

SBOE Math Ad Hoc Committee Meeting

IMRA Tools for Mathematics



Agenda

- 1. IMRA TEKS Alignment and Review
- 2. IMRA Quality Rubric Overview
- 3. IMRA Mathematics Quality Rubric
- 4. IMRA Evidence Guides Overview



• Understand how instructional materials are reviewed for standards alignment.

Objectives

 Understand the foundational principles of the IMRA Mathematics K–12 quality rubrics.

• Learn how the evidence guide serves as a resource for indicator-level evidence collection.





SBOE Instructional Materials Review and Approval (IMRA) Criteria





Standards Alignment Percentage

Materials cover a minimum percentage of standards as determined by SBOE (100%)



Suitable and Appropriate*

Content in materials meet suitability requirements defined by SBOE and other provisions of TEC (e.g., §28.002(h))

* Also ensures no obscene or harmful content under CIPA, TEC §28.0022, Penal Code §43.22



Quality Review

Material quality supports student's ability to demonstrate proficiency in the standards

Also ensures compliance with three-cuing ban



Factual Errors

Materials do not contain factual errors



Physical and Electronic Specifications

Material components meet physical and digital requirements



Parent Portal

Materials included on parent portal that meet transparency requirements

Approval Requirements: 19 TAC §67.25





Full-subject, tier-one materials must cover 100% of the student expectations for the grade level or course (e.g., math, grade 1).



Partial-subject, tier-one materials must cover 100% of the student expectations identified for the grade level or course (e.g., phonics, kindergarten).



Supplemental materials must cover at least one student expectation and must cover 100% of the student expectations to which the publisher has claimed to cover.

Math Content Standards Example



Knowledge and Skills Strand

Knowledge and Skills (KS)
Statement

(2) Number and Operations. The student applies mathematical process standards to represent and use rationale numbers in a variety of forms.

The student is expected to:

- (A) Classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers;
- (B) Identify a number, its opposite, and its absolute value;
- (C) Locate, compare, and order integers and rational numbers using a number line;
- (D) Order a set of rational numbers arising from mathematical and real-world contexts; and



Student Expectation

Math TEKS Process Standards



- Are intentionally placed as a point of entry at the beginning of the knowledge and skills for each grade level.
- Weave the other knowledge and skills together so that students may be successful problem solvers, use math efficiently, and effectively in daily life.

- (1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
 - (A) apply mathematics to problems arising in everyday life, society, and the workplace;
 - (B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;
 - (C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;
 - (D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
 - (E) create and use representations to organize, record, and communicate mathematical ideas;
 - (F) analyze mathematical relationships to connect and communicate mathematical ideas; and
 - (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

TEKS Citation Requirements





To demonstrate coverage of a student expectation, publishers must provide at least two citations for each breakout— one narrative and one activity citation.



Process standards can have one narrative and one activity citation or two activity citations for each breakout.



Standards must be covered in the student and teacher materials.

Student Expectations vs. Breakouts



- TEA uses the language in the student expectations (SEs) to create the breakouts.
- Breakouts are the smaller parts of the larger SE that outline what students should know and be able to do to demonstrate grade-level proficiency.
- Each associated breakout must be addressed for an SE to be considered thoroughly addressed in instructional materials.
- The SEs are separated into breakouts using specific rules.



Breakout Rules



- "And" typically must be broken out
- "Between/among" must be kept together
- "Or" must be kept together and materials may include one or the other (both not necessary)
- "Including" must be broken out
- "Such as" is not included in the breakout



Breakout Example: and



Mathematics, Grade 6

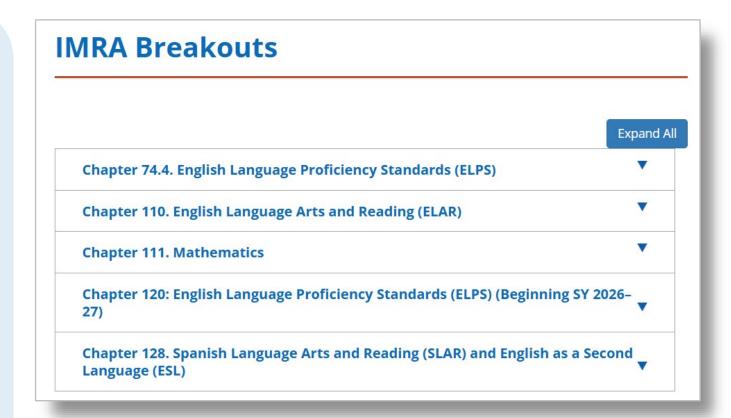
- (1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
 - (A) apply mathematics to problems arising in everyday life, society, and the workplace
 - (i) apply mathematics to problems arising in everyday life
 - (ii) apply mathematics to problems arising in society
 - (iii) apply mathematics to problems arising in the workplace

Breakout Documents



We have created and published the breakouts on the TEA website.

- Mathematics: Chapter 111
- English Language Proficiency Standards: Chapter 74.4



Narrative vs Activity Citation



Narrative Citation

- An opportunity for the teacher to teach the component of the knowledge or skill
- An opportunity for the student to learn the component of the knowledge or skill

Activity Citation

 An opportunity for the student to demonstrate the component of the knowledge or practice the skill





SBOE Instructional Materials Review and Approval (IMRA) Criteria





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Definition of Instructional Materials

An **instructional material** is any content that conveys the essential knowledge and skills of a subject through any medium or combination of media. The term includes:



a) material used by a **teacher**, including a lesson plan, answer key, assessments, grading rubric, or unit plan;



b) material used by a principal or campus instructional leader to support instruction; and



c) material used by a **student**, including a book, supplementary materials, a combination of a book, workbook, and supplementary materials, computer software, magnetic media, DVD, CD-ROM, computer courseware, on-line services, or an electronic medium, or other means of conveying information to the student or otherwise contributing to the learning process through electronic means, including open education resource instructional material.

HB 1605 Established Three Categories of Instructional Materials



Full-subject, Tier-one

Instructional material designed to provide a student with mastery of the essential knowledge and skills adopted by the State Board of Education (SBOE) for a certain subject and grade level in the required curriculum under Section 28.002 or for prekindergarten without the need for supplementation, if implemented as designed.

Partial-subject, Tier-one

Instructional material designed to provide a student with mastery in a portion of the essential knowledge and skills adopted by the SBOE for a certain subject and grade level in the required curriculum under Section 28.002 or for prekindergarten without the need for supplementation in the essential knowledge and skills covered, if implemented as designed.

Supplemental

Instructional material designed to assist in the instruction of **one or more** of the essential knowledge and skills adopted by the SBOE for **a subject** in the required curriculum under <u>Section 28.002</u> or for prekindergarten.

This year, reviewers will evaluate products that fall in the Full-Subject, Tier-1 and the Supplemental categories.

Instructional Materials







Materials **teachers** use to plan and teach





Materials **students** use to learn and practice

Quality Review Rubrics | Design Overview

The design of quality review rubrics is based on:



what **educators tell us they need** to effectively implement instructional materials,



the evidence that exists about the best ways to teach each subject, and



the **evidence that exists** on the most **effective ways for learning to occur.**



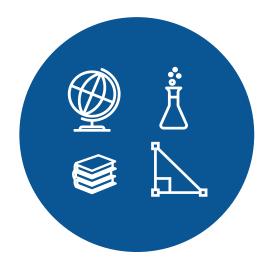
Quality Review Rubrics | Design Categories

Quality review rubrics are designed with two categories: Implementation Quality and Learning Quality



Implementation Quality is similar for all content areas.

 Are the components that support effective implementation present in the materials?



Learning Quality is unique to the subject being reviewed.

- Are the components quality and aligned with research on the best ways to teach the subject?
- When taught as designed, do the components support a student reaching grade-level proficiency on the standards?



Quality Review Rubrics | Math K-12 Rubric Design (1/3)

Each category has multiple sections.

Implementation Quality

1. Intentional Instructional Design

Materials support educators in effective implementation through intentional course, unit, and lesson-level design.

2. Progress Monitoring

Materials support educators in effective implementation through frequent, strategic opportunities to monitor and respond to student progress.

3. Supports for All Learners

Materials support educators in reaching all learners through design focused on engagement, representation, and action/expression for learner variability.

Learning Quality

4. Depth and Coherence of Key Concepts

Materials are designed to meet the rigor of the standards while connecting concepts within and across grade levels/courses.

5. Balance of Conceptual and Procedural Understanding

Materials are designed to balance conceptual understanding, procedural skills, and fluency.

6. Productive Struggle

Materials support students in applying disciplinary practices to productive problem-solving, including explaining and revising their thinking.

Implementation Quality

Category Sections

Intentional Instructional Design

Progress Monitoring

Supports for All Learners

Learning Quality

Category Sections

Depth and Coherence of Key
Concepts

Balance of Conceptual and Procedural Understanding

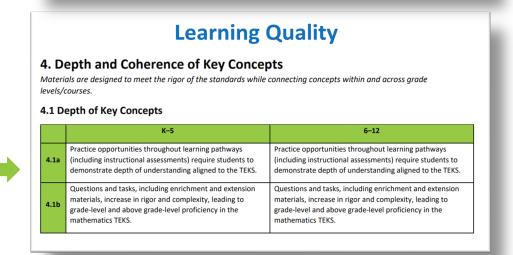
Productive Struggle



Quality Review Rubrics | Math K-12 Rubric Design (2/3)

Categories and sections are **color-coded** in the rubrics for easy identification.





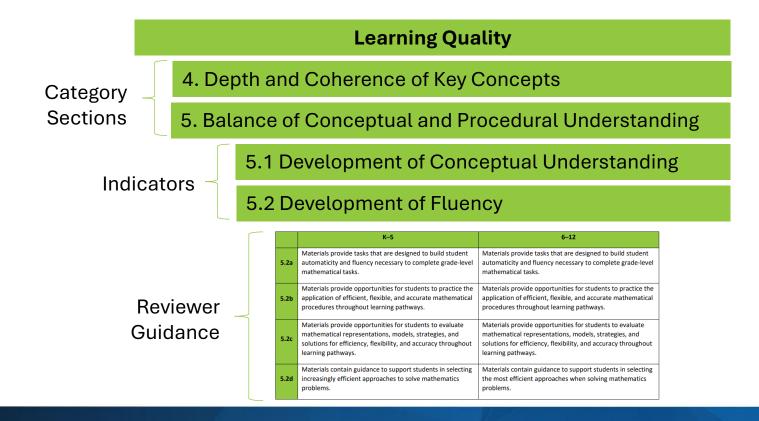




Quality Review Rubrics | Math K–12 Rubric Design Breakdown (3/3)

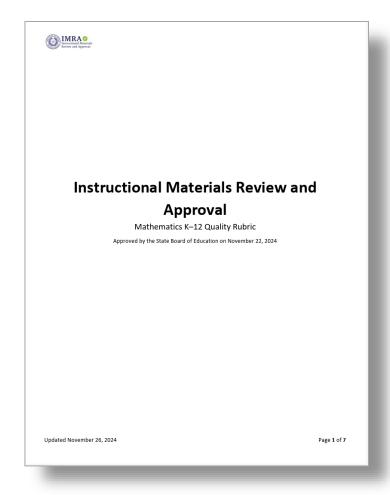
Each section has indicators and reviewer guidance.

Reviewer guidance provides the "look-fors" to support reviewers in gathering evidence during the quality review process.





Let's look at the Mathematics K-12 Quality Rubric

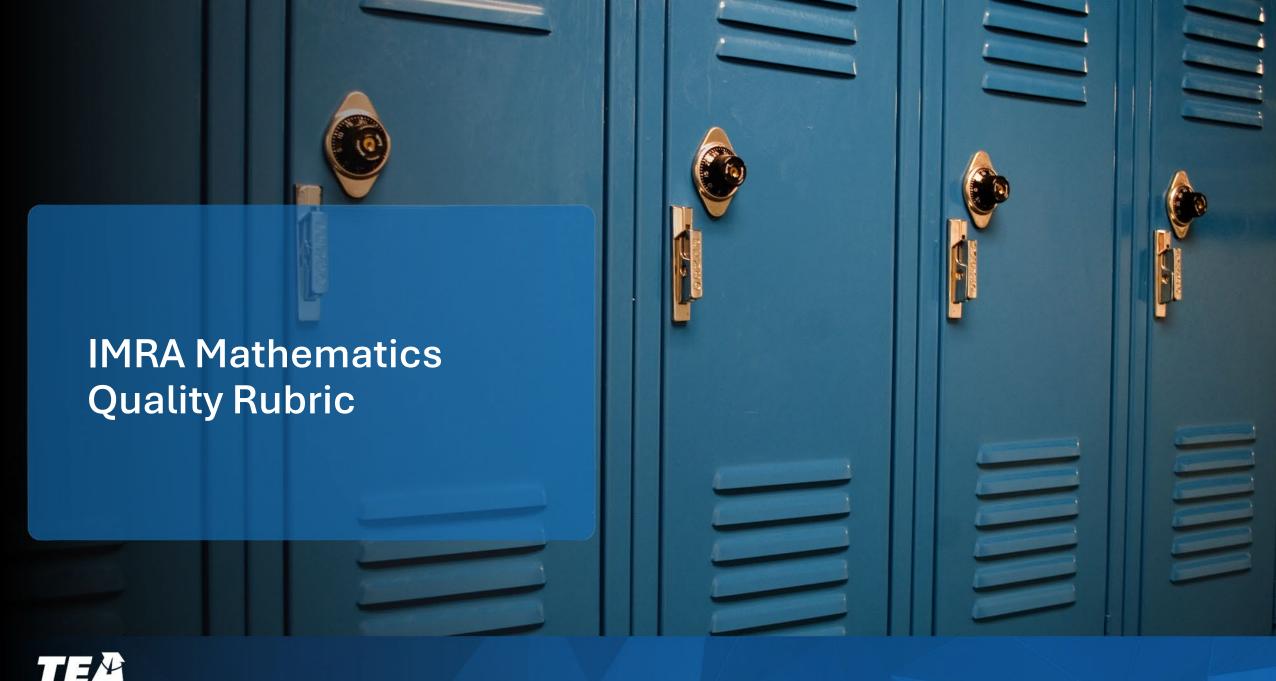






Insert links







Mathematics — Implementation Quality

Section Intentional Instructional Design Progress Monitoring Supports for All Learners Depth and Coherence of Key Concepts Balance of Conceptual and **Procedural Understanding Implementation Quality** Productive Struggle



Mathematics — Intentional Instructional Design (1/2)

Section	Question
Intentional Instructional Design	
Progress Monitoring	
Supports for All Learners	Are the materials well-designed
Depth and Coherence of Key Concepts	at the course and lesson level?
Balance of Conceptual and Procedural Understanding	
Productive Struggle	



Mathematics — Intentional Instructional Design (2/2)

Section	Guidance
Intentional Instructional Design	To plan effectively, educators first need to know how the course is designed. At the unit level, educators need materials that build
Progress Monitoring	their background knowledge to teach the unit effectively. Materials should also include an overview of assessments for each unit and
Supports for All Learners	how to use them, along with resources for home-school
Depth and Coherence of Key Concepts	connections. Lessons should be comprehensive, detailed, and structured,
Balance of Conceptual and Procedural Understanding	including everything a beginning teacher would need to teach effectively, and an experienced teacher could customize based
Productive Struggle	on their expertise. Finally, the visual design of the materials should support students engaging with the concept without being distracting.



Mathematics — Progress Monitoring (1/2)

Section	Question
Intentional Instructional Design	
Progress Monitoring	Do the materials support educators and students through frequent, strategic opportunities to monitor and respond to student progress?
Supports for All Learners	
Depth and Coherence of Key Concepts	
Balance of Conceptual and Procedural Understanding	
Productive Struggle	



Mathematics — Progress Monitoring (2/2)

Section	Guidance
Intentional Instructional Design	Materials should include aligned instructional assessments and progress monitoring tools , which help identify what a student already knows (diagnostic) and where a student may need additional support (formative), and if a student has reached proficiency (summative).
Progress Monitoring	
Supports for All Learners	
Depth and Coherence of Key Concepts	But assessments alone are not enough. Materials should also include guidance to help educators respond to the information collected through these assessments. This includes how to interpret the data efficiently and effectively, how to use tasks and activities to respond to student trends in performance, and how to support individual students based on their needs.
Balance of Conceptual and Procedural Understanding	
Productive Struggle	



Mathematics — Supports for All Learners (1/2)

on	Question
ntional Instructional Design	
ogress Monitoring	Do the materials provide supports to help educators effectively teach all learners?
upports for All Learners	
epth and Coherence of Key Concepts	
Salance of Conceptual and Procedural Understanding	
Productive Struggle	



Mathematics — Supports for All Learners (2/2)

Section	Guidance
Intentional Instructional Design	This guidance includes differentiation and scaffolds , such as supports for students who have not yet reached grade-level proficiency, pre-teaching and embedded supports for vocabulary development and complex terms, and guidance for educators to
Progress Monitoring	
Supports for All Learners	design a learning environment that helps students focus on the content to be learned.
Depth and Coherence of Key Concepts	Materials should support teachers with effective instructional
Balance of Conceptual and Procedural Understanding	methods, such as various instructional approaches, linking to what students have already learned, and flexible grouping.
Productive Struggle	Supports for multilingual learners should be aligned to the English Language Proficiency Standards (ELPS), embedded throughout the materials, and designed to support dual language immersion (DLI) programs.



Mathematics — Implementation Quality

Section Intentional Instructional Design Progress Monitoring Supports for All Learners Depth and Coherence of Key Concepts Balance of Conceptual and **Procedural Understanding Implementation Quality** Productive Struggle



Mathematics — Learning Quality

Section Intentional Instructional Design **Progress Monitoring** Supports for All Learners **Depth and Coherence of Key** Concepts **Balance of Conceptual and Procedural Understanding Learning Quality Productive Struggle**



Mathematics — Depth and Coherence (1/3)

Section	Question
Intentional Instructional Design	Do the materials meet the rigor of the standards while connecting concepts across grade levels/courses?
Progress Monitoring	
Supports for All Learners	
Depth and Coherence of Key Concepts	
Balance of Conceptual and Procedural Understanding	
Productive Struggle	



Mathematics — Depth and Coherence (2/3)

Section	Rationale
Intentional Instructional Design	"A focused, coherent progression of mathematics learning with an emphasis on proficiency with key topics, should become the
Progress Monitoring	norm in elementary and middle school mathematics curriculaby the term focused, [the authors] mean that curriculum must include (and engage with adequate depth) the most important topics underlying success in school algebra." (National Mathematics Advisory Panel, 2008)
Supports for All Learners	
Depth and Coherence of Key Concepts	
Balance of Conceptual and Procedural Understanding	"It is imperative that teachers be provided with curricular materials that clearly lay out well-reasoned organizations of
Productive Struggle	student learning progressions with regard to mathematical content and reasoning. (NCTM, 2016)

US Department of Education. (2008). Final report of the national mathematics advisory panel. National Council of Teachers of Mathematics. (2016). Curricular coherence and open educational resources.



Mathematics — Depth and Coherence (3/3)

Section	Guidance
Intentional Instructional Design	Materials should include practice opportunities with questions and tasks that increase in rigor and complexity
Progress Monitoring	and require students to demonstrate depth of understanding aligned with the TEKS.
Supports for All Learners	
Depth and Coherence of Key Concepts	Materials demonstrate horizontal and vertical coherence across concepts and grades/courses. This coherence should be evidenced at the lesson and activity level, connecting to
Balance of Conceptual and Procedural Understanding	students' prior knowledge and setting them up for future learning.
Productive Struggle	Spaced retrieval and interleaved practice opportunities support students' continued knowledge of previously learned skills and concepts.



Mathematics — Balance of Conceptual and Procedural (1/3)

Section	Question
Intentional Instructional Design	
Progress Monitoring	
Supports for All Learners	Are the materials designed to balance conceptual understanding, procedural skill, and fluency?
Depth and Coherence of Key Concepts	
Balance of Conceptual and Procedural Understanding	
Productive Struggle	



Mathematics — Balance of Conceptual and Procedural (2/3)

Section	Rationale
Intentional Instructional Design	"To be mathematically proficient, students must develop conceptual understanding, procedural fluency, strategic
Progress Monitoring	competence, adaptive reasoning, and productive disposition." (National Research Council, 2001) "With due consideration of contemporary literature and
Supports for All Learners	
Depth and Coherence of Key	research regarding procedural and conceptual knowledge,
Concepts	 [teachers should be aware that]: We should be considering our practices to include Procedural knowledge and Conceptual knowledge, not Procedural Knowledge or Conceptual knowledge, [and] Procedural knowledge and conceptual knowledge are both important and help to strengthen each other." (Hurrell, 2021)
Balance of Conceptual and Procedural Understanding	
Productive Struggle	

National Research Council. (2001). Adding it up: Helping children learn mathematics.

Hurrell, Derek. (2021) Conceptual knowledge OR Procedural Knowledge OR Conceptual Knowledge AND Procedural knowledge: Why the conjunction is important for teachers. Australian Journal of Teacher Education.



Mathematics — Balance of Conceptual and Procedural (3/3)

Section	Guidance
Intentional Instructional Design	Materials should develop students' understanding of models, including how to interpret, evaluate, and create them. Models
Progress Monitoring	support the development and application of conceptual understanding to new contexts.
Supports for All Learners	
Depth and Coherence of Key Concepts	In addition to building conceptual understanding, materials should support students' balanced development of fluency and automaticity appropriate to the grade-level TEKS.
Balance of Conceptual and Procedural Understanding	Academic mathematical language should be developed
	throughout the materials using visuals, manipulatives, and communication with peers and educators.
Productive Struggle	The materials provide appropriate integration of the TEKS process standards in each lesson.



Mathematics — Productive Struggle (1/3)

Section	Question
Intentional Instructional Design	
Progress Monitoring	
Supports for All Learners	 Do the materials provide support to students and educators to encourage
Depth and Coherence of Key Concepts	persevering through problem solving
Balance of Conceptual and Procedural Understanding	and making sense of mathematics?
Productive Struggle	



Mathematics — Productive Struggle (2/3)

Section	Rationale
Intentional Instructional Design	"students expend effort to make sense of mathematics, to figure something out that is not immediately apparentThe struggle we have in mind comes from solving problems that are within reach and grappling with key mathematical ideas that are comprehensible but not yet well formed." (Hiebert et al., 2007) "productive struggle comprises the work that students do to make sense of a situation and determine a course of action when a solution strategy is not stated, implied, or immediately obviousevery student must have the opportunity to struggle with challenging mathematics and to receive support that encourages their persistence without removing the challenge." (NCTM, 2017)
Progress Monitoring	
Supports for All Learners	
Depth and Coherence of Key Concepts	
Balance of Conceptual and Procedural Understanding	
Productive Struggle	

Hiebert, J., & Grouws, D.A. (2007). The effects of classroom mathematics teaching on students' learning, Second Handbook of Research in Mathematics Teaching and Learning.

NCTM. (2017). Taking action: Implementing effective mathematics teaching practices in grades 9-12.



Mathematics — Productive Struggle (3/3)

Section	Guidance
Intentional Instructional Design	Materials should support students in seeing themselves as mathematical thinkers who can solve problems and make sense of mathematics. Materials should also support educators in facilitating the sharing of students' approaches to problem solving.
Progress Monitoring	
Supports for All Learners	
Depth and Coherence of Key Concepts	
Balance of Conceptual and Procedural Understanding	
Productive Struggle	



Mathematics — Learning Quality

Section Intentional Instructional Design **Progress Monitoring** Supports for All Learners **Depth and Coherence of Key** Concepts **Balance of Conceptual and Procedural Understanding Learning Quality Productive Struggle**







What Are Evidence Guides?

Companion tools designed to support understanding and application of the rubric.

 Help users unpack indicator-level guidance by offering overviews, scoring point allocations, examples, and non-examples.

 Bridge the gap between high-level expectations in the rubric and what evidence looks like in instructional materials.

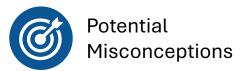




Why Use Evidence Guides

- Clarify Expectations: Break down complex rubric language.
- **Support Consistency:** Establish a shared understanding of key "look-fors" within instructional materials.
- Guide Evidence Collection: Offer sample HQIM evidence to each guidance to support the review of instructional materials.
- Provide Clear Point Allocations: Ensure fair and consistent point allocations across all instructional materials.

Evidence Guide Component — Overview







1.1 Course-Level Design

Guidance	Guidance Description
1.1a	Materials include an alignment guide outlining the TEKS, ELPS, and concepts covered, with a rationale for learning paths across grade levels (vertical alignment) and within the same grade level
1.14	(horizontal alignment) as designed in the materials.
1.1b	Materials include an implementation guide with usage recommendations and strategies for effective educator use in various contexts, such as just-in-time supports, advanced learning, or as a
1.10	course.
1.1c	Materials include a TEKS correlation guide with recommended skill entry points based on diagnostic assessment results.
1.1d	Materials include protocols with corresponding guidance for unit and lesson internalization.
1.1e	Materials include resources and guidance for instructional leaders to support educators with implementing the materials as designed.

Potential Misconceptions

A potential misconception about supplemental mathematics products is that they follow the same unit structure as traditional tier-one math materials. However, these products may be organized differently; they are often grouped around themes or clusters of related concepts rather than following a sequential unit format. Unlike tier-one products, supplemental materials are typically designed to reinforce specific skills, address learning gaps, or extend understanding, and may offer more flexibility in pacing and order. As a result, their structure may appear less linear, focusing instead on learning paths that provide targeted practice, enrichment, or intervention aligned to individual student needs, rather than a full-year scope and sequence like a tier-one product.

Key Terms

advanced learning, alignment guide, correlation guide, diagnostic assessment, horizontal alignment, implementation guide, instructional leaders, just-in-time supports, learning path, lesson internalization, protocol, rationale, skill entry points, unit internalization, vertical alignment

Visit the Glossary of terms for more information.

Connections

Standards Connection Course-level design supports are relevant across all grade-level TEKS for this indicator.



Evidence Guide Component — Guidance Level



2.2a	Instructional assessments include scoring information and guidance for interpreting student performance, including rationale for each correct and incorrect response.	
	Instructional assessments include:]
Score	scoring information and guidance for interpreting student performance. (1 pt)	
(3 pts)	a rationale for each correct response. (1 pt)	
	a rationale for each incorrect response. (1 pt)	_
What are the in	What are the implications of this indicator guidance on teaching and/or learning?	

- Scoring information provides a detailed breakdown of individual student performance for the teacher.
- · Assessments provide a longitudinal view of student progress, revealing mastery and proficiency of the content over time.
- Clear assessment guidance enables teachers to help students set realistic learning goals.
- Analysis of assessments can reveal patterns in student misconceptions, and this data can help drive instruction.
- Assessments with detailed scoring information contribute to targeted support for student needs.

Example(s) from High-Quality Instructional Materials (HQIM)

K-12

- · Performance tasks provide scoring rubrics with clear guidelines for interpreting student performance and responses.
- Assessment answer keys for adaptive or static materials include a brief explanation of why each answer is correct or incorrect. For each answer correct answer, the materials include a rationale for why the answer is correct and explain the steps necessary to arrive at the answer. For each incorrect answer, the materials provide possible misconceptions for incorrect responses and explain the steps to correctly solve the problem.
- Adaptive materials include digital quizzes that provide immediate scoring and personalized feedback. The teacher dashboard shows student performance and highlights when a student does not obtain a passing score.
- Adaptive materials include guidance for educators to intervene with identified students. The educator dashboard indicates a student has taken and failed a lesson quiz three times. The materials include information for the educator to work one-on-one with the student using manipulatives to explain the concept.
- Adaptive materials include scoring guides or rubrics that outline how student responses are scored. They include levels of performance with descriptors or criteria for each level.
- . The materials guide teachers on how to interpret student performance on assessments and reflect on levels of understanding and/or proficiency.
- The materials provide guidance on interpreting scoring information to determine students' strengths, weaknesses and/or gaps, and common misconceptions.
- The materials provide scoring rubrics with proficiency levels and examples of student responses to guide teachers in interpreting performance.
- · The materials provide guidance on running reports that help teachers interpret student data in multiple ways, such as:
 - o item analysis reports to examine performance on specific skills.
 - o TEKS mastery reports to track progress on standards.
 - o question analysis reports to identify trends in student responses.
 - o class achievement reports to compare individual and group performance.

Non-Example(s)

K-12

- · The materials do not include scoring information.
- The materials provide educators with an answer key for each assessment but do not include guidance for interpreting student responses.
- The materials provide detailed rationales for incorrect responses but do not provide rationales for correct responses.
- The materials provide raw scores but do not offer detailed reports, such as item analysis, performance trends, or achievement comparisons, to help teachers make informed instructional decisions.
- Adaptive materials provide extensive data on student performance, such as time spent on each question and number of attempts but lack guidance for interpreting this data in relation to student understanding or instructional decision-making.
- . Digital quizzes show student scores, or which questions were answered incorrectly, but they do not identify patterns or trends across students.

Total points and point allocations

Guidance implications in the classroom

Sample of highquality evidence

Sample of poorquality evidence

5



Session Takeaways

- **High-quality instructional materials** in mathematics are designed to cover the math student expectations.
- The quality rubric is the foundation of the quality review among the other tenants of the review.
- The **evidence guide** supports rubric application by clarifying indicator-level guidance and illustrating what quality evidence looks like in instructional materials through overviews, scoring details, examples, and non-examples.