



High School Math

At least one of the following artifacts must be discussed during the evaluation: peer feedback, student feedback, lesson plans, student work or parent feedback.

QUALITY STANDARD 1

Teachers demonstrate mastery of and pedagogical expertise in the content they teach.

The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content areas he or she teaches. The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement area.

ELEMENT A: Teachers provide instruction that is aligned with the Colorado Academic Standards, their district's organized plan of instruction; and the individual needs of their students.

Examples of artifacts that may be used as evidence to support practice:

- Uses common assessments within the building for like courses based upon standards
- Uses district common assessments which are based upon state standards
- Participates actively in building PLC work
- Plans using district curriculum guides
- Participates in feeder articulation (various district groups, PLC's, etc.)
- Participates in statewide work building curriculum aligned to state standards
- Intentionally shares learning targets with the students
- Makes Standards for Mathematical Practice evident in the classroom
- Differentiates instruction for individual needs of students
- Plans using results of formative assessment and previous knowledge

ELEMENT B: Teachers demonstrate knowledge of student literacy development in reading, writing, speaking and listening.

Examples of artifacts that may be used as evidence to support practice:

- Defines complex text for students
- Provides for students to critique the reasoning of others through mathematical discourse (SMP 3)
- Provides for students to construct viable mathematical arguments (SMP 3)
- Explicitly instructs and/or models strategies to read mathematical texts

ELEMENT C: Teachers demonstrate knowledge of mathematics and understand how to promote student development in numbers and operations, algebra, geometry and measurement and data analysis and probability.

Examples of artifacts that may be used as evidence to support practice:

- Explicitly make inter-disciplinary (inside and outside of mathematics) connections (application and real-world problems)
- Provides for students to generate a context for a given problem
- Provide for students to solve routine problems to develop mathematical fluency
- Provides for students to solve both non-routine and non-algorithmic problems
- Asks open-ended questions
- Creates systems and structures that allow mathematical risk taking to challenge students and stimulate curiosity
- Connects different elements of mathematical content to build a unified mathematical concept

ELEMENT D: Teachers demonstrate knowledge of the content, central concepts, tools of inquiry, appropriate evidence-based instructional practices and specialized character of the disciplines being taught.

Examples of artifacts that may be used as evidence to support practice:

- Provides for students to explore multiple ways to approach a problem and provides multiple entry points to problems as well as allowing for multiple solutions.
- Provides for students to make connections between, as well as create multiple representations of the functions (graphical, numerical, symbolic, verbally)
- Uses technology, open-ended questions, collaboration, deliberate questioning that builds student understanding for inquiry
- Uses wait time to encourage and facilitate productive struggle
- Labels and identifies mathematical thinking that is mathematically valid even if the method differs from that of the teacher
- Asks supporting questions that encourage students to continue working
- Provides hints or cues without giving students the answers
- Asks probing questions to better assess student thinking and current understanding

ELEMENT E: Teachers develop lessons that reflect the interconnectedness of content areas/disciplines.

Examples of artifacts that may be used as evidence to support practice:

- Teacher uses examples from other disciplines
- Modeling annotation of text to clarify misunderstandings and to generate comprehension of a problem
- Modeling engaging in a conversation about the topic before starting to write about it individually
- Explicitly make inter-disciplinary (inside and outside of mathematics) connections (application and real-world problems)
- Provides for students to generate a context for a given problem
- Teachers plan for students to summarize notes and concepts
- Teachers plan for students to be accountable for new vocabulary
- Teachers intentionally hold students to a standard of precision with the language of mathematics

ELEMENT F: Teachers make instruction and content relevant to students and take actions to connect students' background and contextual knowledge with new information being taught.

Examples of artifacts that may be used as evidence to support practice:

- Offers choice in task selection within a lesson followed by feedback on their choice
- Leveled tasks that allow for multiple entry points
- Diagnostic experiences that highlight their prior knowledge

QUALITY STANDARD II

Teachers establish a safe, inclusive and respectful learning environment for a diverse population of students.

ELEMENT A: Teachers foster a predictable learning environment in the classroom in each student has a positive, nurturing relationship with caring adults and peers.

Examples of artifacts that may be used as evidence to support practice:

- Teacher adheres to policy of generous 'wait time' in allowing for student responses to questions (TESA/GESA-based training)
- Teacher lesson encourages student questions and risk taking
- Agendas on board, bell starters, exit tickets, closure
- consistent class structures,
- seating charts for a purpose
- collecting papers
- consistent behavioral and academic expectations, with consistent and appropriate responses to student infraction
- Do students feel safe to ask and answer questions
- Use of appropriate humor
- teacher is actually near students and engaged with students (movement- small groups- work the room)
- conferences with students (after school, during class, planning periods etc)
- Systems, structures, rituals, and routines that foster a community of learners
- Students voice are heard
- Both students and teachers are engaged in dialogue

ELEMENT B: Teachers demonstrate a commitment to and respect for diversity, while working toward common goals as a community and as a country.

Examples of artifacts that may be used as evidence to support practice:

- Students advocating and helping each other become better mathematicians
- Teacher allows and encourages courageous conversations around race when appropriate
- Protocols that allow different students to take on leadership roles

- All student voices are heard
- Use multiple pathways of communication with students and parents
- Multiple readings that provide choice and opportunities for students to find connections.
- Choice around writing that allows for personal perspective
- Provides translated materials for parents

ELEMENT C: Teachers engage students as individuals with unique interests and strengths.

Examples of artifacts that may be used as evidence to support practice:

- Survey students about topics of interests and then
- Provide students opportunities to select thesis topics
- Research topic choice

ELEMENT D: Teachers adapt their teaching for the benefit of all students, including those with special needs across a range of ability levels

Examples of artifacts that may be used as evidence to support practice:

- analysis of primary sources through DBQ lessons/essays,
- Socratic Seminars (group discussions),
- interpretation of history and culture through art and other visual media
- students monitor their progress towards achievement of an academic goal
- students monitor their progress using Powerschool
- High expectations for all students
 - one on one meetings to help struggling students
 - creation of small 'study teams' of struggling students
- "Solve the problem"
- make reasonable predictions based on data
- College readiness practices for all students
- Costa's levels of questions
- Enduring Understandings and Essential Questions
- Grading policy is clear for accountability

ELEMENT E: Teachers provide proactive, clear and constructive feedback to families about students' progress and work collaboratively with the families and significant adults in the lives of their students.

Examples of artifacts that may be used as evidence to support practice:

- Student conferences
- email communication
- Phone calls
- Attend IEP meetings as needed

ELEMENT F: Teachers create a learning environment characterized by acceptable student behavior, efficient use of time and appropriate intervention strategies.

Examples of artifacts that may be used as evidence to support practice:

- Clearly stated behavior expectations
- Appropriate positive and correctional behavior interactions
- Lesson planning and delivery is timely

QUALITY STANDARD III

Teachers plan and deliver effective instruction and create an environment that facilitates learning for their students.

ELEMENT A: Teachers demonstrate knowledge of current developmental science, the ways in which learning takes place and the appropriate levels of intellectual, social and emotional development of their students.

Examples of artifacts that may be used as evidence to support practice:

- Teacher is able to explain or reference current research as a reason for the design of the lesson
- Teacher can articulate effective instructional strategies, management strategies and curriculum design strategies
- Repetition is evident in the classroom
- Teacher makes connections to prior knowledge
- Allowing students to struggle and communicate their progress
- High student engagement evident in the classroom
- Teacher uses comparison and sorting
- Teacher intervenes when appropriate and adjusts lessons
- Reteaches when appropriate
- Uses formative assessment to drive instruction

ELEMENT B: Teachers plan and consistently deliver instruction that draws on results of student assessments, is aligned to academic standards and advances students' levels of content knowledge and skills.

Examples of artifacts that may be used as evidence to support practice:

- Use results of frequent formative assessments to inform and then drive instruction
- Creates systems and structures that allow mathematical risk taking to challenge students and stimulate curiosity
- Use current student standardized data to drive instruction

ELEMENT C: Teachers demonstrate a rich knowledge of current research on effective instructional practices to meet the developmental and academic needs of their students.

Examples of artifacts that may be used as evidence to support practice:

- Teacher interactions with students are differentiated based upon their individual needs
- Teachers know students well enough to be able to apply current educational research as a means to further student knowledge
- Teacher is able to explain or reference current research to meet individual student needs

ELEMENT D: Teachers thoughtfully integrate and utilize appropriate available technology in their instruction to maximize student learning.

Examples of artifacts that may be used as evidence to support practice:

- Teacher incorporates problems that require the use of technology
- Teacher uses technology as a tool for inquiry
- Teacher uses technology to assist with lesson implementation
- Teacher develops lessons that allow students to research information and data using technology
- Teacher creates lessons that use data collection devices
- Teacher allows opportunities for students to use technology to explore

ELEMENT E: Teachers establish and communicate high expectations for all students and plan instruction that helps students develop critical thinking and problem solving skills.

Examples of artifacts that may be used as evidence to support practice:

- Teacher communicates expectations to students
- Teacher identifies differential treatment of low expectancy students
- Low expectancy students receive verbal and nonverbal indications that they are valued and respected
- Teacher asks questions of low-expectancy students and stays with them when answered incorrectly or incompletely
- Creates structures where students share thinking
- Models thinking processes
- Use of thinking maps
- Examining exemplars
- Critiquing problems with errors

ELEMENT F: Teachers provide students with opportunities to work in teams and develop leadership qualities.

Examples of artifacts that may be used as evidence to support practice:

- Uses a variety of grouping strategies based on task or lesson
- Allows students to become “experts” and assist in explanations or duties
- Allows students to share group norms and expectations

ELEMENT G: Teachers communicate effectively, making learning objectives clear and providing appropriate models of language.

Examples of artifacts that may be used as evidence to support practice:

- Provides for students to critique the reasoning of others through mathematical discourse (SMP 3)
- Provides for students to construct viable mathematical arguments (SMP 3)
- Intentionally shares learning targets with the students
- Think-Pair-Share regarding the learning target for the day

ELEMENT H: Teachers use appropriate methods to assess what each student has learned, including formal and informal assessments, and use results to plan future instruction.

Examples of artifacts that may be used as evidence to support practice:

- Exit Tickets to inform future instruction
- Non verbal check in (fist to five, thumbs up/thumbs down)
- partner assessments
- Performance tasks
- Summative common assessment
- Self assessments written and verbal
- Quick writes
- Opportunity for revision
- Uses Assessment data to plan future instruction