

MATHEMATICS STANDARDS-BASED CLASSROOM INSTRUCTIONAL FRAMEWORK





STANDARDS FOR MATHEMATICAL PRACTICE

The Standards for Mathematical practice represent the habits and attitudes of mathematical thinkers, are integral to the structure of GSE mathematics, and define the way knowledge comes together and is used by students.

Students are expected to:

- 1. Make sense of problems and persevere in solving them.
- 2. Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- 4. Model with mathematics.
- 5. Use appropriate tools strategically.
- 6. Attend to precision.
- 7. Look for and make use of structure.
- 8. Look for and express regularity in repeated reasoning.

<u>OPENING</u>

Teacher:

- Introduces standard(s), learning target(s) and success criteria, along with an emphasis on academic work
- Engages students, accesses prior knowledge and makes connections
- Provides instruction aligned to standard(s), including skill development and conceptual understanding
- Engages students in collaborative, problem-solving tasks
- Promotes student-focused learning

• Engages students in lesson-specific

and expectations for work session

• Reviews learning targets, success criteria

Introduces organizing tools

• Models problem-solving and

comprehension strategies

Asks challenging questions

Student:

- Accesses and makes
 connections with prior knowledge
- Engages in note-taking strategies
- Participates in discussions; investigates and analyzes thinking
- Asks thought-provoking and clarifying questions using academic vocabulary and the language of the standards

TRANSITION TO WORK SESSION

WORK SESSION

Student:

- Engages in lesson-specific discussion
- Prepares organizing tools
- Asks clarifying questions
- Models problem-solving and comprehension strategies

Teacher:

Teacher:

discussion

- Facilitates independent and small group work; scaffolds learning task
- Purposefully assigns collaborative groups and differentiates tasks
- Monitors, assesses and documents student progress and provides ongoing, standards-based feedback
- Provides small group instruction
- Allows students to engage in productive struggle, make mistakes, and engage in error analysis
- Maintains classroom environment conducive to productivity and engagement

Student:

- Engages in independent or collaborative learning
- Completes conceptually rich performance tasks
- Demonstrates proficiency of skills and concepts related to content standards
- Participates in discussions; Investigates and analyzes thinking

<u>CLOSING</u>

Teacher:

- Facilitates student-led summary sessions
- Clarifies misconceptions in student understanding and provides data-driven, targeted feedback
- Formatively assesses student understanding
- Summarizes and celebrates progress toward learning target and mastery of standard(s)
- Identifies next steps for instruction based on data analysis

- Student:
 - Shares, assesses, and justifies work using language of the standards
 - Provides peer feedback and asks clarifying questions using language of the standards
 - Reflects and summarizes progress toward mastery of learning target/standard based on success criteria