McGraw Hill LLC

English Mathematics, Precalculus

Miller Precalculus

MATERIAL TYPE	ISBN	FORMAT	ADAPTIVE/STATIC
Full-Subject, Tier-1	**9781266101243**	**Both Print and Digital**	**Static**

Rating Overview

TEKS SCORE	ELPS SCORE	ERROR CORRECTIONS (IMRA Reviewers)	SUITABILITY NONCOMPLIANCE	SUITABILITY EXCELLENCE	PUBLIC FEEDBACK (COUNT)
100%	100%	3	Flags Not in Report	Flags in Report	0

Quality Rubric Section

RUBRIC SECTION	RAW SCORE	PERCENTAGE
1. Intentional Instructional Design	28 out of 28	100%
2. Progress Monitoring	26 out of 26	100%
3. Supports for All Learners	27 out of 27	100%
4. Depth and Coherence of Key Concepts	19 out of 19	100%
5. Balance of Conceptual and Procedural Understanding	41 out of 41	100%
6. Productive Struggle	22 out of 22	100%

Breakdown by Suitability Noncompliance and Excellence Categories

SUITABILITY NONCOMPLIANCE FLAGS BY CATEGORY	IMRA REVIEWERS	PUBLIC	Flags NOT Addressed by November Vote
1. Prohibition on Common Core	0	0	0
2. Alignment with Public Education's Constitutional Goal	0	0	0
3. Parental Rights and Responsibilities	0	0	0
4. Prohibition on Forced Political Activity	0	0	0
5. Protecting Children's Innocence	0	0	0
6. Promoting Sexual Risk Avoidance	0	0	0
7. Compliance with the Children's Internet Protection Act (CIPA)	0	0	0

SUITABILITY EXCELLENCE FLAGS BY CATEGORY	IMRA REVIEWERS
Category 2: Alignment with Public Education's Constitutional Goal	25
Category 6: Promoting Sexual Risk Avoidance	0

IMRA Quality Report

1. Intentional Instructional Design

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

1.1 Course-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.1a	All criteria for guidance met.	4/4
1.1b	All criteria for guidance met.	2/2
1.1c	All criteria for guidance met.	2/2
1.1d	All criteria for guidance met.	2/2
1.1e	All criteria for guidance met.	2/2
—	**TOTAL**	12/12

1.1a – Materials include a scope and sequence outlining the TEKS, ELPS, and concepts taught in the course.

The "Scope and Sequence" highlights key concepts taught in the course. Materials do not explicitly connect these concepts to the Texas Essential Knowledge and Skills (TEKS) or the English Language Proficiency Standards (ELPS). For instance, the "Scope and Sequence" states that "the course begins with a chapter reviewing prerequisite concepts before diving into functions and relations."

Each chapter in the online dashboard includes a Teacher Manual in "Teacher Resources." For example, in Chapter 5: "Analytic Trigonometry," the Pacing Guide lists all lessons and the recommended number of instructional days. The Pacing Guide lists the TEKS and Mathematical Process Standards covered in the chapter, which are identified. For example, Chapter 5 includes TEKS 5(M) and 5(N), in addition to Mathematical Process Standards 1(A) through 1(G).

1.1b – Materials include suggested pacing (pacing guide/calendar) to support effective implementation for various instructional calendars (e.g., varying numbers of instructional days – 165, 180, 210).

The "Texas Precalculus Pacing Guide" presents flexible options for 180, 165, and 210 instructional days, with each day comprising a 45-minute class period. A chapter-level Pacing Guide is included for additional flexibility. For a 180-day calendar, for example, the guide suggests that Chapter 1 be completed in 21–22 days, whereas the recommendation for a 210-day calendar is 22–24 days.

1.1c – Materials include an explanation for the rationale of unit order as well as how concepts to be learned connect throughout the course.

The preface of the eBook describes the scope and sequence and explains the chapter order. It notes that, while not typically included in Texas precalculus courses, Chapter 8: "Systems of Equations and Inequalities" and Chapter 9: "Matrices of Determinants and Applications" offer a review of concepts taught in algebra that better prepare students for college mathematics courses."

The Teacher Manual includes "Then-Now-Next," which shows the TEKS students have already learned, those they are currently learning, and how these skills will apply to future lessons. For example, Chapter 3, Lesson 3-1 specifies "'Then,' TEKS 2(C): Find the composite of two functions. 'Now,' TEKS 1(C), 1(B), and 2(E): Use the graphs of functions to determine if they have inverse functions. 'Next,' TEKS 2(F) and 2(I): Analyze graphs of exponential and logarithmic functions."

1.1d – Materials include protocols with corresponding guidance for unit and lesson internalization.

The "Lesson Internalization Protocol" guides teachers in preparing for instruction, with steps including "Identify the purpose and key objectives of the lesson," "Understand the flow of the lesson," "Articulate the mathematics of the lesson," "Prepare for a rigorous mathematical experience," "Get organized," and "Rehearse."

Each step of the six-step protocol includes guidance for internalization. For example, "Step 2: Understand the Flow of the Lesson" encourages teachers to begin with the "Launch" phase. Materials suggest using "Talk About It" and "Analyze the Problem" questions from the "Launch Activity" at the beginning of each chapter to engage students in a whole-class discussion.

The "Texas Precalculus Chapter Internalization Guide" provides protocols with corresponding guidance for unit and lesson internalization. The guide outlines a four-step protocol to help teachers prepare for instruction: identify the chapter's purpose, identify all chapter assessments, gather chapter resources, and plan for the "Launch Activity." The first step advises: "Locate the chapter's placement in the course, review scope and sequence and pacing, summarize objectives and connections, and understand big ideas and essential questions."

1.1e – Materials include resources and guidance for instructional leaders to support teachers with implementing the materials as designed.

The Teacher Resources provide resources for instructional leaders to support teachers with implementation of the materials, including the "Internalization Protocol," "Lesson Cycle" document, and "Assessment Guidelines."

The "Texas Math 6-12 Lesson Internalization Guide for Instructional Leaders" presents a five-step process to facilitate lesson internalization and improve teaching effectiveness. For example, the second step helps teachers understand a lesson's structure by annotating key components of each phase and identifying necessary resources. The guide also advises leaders to "explore *ALEKS* with educators to customize instruction based on student needs and provide feedback on its integration into lesson planning." This guidance aims to increase lesson planning effectiveness and ensure that instruction is tailored to meet students' diverse needs.

1.2 Unit-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.2a	All criteria for guidance met.	2/2
1.2b	All criteria for guidance met.	2/2
—	**TOTAL**	4/4

1.2a – Materials include comprehensive unit overviews that provide the background content knowledge and academic vocabulary necessary to effectively teach the concepts in the unit.

Each chapter's "Unit Overview" in the Teacher Manual summarizes the lessons, suggested durations, and the TEKS and process standards addressed. The Teacher Manual provides academic vocabulary support for each chapter. For example, in Lesson 3-2, the "Key Vocabulary" includes *algebraic function, transformation, end behavior,* and *horizontal asymptote*. However, Chapter 3 in the Teacher Manual does not include the background content knowledge to support instruction on the unit's concepts.

Academic vocabulary is provided within each lesson. For instance, Lesson 3-2 lists terms such as *exponential function, exponential growth,* and *exponential decay*. There is, however, no guidance on the background content knowledge needed to teach the lesson effectively, nor discussion of how these concepts connect to prior learning.

The Teacher Manual provides background knowledge for each chapter. For example, "Then-Now-Next" outlines the concepts learned at each stage, giving teachers essential background knowledge. In Lesson 3-1's "Then" section, students needed to find the composite of two functions, while the "Now" section states students use the graphs of functions to determine if they have inverse functions.

1.2b – Materials contain supports for families in both Spanish and English for each unit with suggestions on supporting the progress of their student.

The materials offer family support in both English and Spanish through the "Letter to Home" document in each chapter. For example, the Chapter 1 "Letter to Home" greets adults with an overview of what students will learn throughout the chapter and the TEKS that will be covered. It also includes "How Can You Partner With Your Student?", a section that provides guiding questions and strategies to help students who feel stuck or uncertain about what to do.

The Teacher Dashboard features a Student/Family Digital Support Padlet to help families navigate course materials, eBooks, Google Classroom, and grades in English.

1.3 Lesson-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.3a	All criteria for guidance met.	8/8
1.3b	All criteria for guidance met.	3/3
1.3c	All criteria for guidance met.	1/1
—	**TOTAL**	12/12

1.3a – Materials include comprehensive, structured, detailed lesson plans that include daily objectives, questions, tasks, materials, and instructional assessments required to meet the content and language standards of the lesson (aligned with the TEKS and the ELPS).

The Teacher Manual in each chapter provides overviews of individual lessons, including objectives, vocabulary, TEKS, ELPS, lesson resources, suggested pacing, and "Teaching Tips." For example, in Lesson 1.1, the objectives state that "students will be able to plot points on a rectangular coordinate system." "Key Vocabulary" terms include *origin, rectangular coordinate system*, and *Cartesian coordinate system*. Among the listed TEKS are 2(A), 2(B), 2(C), and 2(D). The relevant ELPS is listed as 1.A.i, and the suggested pacing is two 45-minute class periods. The resource list includes student handouts such as a *Corequisite Workbook* "Launch Activity," the "Lesson 1 Quiz" and "Lesson 1 Review," and a lecture note presentation.

Each chapter includes lesson resources required to meet the lesson's content and language standards. For example, in Lesson 3-6, the resources include the "Corerequisite Review," "Lesson Note Presentation," and the "Wolfram Alpha Activity: Exploring the Logistic Curve."

The materials include "Assessment Guidelines" outlining diagnostic, formative, and summative instructional assessments designed to support content mastery throughout the course.

1.3b – Materials include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson, and the suggested timing for each lesson component.

The "Lesson Overview" at the beginning of each lesson includes a comprehensive list of teacher and student resources for the lesson, as well as details of how and when these materials support student learning.

Materials include guidance and recommendations regarding the timing of various lesson components, such as durations for launching, teaching, practicing, and assessing. The "Lesson Cycle" document breaks down each component for teachers, providing clear expectations for each stage, but it is not specific to each lesson.

The materials include a "Scope and Sequence" document that outlines pacing for each lesson in a chapter. For example, in Chapter 3, Lesson 3-1 is scheduled for 4 days, Lesson 3-2 for 5 days, and so on, with the total pacing for the chapter estimated at 26–27 days.

The Teacher Manual provides a comprehensive pacing guideline for lesson assessments. For example, in Lesson 3-6, the Teacher Manual suggests that the "Lesson 3 Quiz" be completed in 10–15 minutes, while the "Lesson 3 Review" is expected to take 20–30 minutes.

1.3c – Materials include guidance on the effective use of lesson materials for extended practice (e.g., homework, extension, enrichment).

The materials offer guidance on the purpose and administration of the various components included in the resource. Instructions note what teachers should look for when assessing the completed work. For instance, under the "Practice" section, the administration guidelines advise teachers to "Review student responses to identify any areas of confusion or misunderstanding."

2. Progress Monitoring

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

2.1 Instructional Assessments

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.1a	All criteria for guidance met.	9/9
2.1b	All criteria for guidance met.	2/2
2.1c	All criteria for guidance met.	2/2
2.1d	All criteria for guidance met.	6/6
2.1e	All criteria for guidance met.	2/2
—	**TOTAL**	21/21

2.1a – Materials include a variety of instructional assessments at the unit and lesson level (including diagnostic, formative, and summative) that vary in types of tasks and questions.

The materials include summative unit assessments that measure mastery of skills taught within the unit. Summative assessments include lesson quizzes and chapter tests. The chapter tests include various question types, including multiple-choice questions, two-part questions, essay questions, and word problems. For example, the five-question "Lesson 4-1 Quiz" consists of multiple-choice and three-part questions.

Materials include formative assessments that include a variety of tasks. For example, Chapter 4 contains lesson quizzes, versioned quizzes, and a check for understanding.

2.1b – Materials include the definition and intended purpose for the types of instructional assessments included.

The "Texas Math Precalculus Assessment Guidelines" cover the various types of instructional assessments included in the resource. For instance, the guidelines describe formative assessments as ongoing evaluations that occur throughout the instructional process. These assessments enable teachers to monitor and adjust their instruction while providing students with valuable feedback.

The materials contain "Assessment Guidelines" that explain the intended purposes of various instructional assessments, providing an assessment activity, purpose, and guidance on administration. For instance, the guidelines for chapter tests cover all relevant TEKS from the chapter and state that the tests should be administered at the end of the chapter, adding that they can be used as self-paced reviews or assignments.

2.1c – Materials include teacher guidance to ensure consistent and accurate administration of instructional assessments.

The materials include accurate administration that aligns with the intended purpose of the assessment, ensuring that it measures what it was designed to measure. For example, at the start of each chapter, there are *Corequisite Workbook* exercises and "Knowledge Checks," ensuring students are understanding the material as it is taught. Tests and reviews at the end of each chapter measure student mastery of the content covered in the chapter.

The assessments provide insights into students' knowledge and skills when administered correctly. For example, results from the chapter tests allow teachers to identify which concepts from the chapter need reinforcement or reteaching.

The materials define the consistency of administration, such as suggested time limits within the lesson and unit, and include clear guidance on how to administer assessments.

2.1d – Diagnostic, formative, and summative assessments are aligned to the TEKS and objectives of the course, unit, or lesson.

The materials include diagnostic, formative, and summative assessments that are aligned to the TEKS. Every chapter of the material includes a diagnostic assessment (*Corequisite Workbook* practice), formative assessments, and summative assessments.

The materials identify the alignment of summative assessments with the corresponding TEKS number directly next to each assessment item. For example, the summative assessment questions in Chapter 5 are aligned with TEKS P.5M and P.5N, covered in the chapter.

The course materials feature a comprehensive diagnostic assessment that takes place at the beginning of the course, using the *ALEKS* resource. The "Initial Knowledge Check" is specifically designed to evaluate students' current understanding and skills of the TEKS.

The materials contain summative and various formative assessments that are aligned with the TEKS relevant to the chapter or lesson. For instance, Chapter 6, Lesson 6-1 includes a five-question quiz that is specifically aligned with TEKS P.4E and P.4F.

2.1e – Instructional assessments include TEKS-aligned items at varying levels of complexity.

Instructional assessments include TEKS-aligned items designed to evaluate various levels of complexity. These assessments cover procedural tasks, the application of multiple skills to solve problems and tasks, and open-ended questions. For instance, Chapter 3, Lesson 3-1 features multiple-choice questions, free-

response tasks, graphing activities, and application problems that require the use of multiple skills to find solutions.

Formative and summative assessments include multiple-choice, text-entry, and open-response items that are aligned to the TEKS. For example, Chapter 7, Quiz 7-1 consists of five multiple-choice and open-ended questions covering TEKS P.3D.

2.2 Data Analysis and Progress Monitoring

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.2a	All criteria for guidance met.	2/2
2.2b	All criteria for guidance met.	1/1
2.2c	All criteria for guidance met.	2/2
—	**TOTAL**	5/5

2.2a – Instructional assessments and scoring information provide guidance for interpreting student performance.

The materials provide guidance on interpreting scoring information to determine students' strengths, weaknesses, and/or gaps, as well as common misconceptions. In the "Reports" section of the Teacher Dashboard, teachers can analyze trends in student performance related to assigned activities and standards. This section uses a color-coded system (for example, red = 0-59%) to indicate performance levels, helping teachers recognize trends in student understanding.

The materials provide a longitudinal view of student progress, revealing mastery and proficiency of the content over time. "The Initial Knowledge Check" is a tool within *ALEKS* that provides research-based, standards-aligned, rigorous content and utilizes diagnostic and progress monitoring assessments to inform instruction.

2.2b – Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments.

The "Initial Knowledge Check" in *ALEKS* provides content, along with diagnostic and progress-monitoring assessments, to guide instruction. *ALEKS* helps teachers identify the individual support required for each student and offers resources to reinforce and build their knowledge.

The materials include instructional guidance for tasks and activities to target various skills, as determined by assessment data. For example, in the "Reports" section, teachers group students based on assessment results and provide targeted activities to address specific skills.

2.2c – Materials include tools for teachers to track student progress and growth, and tools for students to track their own progress and growth.

The materials include tools that enable teachers to track and monitor their students' progress, such as that found in the "Reports" section. The teacher can easily monitor students' performance on each assigned activity. A legend is provided to indicate student performance, with colors representing the following ranges: red (0-59%), orange (60-69%), purple (70-79%), green (80-89%), and blue (90-100%).

When switching to the "Standards" view, the teacher can view "Domain Performance Over Time," "Domain Details," "Standards to Focus On," and "Standard Details."

The materials also provide an opportunity for students to track their growth and progress via *ALEKS* on the Teacher Dashboard, where they can see areas in which they are "Ready to Learn," "Need More Practice," or have "Attempted," "Not learned," and "Most Recently Learned."

3. Supports for All Learners

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

3.1 Differentiation and Scaffolds

Guidance marked with a (T) refers to teacher-facing components. Guidance with an (S) refers to student-facing components.

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.1a	All criteria for guidance met.	3/3
3.1b	All criteria for guidance met.	2/2
3.1c	All criteria for guidance met.	2/2
—	**TOTAL**	7/7

3.1a – Materials include teacher guidance for differentiated instruction, activities, and paired (scaffolded) lessons for students who have not yet reached proficiency on grade-level content and skills.

The materials include instructions for students who have not yet achieved proficiency in grade-level content and skills. For example, in Lesson 2-1, students can practice Question 54, which is similar to Example 5 shown in class. To support students, a "Teacher Note" provides guidance to help students understand that the variable *y* represents the length of the parking lot rather than the *y*-coordinate of function *A*.

Students can also practice vocabulary and key concepts through the "Concept Connections" in the homework, specifically in Lesson 3-1, Problems 1–6. Prerequisite review is also available for students who have not yet mastered grade-level content.

The materials include "Differentiated Instruction Using the Texas Precalculus," which offers comprehensive teacher guidance, engaging activities, and paired lessons designed for students who have not yet achieved proficiency. For instance, in Lesson 3-1, scaffolded tasks cater to both approaching and beyond-level learners. In the "Approaching Level Activity," students are invited to use colored markers or strings to graph and identify a cubic function, then graph its inverse.

3.1b – Materials include pre-teaching or embedded supports for unfamiliar vocabulary and references in text (e.g., figurative language, idioms, academic language). (T/S)

The materials include embedded supports for unfamiliar vocabulary. The "English Language Proficiency Support Guide" offers targeted language support for each chapter in the book. For example, in Chapter 2, Lesson 1, "Quadratic Functions and Applications," the teacher is given explicit instruction for figurative language.

The materials include in-text references for unfamiliar and essential vocabulary. Important vocabulary words are in bold and underlined. When students click on a word, a pop-up definition appears. For example, in Lesson 2-1, the term *axis of symmetry* is defined as a line that divides a graph into two halves, each of which is a mirror image of the other. An image of the graph with a call-out box highlights the term, identifying it as the *axis of symmetry*.

3.1c – Materials include teacher guidance for differentiated instruction, enrichment, and extension activities for students who have demonstrated proficiency in grade-level content and skill.

The materials provide teacher guidance for enrichment and extension activities to support students who have demonstrated proficiency in grade-level content. For example, in Lesson 2-1, Problems 61–78 are all "Mixed Problem Sets," Problems 71–84 are "Write About It" prompts, and Problems 85–97 are "Expanding Your Skills" and "Problem Recognition Exercises."

The materials include worksheets that mirror the problem recognition exercises in the Student Edition and are available for students to work on individually or in groups, helping them determine appropriate methods of solution for related problem types as extensions.

The materials include "Differentiated Instruction Using Texas Precalculus," which features "Beyond Level" instruction designed for students who have shown proficiency in grade-level content. For instance, in Lesson 3-2, students engage in an "Extension Activity" in which they research real-world examples of exponential growth or decay; students make predictions based on their findings and present results to the class, fostering analytical thinking as well as collaborative skills.

3.2 Instructional Methods

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.2a	All criteria for guidance met.	4/4
3.2b	All criteria for guidance met.	2/2
3.2c	All criteria for guidance met.	3/3
—	**TOTAL**	9/9

3.2a – Materials include explicit (direct) prompts and guidance to support the teacher in modeling and explaining the concept(s) to be learned.

The materials include detailed prompts and guidance to help teachers explain the concepts to be learned. The Teacher Dashboard supports modeling and explaining concepts through downloadable PowerPoint presentations, "Launch Activities" in the "English Language Proficiency Support Guide," and a Teacher Manual. For example, Chapter 4's "Launch Activity, Revolutions of a Wheel" provides step-by-step questions that can guide a teacher-facilitated discussion, helping to model a concept being learned, including "What do you notice?" "What questions can you ask?" and "What assumptions are you making?"

The "Insights" section provides guidance to support teachers in explaining the concept. For example, Lesson 4-2 states that students should evaluate trigonometric functions using the unit circle. This insight helps students understand how the values of angles correspond to specific points on the unit circle based on the angle's arc length and position after a fraction of a full revolution.

3.2b – Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches.

The materials include teacher guidance and recommendations for effective lesson delivery and facilitation, using various instructional approaches. In Lesson 4-2's "Learn," direct instruction is modeled, and students are then given an opportunity for guided practice in the following "Apply the Skills" section. Individual practice is provided at the end of each lesson, and each chapter includes a collaborative group activity.

The materials include "Administration Guidance" and "How to Use the Results," providing teachers with guidance and recommendations for lesson delivery and facilitation. Examples of formative assessments include "Practice Exercises," "Chapter Tests," "Online Lesson Quizzes," "Group Activities," and *ALEKS*. Teachers use these assessments to guide daily instructional decisions, reteach concepts as needed, and ensure that every student is progressing toward mastering the TEKS. Additionally, "Check Your Work" can be found in every lesson to alert teachers of potential misconceptions.

3.2c – Materials support multiple types of practice (e.g., guided, independent, collaborative) and include guidance for teachers and recommended structures (e.g., whole group, small group, individual) to support effective implementation.

The materials include multiple types of practice exercises. Every lesson in the eBook includes guided practice followed by independent practice. For example, in Lesson 4-2's "Learn Activity," students receive direct instruction from the teacher on how to evaluate trigonometric functions using the unit circle. Following the direct instruction is "Apply Your Skills," a guided practice in which students evaluate the trigonometric functions of the given point P. This is followed by a collaborative practice via a "Group Activity" in which students work together to determine the height of a tree (and an eagle's nest) given the angles.

The materials include teacher guidance to support implementation. Each chapter of the Teacher Manual includes a "Launch Activity" that provides discussion points for the teacher to engage students, such as "What do you notice?" and "What questions can you ask?"

Whole-group instruction takes place during direct instruction within the materials. For example, in Lesson 6-2, students learn the Law of Sines (SSA) through direct instruction and guided practice as a group. The Teacher Manual provides support, including helpful tips for teachers to use during lessons.

3.3 Support for Emergent Bilingual Students

An emergent bilingual student is a student who is in the process of acquiring English and has another language as the primary language. The term emergent bilingual student replaced the term English learner in the Texas Education Code 29, Subchapter B after the September 1, 2021 update. Some instructional materials still use English language learner or English learner and these terms have been retained in direct quotations and titles.

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.3a	All criteria for guidance met.	2/2
3.3b	All criteria for guidance met.	1/1
3.3c	All criteria for guidance met.	8/8
3.3d	This guidance is not applicable to the program.	N/A
—	**TOTAL**	11/11

3.3a – Materials include teacher guidance on providing linguistic accommodations for various levels of language proficiency [as defined by the English Language Proficiency Standards (ELPS)], which are designed to engage students in using increasingly more academic language.

The materials include teacher guidance on how to provide linguistic accommodations tailored to various levels of language proficiency. Each lesson identifies the English Language Proficiency Standards (ELPS), and the "English Language Proficiency Support Guide" offers tiered support for students at varying levels of proficiency. For example, Lesson 4-1, "Angles and Their Measure," provides support across three tiers: pre-production/beginning, intermediate, and high intermediate/advanced students. Visuals, diagrams, text feature walks, and sentence frames are recommended to help pre-production/beginning students understand concepts (e.g., "The diagram shows ___, which helps me understand ___"). Intermediate students can skim key text features, complete pre-reading organizers, and predict lesson content. High intermediate/advanced students independently scan texts for boldface terms, subheadings, and diagrams. Students respond to questions requiring higher order thinking and write a preview summary.

The "English Language Proficiency Support Guide" provides details on accommodations for language proficiency, in Chapter 1, Lesson 1-1. The "English Learners Support Activity" explains that the "student listens to a variety of speakers, including teachers, peers, and multimedia, to gain an increasing level of comprehension in all content." The guidance for "intermediate" English learners suggests: "Have students listen to spoken coordinates and describe the point's position orally (It is in Quadrant II, because *x* is negative and *y* is positive). Draw and label the points on a blank coordinate plane."

3.3b – Materials include implementation guidance to support teachers in effectively using the materials in state-approved bilingual/ESL programs.

The materials provide implementation guidance to support teachers in effectively using the materials in state-approved bilingual/ESL programs. The "English Language Proficiency Support Guide" offers specific supports for each lesson in the book to ensure effective implementation of ESL strategies. For example, in Lesson 4-1, ELPS 3.E.i. is explicitly referenced, and tiered guidance is provided for three levels of English language proficiency: pre-production/beginning, intermediate, and high intermediate/advanced. Each proficiency level includes specific strategies and instructional routines for teachers to use before, during, and after reading (such as text feature walks, sentence frames, and vocabulary support).

The "English Language Proficiency Support Guide" contains "EL Support Activities" that include teacher guidance for the various readiness levels. For example, in Lesson 1-3, the "Intermediate" section suggests providing a guided writing prompt such as "Explain the difference between a function and a relation and give an example of each."

The Chapter 3 "EL Support Activities" include teacher guidance for the effective use of materials; for ELPS 4.f.ii Writing, the recommendations state: "Provide a word bank with essential vocabulary (inverse function, input, output, reflection, *x*-values, *y*-values, switch). Have students write sentences using sentence frames: An inverse function is __ because __."

3.3c – Materials include embedded guidance for teachers to support emergent bilingual students in developing academic vocabulary, increasing comprehension, building background knowledge, and making cross-linguistic connections through oral and written discourse.

The "English Language Proficiency Support Guide" includes guidance for teachers to support emergent bilingual students in increasing comprehension through oral and written discourse. For example, in Lessons 4-7, activities such as "Think-Pair-Share," summarizing findings with the class, and discussing ideas with a partner directly support oral comprehension strategies: "How does an inverse function relate to a regular function? Use think-pair-share: think (Students independently analyze a passage), pair (Discuss key ideas with a partner), and share (Summarize findings with the class)."

Students also develop comprehension through writing tasks such as writing summaries of the reading, restating definitions, and comparing functions. The "English Language Proficiency Support Guide" prompts: "How does the inverse tangent function help in real-world applications? Encourage students to write a summary of the reading using precise mathematical vocabulary and explain one concept to a classmate."

The materials are designed to help teachers support Emergent Bilingual (EB) students by embedding background knowledge through oral and written discourse. For instance, in Lesson 5-1 of the "EL Support

Activities" from the "English Language Proficiency Support Guide," "intermediate" students can engage in small-group discussions that employ different language structures and draw on prior knowledge to make connections. In the same lesson, "beginning" students can write trigonometric identities using sentence stems, along with visual aids and diagrams, to relate the written sentences to the underlying mathematical concepts.

The materials provide guidance for teachers on how to support EB students in making cross-linguistic connections through oral discourse. In Chapter 8, Lesson 8-5 of the "English Language Proficiency Support Guide," teachers are advised to "identify and teach math cognates that are similar in English and the student's home language (e.g., Spanish): inequality - *desigualdad*, variable - *variable*, solution - *solución*, system - *sistema*." Teachers are also advised to break words into syllables and use call-and-response and choral repetition to build accuracy.

The materials provide guidance for teachers on how to support EB students with developing academic vocabulary through oral and written discourse. In Chapter 3 of the materials, students develop academic vocabulary through a guided writing activity in which they analyze the graphical representation of inverse functions and write a brief explanation of why inverse functions are reflections across the line "$y = x$". In Lesson 3-4, academic vocabulary is further promoted through oral discourse. The materials suggest having students work in pairs or small groups to explain logarithmic properties to one another.

The *EB Guidebook* includes scaffolded sentence stems that can be used for oral and written discourse. The materials provide sentence stems for explanation as well as for comparison and construction; for example, a "beginning" student could be given the sentence stem "First, I____. Then I___. Finally I___" to help them make an explanation.

3.3d – If designed for dual language immersion (DLI) programs, materials include resources that outline opportunities to address metalinguistic transfer from English to the partner language.

This guidance is not applicable because the program is not designed for dual language immersion (DLI) programs.

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.

4.1 Depth of Key Concepts

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.1a	All criteria for guidance met.	2/2
4.1b	All criteria for guidance met.	1/1
—	**TOTAL**	3/3

4.1a – Practice opportunities over the course of a lesson and/or unit (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS.

Lessons include practice opportunities for students to apply and demonstrate their depth of understanding of grade-level TEKS. For example, Chapter 2, Lesson 2-2 includes various types of practice questions, such as writing, analysis, free-response, and making technology connections.

Instructional assessments that align with the depth of understanding outlined in the TEKS must provide accurate data regarding students' proficiency at their respective grade levels. These assessments are included in the instructional materials, allowing educators to make informed decisions and tailor support to meet students' needs. For example, Chapter 3, Quiz 3-1 consists of a five-question quiz that requires students to demonstrate their understanding of TEKS P.2E.

4.1b – Questions and tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics TEKS.

Questions and tasks in the materials increase in rigor and complexity, leading to grade-level proficiency in the TEKS. For example, in Chapter 6, Lesson 6-1, the practice begins with "Learn," becomes more rigorous and complex in "Mixed Review," yet more complex with "Write About It," and even more complex in "Extend."

Questions are increasingly complex throughout the lesson. For example, Chapter 4, Lesson 4-2 activities demonstrate greater complexity in application. Students answer open-ended questions such as "Explain what is meant by 1 radian. Explain what is meant by 1 degree," then complete problems in the "Expanding Your Skills" and "Make Technology Connections" sections.

4.2 Coherence of Key Concepts

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.2a	All criteria for guidance met.	1/1
4.2b	All criteria for guidance met.	3/3
4.2c	All criteria for guidance met.	4/4
—	**TOTAL**	8/8

4.2a – Materials demonstrate coherence across units by explicitly connecting patterns, big ideas, and relationships between mathematical concepts.

The materials include opportunities across chapters for students to make connections between concepts and apply their learning to new situations within and beyond the classroom. A "Launch Activity" is provided in each chapter to help prepare students for the "big idea" they will learn. For example, in Chapter 3, students explore investment and determine which firm will yield a higher profit; this exercise helps students connect to the larger idea of analyzing exponential functions, as well as modeling functions.

The chapters flow logically from one concept to another, reinforcing prior learning and introducing new topics with meaningful connections. For example, the "Scope and Sequence" specifies that the layout starts with an exploration of functions and relations, then expands that knowledge to incorporate different functions in Chapters 1-3. Trigonometry is then explored in Chapters 4-7. The last two chapters prepare students for calculus by exploring conics in Chapter 10, and sequences and series in Chapter 11.

4.2b – Materials demonstrate coherence across units by connecting the content and language learned in previous courses/grade levels and what will be learned in future courses/grade levels to the content to be learned in the current course/grade level.

The materials integrate academic vocabulary and terminology learned in previous grade levels and chapters with the content being taught in the current grade level and chapter. For instance, in Lesson 4-1, the objectives include finding degree measures, learning radian measures, determining coterminal angles, and computing the arc length of a sector of a circle. Students have already encountered vocabulary such as *degree, radian, sector*, and *arc length* in their geometry coursework.

Academic language and vocabulary are consistently used throughout the course. For example, in Lesson 1-1, students learn about graphing on a rectangular coordinate system, where the terms *x-coordinate* and *y-coordinate* are defined. Similarly, in Lesson 2-6, students graph rational functions using the same terminology.

The materials link concepts learned in previous grade levels and chapters to the content being taught in the current grade level and chapter. Each lesson includes "Prerequisite Review Exercises" and *Corequisite*

Workbook activities that offer additional practice opportunities. For instance, in Lesson 1-1, the first problem asks students to review the process of simplifying radicals, a skill taught in an earlier grade that is essential for solving problems in this lesson.

4.2c – Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current and prior grade level(s) to new mathematical knowledge and skills.

The materials include concepts from prior and current grade levels that connect to new mathematical knowledge and skills. For instance, in Lesson 1-3, which focuses on functions and relations, students revisit key concepts about domain and range introduced in Algebra I. In Lesson 4-2, students learn how to apply the concept of domain to trigonometric functions. Additionally, students explore domains and domain restrictions related to sequences and series in Lesson 11-1.

The materials show coherence at the lesson level by linking concepts from the current grade to new mathematical knowledge and skills. For example, the "Lesson Preview" for Lesson 1-7 in the Teacher Manual explains the usefulness of the symmetry test when graphing functions. It also highlights the differences that students need to recognize between even and odd symmetry in functions.

The materials connect procedures from previous and current grade levels to new mathematical concepts in Lesson 1-3, when students revisit the Algebra I topic of the vertical line test to determine whether a graph represents a function. Students will encounter this procedure again in Lesson 3-1, when they use the vertical line test to determine whether the inverse of a function is also a function. Finally, in Lesson 7-1, students will expand on the vertical line test while exploring the graphs of polar coordinates.

4.3 Coherence and Variety of Practice

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.3a	All criteria for guidance met.	4/4
4.3b	All criteria for guidance met.	4/4
—	**TOTAL**	8/8

4.3a – Materials provide spaced retrieval opportunities with previously learned skills and concepts across lessons and units.

The materials offer opportunities for spaced retrieval of previously learned skills and concepts throughout various lessons and units. The "TEKS Correlation Guide" outlines where the TEKS are covered across multiple lessons and units. For instance, P.2F is included in Chapters 1-4 of the materials.

The materials incorporate spaced retrieval of previously learned skills throughout the lessons and units. For example, the skill of conversion is consistently featured in various sections of the book. In Lesson 3-3, students learn to convert between logarithmic and exponential forms. In Lesson 4-1, students convert angles between radians and degrees. In Lesson 7-1, the focus shifts to converting between polar and rectangular coordinates.

The materials incorporate spaced retrieval to reinforce previously learned concepts throughout the lessons and units. In the eBook's "Scope and Sequence," Lesson 4-7 focuses on the study of trigonometry. Lesson 4-2 introduces trigonometric functions using the unit circle. This concept is revisited in Chapter 5 to define the relationships among the trigonometric functions, which leads to the establishment of fundamental trigonometric identities. Finally, Lesson 7-1 connects the concept of the unit circle to demonstrate how to convert between polar and rectangular coordinates.

4.3b – Materials provide interleaved practice opportunities with previously learned skills and concepts across lessons and units.

The materials provide interleaved practice opportunities with previously learned concepts throughout lessons and chapters. For example, Chapter 1 applies the idea of functions to quadratic functions in problem recognition exercises and the Chapter 1 "Review."

Each chapter includes "Cumulative Review" exercises that target the learning objectives of the current chapter and those of the preceding chapters. For instance, Chapter 5's "Cumulative Review" features problems related to trigonometric functions alongside questions from earlier chapters, including solving absolute value equations, working with equations involving slope, and determining whether a function is even or odd.

5. Balance of Conceptual and Procedural Understanding

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

5.1 Development of Conceptual Understanding

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.1a	All criteria for guidance met.	3/3
5.1b	All criteria for guidance met.	1/1
5.1c	All criteria for guidance met.	1/1
—	**TOTAL**	5/5

5.1a – Questions and tasks require students to interpret, analyze, and evaluate models and representations for mathematical concepts and situations.

The materials include questions that require students to interpret, analyze, and evaluate models and representations for mathematical concepts and situations. In Chapter 4's "Launch Activity," students are asked to analyze a problem and determine the best model to address the problem.

Other "Launch Activities" provide students with opportunities to interpret, analyze, and evaluate mathematical concepts as well. For example, in Chapter 6: "Applications of Trigonometric Functions," students encounter a real-world scenario involving a right-triangle-shaped plot of land for which one side length and two angles are known. Students are tasked with determining the area of the triangle by evaluating the Pythagorean theorem and the properties of special right triangles. Students are prompted to interpret the scenario, analyze the reasoning behind each technique, and evaluate which approach is more appropriate and why.

5.1b – Questions and tasks require students to create models to represent mathematical situations.

Students are tasked with creating models to represent various mathematical situations. For example, in Lesson 3-6, students create a graph based on a table and then analyze the table and the graph.

The Chapter 6 "Group Activity" requires that students analyze a real-world predator-prey relationship. Students use supplied data to develop sinusoidal models for mouse and owl populations over time. Students are required to build equations in the form of $P(t) = A\cos(Bt - C) + D$.

5.1c – Questions and tasks provide opportunities for students to apply conceptual understanding to new problem situations and contexts.

The materials include questions and tasks that provide opportunities for students to apply conceptual understanding to new problem situations and contexts. For example, in Lesson 3-1: "Inverse Functions,"

students are guided from a conceptual understanding, beginning with definitions, to understanding the concept and applying the skills in a mathematical situation.

"Group Activities" offer students opportunities to apply their knowledge in new and challenging situations. For example, in Chapter 6, students apply their understanding of sinusoidal functions to a real-world problem about predator and prey populations. Students use data to determine amplitude, period, and phase shift, and build models to illustrate how the populations change over time.

5.2 Development of Fluency

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.2a	All criteria for guidance met.	2/2
5.2b	All criteria for guidance met.	3/3
5.2c	All criteria for guidance met.	3/3
5.2d	All criteria for guidance met.	1/1
—	**TOTAL**	9/9

5.2a – Materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade-level tasks.

The "Corequisite Review" before each lesson gives students an opportunity to build automaticity and fluency. For example, students practice applying the Pythagorean theorem to problems involving right triangles in Lesson 6-1, using trigonometric ratios to find each missing side of a right triangle and checking their work using the Pythagorean theorem. Students then practice applying trigonometric ratios depending on the angle (determining when to use sine, cosine, or tangent).

The materials offer various opportunities for students to develop automaticity and fluency through the "Apply the Skills," "Prerequisite Reviews," and "Practice" problems in each lesson. In Chapter 2, Lesson 2-1, students practice identifying the vertex in different contexts during the "Apply the Skills" problems. In the "Prerequisite Reviews," students revisit skills that will help them solve for the vertex. Finally, in the "Practice" section, students apply their knowledge to solve for the vertex.

5.2b – Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and/or throughout a unit.

Lessons provide opportunities for students to practice applying efficient, flexible, and accurate mathematical procedures. The practice problems in the eBook help students build efficiency, flexibility, and accuracy. For example, in Practice 4-6, "Mixed Exercises," students compose functions, graph results, and analyze the asymptotic behavior of trigonometric functions. Exercises 73–76 focus on solving basic trigonometric equations within a given interval, encouraging students to quickly recognize patterns and apply their knowledge of the unit circle efficiently. Exercises 77–78 involve piecewise-defined functions that combine absolute value, constants, and trigonometric expressions, showing that students must flexibly interpret and evaluate different forms depending on the domain. Students are required to determine correct solutions on specific intervals and perform accurate function composition and evaluation.

The materials provide opportunities to practice applying the procedures to all concepts in the chapter through the "Review" sections, exemplified in Chapter 3.

5.2c – Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson and throughout a unit.

The materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson and throughout a unit. A "Chapter Group Activity" in each chapter provides an opportunity for students to evaluate procedures, processes, and solutions. For example, in Chapter 4, students apply trigonometric ratios to determine missing side lengths, compare values across similar triangles, and use calculators to approximate values, allowing them to assess the efficiency and accuracy of their methods.

The eBook includes practice problems to help students develop efficiency, flexibility, and accuracy. For instance, "Practice 6-1" features "Mixed Exercises" in which students compose functions, graph their results, and analyze the asymptotic behavior of trigonometric functions. Additionally, Exercises 19–30 concentrate on solving applications of the concepts and procedures for accuracy.

5.2d – Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches.

The materials include embedded resources for teachers to guide students toward more efficient learning strategies. Chapter 4's "Launch Activity" in the "Teacher Manual" offers tips for teachers to facilitate the "Revolutions of a Wheel" activity with prompts such as "Talk About It" and "Analyze the Problem." At the lesson level, the "Teacher Manual" offers a preview that includes key formulas and summaries, helping teachers understand the content before they deliver it to students.

The materials include embedded supports to guide students toward more effective learning strategies. For instance, as equations become more complex in Chapter 3, teachers are provided with supports to help students transition to logarithmic approaches. This guidance also aids students in understanding the efficiency of logarithms when solving equations with unknown exponents.

5.3 Balance of Conceptual Understanding and Procedural Fluency

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.3a	All criteria for guidance met.	2/2
5.3b	All criteria for guidance met.	3/3
5.3c	All criteria for guidance met.	6/6
—	**TOTAL**	11/11

5.3a – Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed.

The materials explicitly state the conceptual and procedural emphases of the TEKS. The "Texas Math Precalculus TEKS Standards Correlation" document highlights the conceptual focus of TEKS P.4(D), which emphasizes representing angles in radians or degrees based on the concept of rotation in mathematical and real-world problems. Corresponding procedural practice is provided in Chapter 4, "Practice 4-1," Problems 35–56.

The materials explicitly state how the TEKS' conceptual and procedural emphases are addressed. For example, in the eBook Lesson 4-1, the concept of measuring angles is introduced through real-world applications, such as calculating a bicycle's speed. The lesson then offers step-by-step instructions on how to determine radian measures by dividing the arc length by the radius.

Each chapter includes a "Detailed Summary" that provides an explanation of the concept and the procedural steps necessary to solve. For example, Chapter 9 presents the key idea on the left side (Elementary Row Operations) and explains that concept. On the right side, the procedural steps for applying the concept are outlined.

Procedural emphasis is evident in the "Practice" section R3-R7 of Chapter 4, Lesson 4-1, "Trigonometric Functions," and the conceptual understanding in the "Concept Connections," Problems 1–24.

5.3b – Questions and tasks include the use of concrete models and manipulatives, pictorial representations (figures/drawings), and abstract representations, as required by the TEKS.

Questions and tasks that use pictorial and abstract representations can be found in the eBook. For example, Lesson 4-5 on graphs of sine and cosine includes an image of the sine function on the unit circle and a graph. Arrows clearly illustrate angle measures and corresponding sine values. Abstract representations are also present, including the sine function as expressed in the equation $y = \sin(x)$, as well as the use of mathematical notation to represent the function's domain and range.

"Technology Connections" provide concrete models at the end of each lesson, allowing students to use a graphing calculator to visualize and compare trigonometric graphs. For example, in Lesson 2-7, students use the calculator to write inequalities, graph inequalities, and approximate solutions.

The materials demonstrate the use of concrete models to abstract representations by beginning with the "Launch Activity." For example, in Chapter 8's "Launch Activity, Making Cookies," students make a table, graph the equation, and write the abstract equation for the system.

Questions that encourage students to use visual representations, symbolic notations, numeric expressions, and algorithms are included in the materials. For example, in Chapter 1, Lesson 1-7, students graph a function and identify its key features, including intercepts, asymptotes, and intervals of increase or decrease to understand how these characteristics relate to the function's equation and behavior.

5.3c – Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts, as required by the TEKS.

The materials provide opportunities for students to define and explain concrete models to abstract, as well as representational models to abstract. In the eBook's "Technology Connections" section, students use a graphing calculator to compare the parent function $y = \sin x$ to $y = 4\sin(3x)$. In Example 2, the graph of $y = 4\sin(3)$ is shown with labeled key points, and students are tasked with explaining how to find amplitude and period using the equation $y = A\sin(Bx)$, thereby supporting connections between representational models and abstract reasoning.

The materials provide opportunities for students to connect concrete to abstract concepts. For example, in Lesson 1-7, Example 9, students go from modeling a piecewise function to connecting it to an equation. In "Practice 3-6," Problem 47, students are asked to use a concrete table to create a model using a graphing device. Students will then write a function based on the model to predict the number of Ebola cases.

Example 1 in Lesson 8-6, "Linear Programming," presents a concrete situation regarding the determination of the number of buses to transport students. This situation is used in "Learn, Solve Linear Programming Applications," in which students must develop an abstract model and solve the linear programming problem.

The materials include questions that encourage students to use visual representations, symbolic notations, numeric expressions, and algorithms. For example, in Chapter 1, Lesson 1-7, students graph a function and identify its key features, including intercepts, asymptotes, and intervals of increase or decrease to understand how these characteristics relate to the function's equation and behavior.

5.4 Development of Academic Mathematical Language

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.4a	All criteria for guidance met.	3/3
5.4b	All criteria for guidance met.	1/1
5.4c	All criteria for guidance met.	6/6
—	**TOTAL**	10/10

5.4a – Materials provide opportunities for students to develop academic mathematical language using visuals, manipulatives, and other language development strategies.

"Learn" sections in the eBook introduce new vocabulary with diagrams and clearly labeled guides. For example, in Lesson 4-1, Figure 4-3 includes an image of an angle with the terminal side, initial side, and vertex clearly labeled, along with an arrow showing the direction of the angle. Callouts such as "Vertex is at the origin" and "Initial side is positive *x*-axis" provide further clarification. The eBook "Learn" section in Lesson 4 provides an opportunity for students to use a graphing calculator as a manipulative to explore concepts. In Lesson 4-5, students graph and compare functions to examine how changes in amplitude and period affect the graph of a sine function, reinforcing key vocabulary such as amplitude, period, and compression.

Practice problems in each lesson of the eBook include "Concept Connections" that scaffold academic language through fill-in-the-blank sections, giving students opportunities to reinforce key terms. For example, in Lesson 4-1, Exercise 3 prompts, "Two common units used to measure angles are ___ and ___".

The materials include questions that encourage students to use visual representations, manipulatives, and other strategies. For example, in Chapter 1, students graph a function and identify its key features, such as intercepts, asymptotes, and intervals of increase or decrease, to understand how these characteristics relate to the function's equation and behavior.

5.4b – Materials include embedded teacher guidance to scaffold and support students' development and use of academic mathematical vocabulary in context.

"English Language Proficiency Support" provides embedded teacher guidance to scaffold and support students at three proficiency levels: pre-production/beginning, intermediate, and high intermediate/advanced. For example, Lesson 4-1 pre-production/beginning supports offer guidance on creating visual previews using diagrams of angles and labeling important information such as degrees, radians, and the initial side. The guidance for the intermediate level includes the use of pre-reading organizers in which students write down three words they recognize and three words they do not know. At the high intermediate/advanced level, questions for higher order thinking include key terms, for instance: "Why do you think radians and degrees are both used to measure angles?"

"Administration Guidance and How to Use the Results" offers educator guidance to scaffold and support students. Formative assessments include "Practice Exercises," "Chapter Tests," "Online Lesson Quizzes," "Group Activities," and *ALEKS*. Teachers use these assessments to guide daily instructional decisions, reteach concepts as needed, and ensure that every student is progressing toward mastering the TEKS. Additionally, "Check Your Work" can be found in every lesson, helping teachers identify misconceptions and enabling them to reteach the concept easily.

5.4c – Materials include embedded teacher guidance to support the application of appropriate mathematical language to include vocabulary, syntax, and discourse to include guidance to support mathematical conversations that provide opportunities for students to hear, refine, and use math language with peers and develop their math language toolkit over time as well as guide teachers to support student responses using exemplar responses to questions and tasks.

"English Language Proficiency Support" includes embedded teacher guidance to support the use of mathematical vocabulary and syntax. For example, Lesson 4-1, "EL Activities," guides teachers to focus on academic vocabulary by identifying key terms such as *degrees, radians, initial side*, and *terminal side*. Teachers are guided to use boldfaced words, diagrams, and text features. Syntax to support mathematical conversations is given through sentence frames, such as "The diagram shows ____, which helps me understand ____."

A "Launch Activity" at the start of each chapter gives students the opportunity to engage in mathematical conversations. The Chapter 4 "Launch Activity" involves exploring the revolutions of a wheel, and "Talk About It" and "Analyze the Problem" contain open-ended questions that prompt students to use mathematical language such as *revolutions* and *degrees*, for example: "How many degrees will the wheel travel for this section of the course?"

"English Language Proficiency Support" enables students to hear math language with their peers and refine their own math language. For example, Lesson 4-2 includes partner pronunciation activities (listen-and-repeat), minimal pair drills, a peer read-aloud, and structured peer discussions that provide students with opportunities to hear math language from their peers. At the high intermediate/advanced level, students can take part in academic debates and peer presentations in which they must use vocabulary precisely and fluently. The teacher is guided to "Encourage self-monitoring by having students read aloud a paragraph explaining the unit circle and correct any mispronunciations."

Exemplar responses to practice problems are provided in the "Write About It" section of the Teacher Manual. For example, in Lesson 4-1, Exercise 120, students are asked to explain the difference between one degree and one radian. An exemplar response is provided in the manual for guidance: "One radian is the angular measure of a central angle that intercepts an arc equal in length to the radius of the circle."

Chapter 9, Lesson 9-1 provides vocabulary from prior lessons to develop students' math language tool kit. The lesson begins by requiring students to solve matrices using the substitution method, followed by Gaussian elimination, then Cramer's rule. Students are then guided to choose an "appropriate method" or technology to solve the matrices and explain their choices.

5.5 Process Standards Connection

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.5a	All criteria for guidance met.	1/1
5.5b	All criteria for guidance met.	2/2
5.5c	All criteria for guidance met.	2/2
5.5d	All criteria for guidance met.	1/1
—	**TOTAL**	6/6

5.5a – TEKS process standards are integrated appropriately into the materials.

The "TEKS Standards Correlation Guide" illustrates how the TEKS process standards are integrated throughout the book. For instance, process standard P.1(C), which involves students selecting tools to solve problems, is highlighted in Lesson 6-1, Practice 78. In this lesson, students receive a hint to help them set up an equation and use a graphing utility to approximate the solution.

Chapter 4 includes a "Group Activity" that integrates process standards by having students use the trigonometric functions of right angles in a three-dimensional application. For example, it states, "Morgan is a biologist who studies bald eagles. An eagle's nest is situated at the top of a tall pine tree at the Lake Woodruff Wildlife Refuge."

"Lesson Previews" in the Teacher Manual list the TEKS process standards covered in each lesson. For example, Chapter 2 addresses P.1(A), P.1(B), P.1(C), P.1(D), P.1(E), P.1(F), and P.1(G) process standards.

5.5b – Materials include a description of how TEKS process standards are incorporated and connected throughout the course.

The TEKS Standards Correlation Guide provides that the TEKS process standards are incorporated throughout the course, with each standard embedded across multiple lessons and chapters. For example, P.1(C), where students select tools to solve problems, is used in Practices 6-1, 7-1, 8-1, 8-4, and 8-5.

"Lesson Previews" in the Teacher Manual list the TEKS process standards covered in each unit. For example, Chapter 3 covers P.1(A), P.1(B), P.1(C), P.1(D), P.1(E), P.1(F), and P.1(G).

The materials include a description of how the process standards are connected throughout each unit. The introduction to "Contents in Brief and Suggested Pacing for Texas Precalculus" explains the process standards and how they are applied throughout the course.

5.5c – Materials include a description for each unit of how TEKS process standards are incorporated and connected throughout the unit.

The Teacher Manual includes a list of how the TEKS process standards are incorporated in each chapter. For example, Chapter 1 includes P.1(A), P.1(B), P.1(C), P.1(D), P.1(E), P.1(F), and P.1(G).

The "TEKS Standards Correlation" includes a list specifying which TEKS process standards are incorporated in each lesson. For example, TEKS process standard P.1(A) is included in Chapters R, 1, and 2. A list of pages or lessons is also included in each chapter, providing page numbers indicating where the process standards can be found.

Additionally, the "Scope and Sequence" identifies the Mathematical Process Standards for each lesson. For example, Lesson 3-1 includes process standards 1(B) and 1(C), while Lesson 3-2 includes process standards 1(F) and 1(G).

5.5d – Materials include an overview of the TEKS process standards incorporated into each lesson.

The "TEKS Standards Correlation Guide" provides citations and examples indicating that the TEKS process standards are integrated into the student text.

The Teacher Manual includes the "Then-Now-Next" feature, which identifies and explains how the TEKS and process standards are incorporated at the lesson level. For example, in Lesson 3-2, the TEKS listed are 1(F), 1(G), 2(F), 2(G), 2(I), and 2(J), with 1(F) and 1(G) representing the process standards, in alignment with information in the "Scope and Sequence."

6. Productive Struggle

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

6.1 Student Self-Efficacy

GUIDANCE	SCORE SUMMARY	RAW SCORE
6.1a	All criteria for guidance met.	3/3
6.1b	All criteria for guidance met.	6/6
6.1c	All criteria for guidance met.	3/3
—	**TOTAL**	12/12

6.1a – Materials provide opportunities for students to think mathematically, persevere through solving problems, and to make sense of mathematics.

The eBook incorporates application problems within its examples to encourage students to think mathematically and understand mathematical concepts. For instance, in Lesson 8-3, students encounter real-world and open-ended questions. Problem 61 challenges students to determine whether a goalpost meets NFL regulations. Students interpret the scenario, model it using a triangle, and employ trigonometric reasoning to verify if the goalpost complies with the criteria.

Each chapter includes a "Group Activity" that encourages students to engage in problem-solving. For instance, Chapter 8, "Introduction to Right Triangle Trigonometry," guides students through several steps in which they begin by analyzing their existing knowledge of trigonometric relationships, moving on to calculator computations, and finally applying what they have learned to a real-world problem. At each stage, students must persist through the various components of the task, ultimately leading to practical applications.

The Chapter 4 "Launch Activity" encourages students to think mathematically, persevere through problem-solving, and make sense of mathematics. For this activity, students code a robot to determine the number of wheel revolutions needed to cover a specified distance.

6.1b – Materials support students in understanding, explaining, and justifying that there can be multiple ways to represent and solve problems and complete tasks.

The Chapter 4 "Launch Activity" provides students with an exploratory activity to engage in a different way to represent distance. Instead of using length, they measure using revolutions of a wheel, which helps students understand that there is more than one way to show and solve a problem.

Example 107 of Lesson 4-4, "Explain," supports students in demonstrating that there can be multiple ways to represent and solve problems by having them connect geometric (slope) and trigonometric

(tangent) approaches to the same point, encouraging them to compare and explain how both methods describe the same relationship.

Students are given the opportunity to justify that there can be multiple ways to represent and solve problems. For example, Lesson 4-3, "Justify: Write About It," Example 78, asks students to use a geometric figure to explain why $\tan \theta = \cot (90° - \theta)$, encouraging them to analyze and justify the identity through both visual reasoning and algebraic relationships.

The materials provide students with opportunities to justify and explain their solutions. For example, in Chapter 3's "Launch Activity," students are tasked with comparing various investment options to select the best one for a $20,000 investment, and explaining and justifying their choices.

6.1c – Materials are designed to require students to make sense of mathematics through multiple opportunities for students to do, write about, and discuss math with peers and teachers.

Students are given the opportunity to do and write math with the teacher through the eBook and each guided lesson in the "Learn" sections. For example, in Lesson 4-2, Example 4, students work with the teacher to use the reciprocal and quotient identities. A specific note from the teacher illustrates the accurate way to write tangent, demonstrating the importance of including the reference angle with each trig function, for example, tan θ, and not just tan.

In the Chapter 4 "Group Activity," students work with partners through guided questions to confirm trigonometric ratios, learn the appropriate use of the calculator to approximate angles, and then apply this knowledge to a real-world example: finding the height of the eagle's nest in a tree. Question 2 tasks students to compare the ratios from Question 2, then, in Question 6, write with peers about which trigonometric function gives the slope of line l.

Students are given the opportunity to discuss math with the teacher and peers based on the "Launch Activity." For example, the "Talk About It" section of Chapter 4's "Launch Activity, Revolutions of a Wheel" provides guided prompts to encourage peer and teacher discussion. Students are asked "What is 3.5 centimeters in inches?" and "How many degrees are in one revolution?"

In the Chapter 3 "Launch Activity," students are asked to choose the best offer for an investment of $20,000 by comparing the offers; students do math, write about math, and discuss the math in determining the best offer for an investment.

6.2 Facilitating Productive Struggle

GUIDANCE	SCORE SUMMARY	RAW SCORE
6.2a	All criteria for guidance met.	6/6
6.2b	All criteria for guidance met.	4/4
—	**TOTAL**	10/10

6.2a – Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications.

The Teacher Manual "Launch Activities" include guidance in sharing and reflecting on problem-solving approaches. For example, the Chapter 4 "Launch Activity" discusses the revolutions of a wheel. Students explain what they notice and what questions they can ask, indicating that they are analyzing key information together as part of the problem-solving process. Students are then tasked with reflecting on any assumptions they may have made.

The Teacher Manual "Launch Activities" prompt students to share and reflect on their arguments as students work through the problem. For example, in Chapter 5 "Talk About It" and "Analyze the Problem," students are prompted to reason through unit conversions, the logic behind measuring in revolutions versus distance, and how the wheel's dimensions affect the calculations. Students are asked to consider "What questions can you ask?" and, later, "What constraints, if any, need to be considered? How might students affect the solution?" These questions encourage students to articulate their reasoning and consider multiple factors.

In the Chapter 3 "Launch Activity," students are asked to choose the best offer for an investment of $20,000 by comparing the offers. Students do math, write about math, and discuss the math in determining the best offer. The students work with a partner, which affords opportunities for sharing approaches, explanations, justification, and reflection.

6.2b – Materials include prompts and guidance to support teachers in providing explanatory feedback based on student responses and anticipated misconceptions.

The Teacher Manual addresses anticipated misconceptions in specific lessons. For example, "Preventing Errors" of the "Teaching Tips" for Lesson 3-5 includes a note to help students solve logarithms with exponents: "If the argument of the logarithm has an exponent, the exponent can be brought out and multiplied by the logarithm. Students can think of the logarithm as a variable that needs to be isolated to solve the equation." Misconceptions about extraneous solutions are likewise addressed in a guidance prompt: "Remind students that a solution is not extraneous simply because it is negative."

ALEKS offers guidance to give explanatory feedback based on student responses. Prompts and guidance are delivered directly to the student rather than through teacher-directed feedback. *ALEKS* provides

scaffolds to give hints or prompts after an incorrect answer as well as a step-by-step explanation to model the correct problem-solving approach if students continue to struggle.

The materials provide teachers with exploratory feedback and anticipated misconceptions. For example, Lesson 3-1, "Inverse Function," Example 1 provides teachers with exploratory feedback and anticipated misconceptions related to determining whether a function is one-to-one.