shared problem-solving strategies

#### LEADER

**Leaders will:**

- Provide collaboration time for teachers through regular team meetings where they can share successful strategies for activating prior knowledge and using common math vocabulary effectively
- Conduct classroom observations and provide feedback focused on how teachers activate prior knowledge and integrate math vocabulary
- Provide the time for district wide vertical alignment and the processes/protocols for effective alignment

#### FAMILIES

**Families will:**

- Support students by having conversations about what your child has learned in math class, asking them to explain concepts in their own words and relate them to previous knowledge

#### MATH BELIEF STATEMENT #4

We believe that ALL WISD student will be competent and confident problem solvers by embracing mathematical challenges, taking risks, exploring new approaches, learning from their mistakes, and demonstrating perseverance.

#### STUDENT

**Students will:**

- Stay open-minded and not give up when math gets tough, knowing it's part of their journey to mastering more complex problems
- Take risks and try new strategies and methods, even if they're unsure, to explore different ways to solve problems
- Use mistakes as learning opportunities to improve their understanding

#### TEACHER

**Teachers will:**

- Model productive struggle using questioning and wait time as a strategy
- Model/celebrate risk taking and focusing more on the approach to thinking through and solving problems over getting the right answer
- Turn mistakes into opportunities for students to have discourse through collaboration

#### LEADER

**Leaders will:**

- Ensure teachers have time to internalize lessons and plan for misconceptions
- Look for evidence during instruction that students are comfortable engaging in collaborative and independent problem solving, and that the teacher uses questioning to support students in grappling with complex tasks

#### FAMILIES

**Families will:**

- Support students in taking risks and seeing themselves as capable by helping students see mathematics in real world contexts at home; model and encourage mathematical thinking