



MATHEMATICS FRAMEWORK

E-12



MATH LEARNING COMMUNITY

Effective teaching of mathematics creates a **community** which poses purposeful questions and facilitates meaningful math discourse

- *Students learn in a collaborative math community through meaningful discourse which values questioning, mindful listening, reflecting on and justifying their reasoning.*

MATH IDENTITY

Effective teaching of mathematics empowers **students to see themselves** authentically as mathematicians, problem solvers, and be confident in their math work and knowledge.

- *Students will use mathematics to analyze and change the world around them.*

CONNECT AND USE MATHEMATICAL REPRESENTATIONS

Effective teaching of mathematics engages students in making **connections** among mathematical representations to **deepen understanding** in mathematics concepts and procedure and as tools for problem solving.

- *Students will understand and value multiple ways of solving problems.*

BUILD PROCEDURAL FLUENCY FROM CONCEPTUAL UNDERSTANDING

Effective teaching of mathematics **builds fluency** with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.

- *We prioritize conceptual understanding and flexible thinking.*

PROMOTE REASONING AND PROBLEM SOLVING THAT ENCOURAGES PRODUCTIVE STRUGGLE

Effective teaching of mathematics engages students in **solving and discussing tasks** that promote mathematical reasoning and problem solving and allow multiple entry points and **varied solution strategies**.

- *Students will persevere in exploring and reasoning through tasks requiring a high cognitive load that have multiple entry points and varied solution strategies.*

ESTABLISH MATHEMATIC GOALS & ELICIT/USE EVIDENCE OF STUDENT THINKING

Effective teaching of mathematics establishes **clear goals** for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to **guide instructional decisions**.

- *Math lessons have a clear purpose based on evidence of student learning and understanding.*
- *The teacher uses first what their students know and secondarily uses the curriculum as a resource.*