Publisher Name	Program Name
Agile Mind, Inc.	*Texas Geometry*

Subject	Course
Mathematics	Geometry

Texas Essential Knowledge and Skills (TEKS) Coverage: **100%**

English Language Proficiency Standards (ELPS) Coverage: **100%**

Quality Review Overall Score: **227 / 227**

Quality Review Summary

Rubric Section	Quality Rating
1. Intentional Instructional Design	**53 / 53**
2. Progress Monitoring	**28 / 28**
3. Supports for All Learners	**32 / 32**
4. Depth and Coherence of Key Concepts	**23 / 23**
5. Balance of Conceptual and Procedural Understanding	**66 / 66**
6. Productive Struggle	**25 / 25**

Strengths

- 1.1 Course-Level Design: Materials include a scope and sequence outlining the TEKS, ELPS, concepts, and knowledge taught in the course, with suggested pacing guides for various instructional calendars, explanations for the rationale of unit order and concept connections, guidance for unit and lesson internalization, and resources to support administrators and instructional coaches in implementing the materials as designed.
- 1.2 Unit-Level Design: Materials include comprehensive unit overviews that provide background content knowledge and academic vocabulary necessary for effective teaching and contain supports for families in both Spanish and English with suggestions for supporting their student's progress.
- 1.3 Lesson-Level Design: Materials include comprehensive, structured lesson plans with daily objectives, questions, tasks, materials, and instructional assessments required to meet the content and language standards. They also provide a lesson overview outlining the suggested timing for each component, a list of necessary teacher and student materials, and guidance on the effective use of lesson

materials for extended practice, such as homework, extension, and enrichment.

- 2.1 Instructional Assessments: Materials include a variety of instructional assessments at the unit and lesson levels, including diagnostic, formative, and summative assessments with varied tasks and questions, along with definitions and purposes, teacher guidance for consistent administration, alignment to TEKS and objectives, and standards-aligned items at different levels of complexity.
- 2.2 Data Analysis and Progress Monitoring: Materials include instructional assessments and scoring information that provide guidance for interpreting and responding to student performance, offer guidance on using tasks and activities to address student performance trends, and include tools for students to track their own progress and growth.
- 3.1 Differentiation and Scaffolds: Materials include teacher guidance for differentiated instruction, activities, and scaffolded lessons for students who have not yet reached proficiency, pre-teaching or embedded supports for unfamiliar vocabulary and references in text, and guidance for differentiated instruction, enrichment, and extension activities for students who have demonstrated proficiency in grade-level content and skills.
- 3.2 Instructional Methods: Materials include prompts and guidance to support teachers in modeling, explaining, and directly and explicitly communicating concepts to be learned. They provide teacher guidance and recommendations for effective lesson delivery using various instructional approaches and support multiple types of practice with guidance on recommended structures, such as whole group, small group, and individual settings, to ensure effective implementation.
- 3.3 Support for Emergent Bilingual Students: Materials provide guidance for teachers in bilingual/ESL programs, support academic vocabulary and comprehension, and include resources for metalinguistic transfer in dual language immersion programs.
- 4.1 Depth of Key Concepts: Materials provide practice opportunities and instructional assessments that require students to demonstrate depth of understanding aligned to the TEKS, with questions and tasks that progressively increase in rigor and complexity, leading to grade-level proficiency in mathematics standards.
- 4.2 Coherence of Key Concepts: Materials demonstrate coherence across courses and grade bands through a logically sequenced scope and sequence, explicitly connecting patterns, big ideas, and relationships between mathematical concepts, linking content and language across grade levels, and connecting students' prior knowledge to new mathematical knowledge and skills.
- 4.3 Spaced and Interleaved Practice: Materials provide spaced retrieval and interleaved practice opportunities with previously learned skills and concepts across lessons and units.

- 5.1 Development of Conceptual Understanding: Materials include questions and tasks that require students to interpret, analyze, and evaluate various models for mathematical concepts, create models to represent mathematical situations, and apply conceptual understanding to new problem situations and contexts.
- 5.2 Development of Fluency: Materials provide tasks designed to build student automaticity and fluency for grade-level tasks, offer opportunities to practice efficient and accurate mathematical procedures, evaluate procedures for efficiency and accuracy, and include embedded supports for teachers to guide students toward more efficient approaches.
- 5.3 Balance of Conceptual Understanding and Procedural Fluency: Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed, include questions and tasks that use concrete models, pictorial representations, and abstract representations, and provide support for students in connecting and explaining these models to abstract concepts.
- 5.4 Development of Academic Mathematical Language: Materials provide opportunities for students to develop an academic mathematical language using visuals, manipulatives, and language strategies, with embedded teacher guidance on scaffolding vocabulary, syntax, and discourse, and supporting mathematical conversations to refine and use math language.
- 5.5 Process Standards Connections: Materials integrate process standards appropriately, providing descriptions of how they are incorporated and connected throughout the course, within each unit, and in each lesson.
- 6.1 Student Self-Efficacy: Materials provide opportunities for students to think mathematically, persevere through problem-solving, and make sense of mathematics while supporting them in understanding multiple ways to solve problems and requiring them to engage with math through doing, writing, and discussion.
- 6.2 Facilitating Productive Struggle: Materials support teachers in guiding students to share and reflect on their problem-solving approaches, offering prompts and guidance for providing explanatory feedback based on student responses and anticipated misconceptions.

Challenges

- No challenges in this material

Summary

Agile Mind *Texas Geometry* is a 9–12 mathematics program. This instructional material provides a comprehensive approach to teaching Algebra I, featuring a well-structured scope and sequence that clearly outlines the concepts and knowledge covered in each unit. Each unit is accompanied by an

Advice for Instruction that includes pacing, detailed unit overviews, essential background information, academic vocabulary, and detailed daily lesson guides to support effective instruction.

Campus and district instructional leaders should consider the following:

- Teachers may benefit from additional guidance in interpreting student performance data and identifying actionable next steps to address individual student needs. Providing professional development or resources in this area can strengthen their ability to implement data-driven instruction effectively. The program includes tools for students to track their progress and growth, which promotes self-directed learning, but offering targeted support for teachers will ensure they can fully utilize these tools to benefit all students.
- The program includes professional support essays for teachers and instructional leaders, offering guidance on how to effectively use the materials to support all students. However, both novice and experienced teachers may benefit from additional support to navigate the materials and ensure that all students, including students receiving Special Education services and Emergent Bilingual students, receive the appropriate support throughout their learning journey.

Intentional Instructional Design

1.1	Course-Level Design	15/15
1.1a	Materials include a scope and sequence outlining the TEKS, ELPS, concepts, and knowledge taught in the course.	**5/5**
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).	**2/2**
1.1c	Materials include an explanation for the rationale of unit order as well as how concepts to be learned connect throughout the course.	**2/2**
1.1d	Materials include guidance, protocols, and/or templates for unit and lesson internalization.	**2/2**
1.1e	Materials include resources and guidance to support administrators and instructional coaches with implementing the materials as designed.	**4/4**

The materials include a scope and sequence outlining the Texas Essential Knowledge and Skills (TEKS), English Language Proficiency Standards (ELPS), concepts, and knowledge taught in the course. 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). Materials include an explanation for the rationale of unit order as well as how concepts to be learned connect through the course. Materials include guidance, protocols, and/or templates for unit and lesson internalization. Materials include resources and guidance to support administrators and instructional coaches in implementing the materials as designed.

Evidence includes, but is not limited to:

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

- The materials include a scope and sequence document in the "Course Planning and Pacing" subsection of "Professional Support." The scope and sequence outline specific TEKS, ELPS, concepts, and knowledge taught within each unit.
- The materials include lesson sequences aligned with the TEKS and ELPS. The Course Planning and Pacing section outlines lessons in the "Geometry Lesson Alignments for Texas" document.
- TEKS, ELPS, and prior knowledge requirements are included in the scope and sequence as a readable chart.
- The Course Planning and Pacing section includes a "Year-at-a-Glance" document outlining the TEKS and concepts taught within each unit's topic.

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

- The Course Planning and Pacing section includes recommended pacing calendars to support effective implementation.
- The Year-at-a-Glance document outlines suggested pacing calendars, which accommodate various calendar lengths, including 151–186 days, 165 days, and 180 days.

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

- The Course Planning and Pacing section includes an explanation of the rationale for unit order in the "Course Rationale" document.
- The Course Rationale document also includes (1) narrative explanations of how concepts learned connect throughout the course, (2) a readable chart referencing recurring topics and unit progression, and (3) connections from prior elementary and middle school work to current geometric concepts.
- The Course Rationale groups and sequences units of study according to overarching concepts (e.g., Units 1–3 are grouped as Geometric Transformations, and Units 4–6 are grouped as Deductive Reasoning with Angles and Lines).

Materials include guidance, protocols, and/or templates for unit and lesson internalization.

- Materials include teacher guidance, protocols, and structure for unit internalization. Each unit begins with a "Prepare for Instruction" component that includes an "Advice for Instruction" document, which provides: (1) instructional files, (2) goals and objectives, (3) prerequisite skills, (4) a materials list, (5) lesson topics at a glance, (6) guidance for use with various student populations, and (7) a section-level planning guide. Additional materials offer guidance for teachers on language supports, English Language Learners, and the concrete-representational-abstract teaching sequence.
- Materials include a "Classroom Routines" section that provides guidance for instructional routines and lesson internalization protocols. The Prepare for Instruction component offers a teacher protocol for reading and internalizing lesson preparation materials, connecting lessons, using embedded technology, and extending lessons with research-based instructional strategies.

Materials include resources and guidance to support administrators and instructional coaches with implementing the materials as designed.

- The materials include the "Leadership Guide to Success" document, which follows the Coaches and Instructional Leaders subsection. This guide supports administrators and instructional coaches in implementing the materials as designed. It consists of (1) available tools for leaders and coaches, (2) checklists for leaders to ensure successful program implementation, (3) an implementation timeline, (4) guidance for measuring implementation progress, and (5) resources for ongoing leadership support.

- The materials include a Professional Support sidebar within the Professional Support Overview that provides information about live lessons, stating, "In addition to the support in our system, we offer ongoing professional learning opportunities to teachers and leaders to assist you in making the best use of our programs." The description for coaches and instructional leaders states, "These sessions explore how education leaders can make the most of their implementation and equip leaders with tools and guidance to support their teachers."

Intentional Instructional Design

1.2	Unit-Level Design	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.	**2/2**
1.2b	Materials contain supports for families in both Spanish and English for each unit with suggestions on supporting the progress of their students.	**2/2**

The materials include comprehensive unit overviews that provide the background content knowledge and academic vocabulary necessary to effectively teach the concepts in the unit. Materials contain support for families both Spanish and English for each unit with suggestions on supporting the progress of their student.

Evidence includes, but is not limited to:

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

- Materials include an overview at the beginning of each topic that explains the background content knowledge required for teachers to implement the program as intended. Each topic begins with a "Prepare for Instruction" component that connects previously learned content knowledge with upcoming lessons. For example, in Topic 3, teachers prepare by identifying previously learned concepts that support the upcoming topic on Transformations and Coordinate Geometry, such as "basic ordered pair rules for transformations like reflections across the x- and y-axes, learned in middle school." Similarly, in Topic 23, before exploring surface area and volume of pyramids and cones, the materials state, "Students should have encountered formulas for computing surface area and volume of three-dimensional figures in middle school mathematics. However, they may not have encountered a formula for the surface area of a cone."
- The instructional materials provide extensive unit overviews that include lists of "Prerequisite Skills" (e.g., naming 3-D objects, naming polygons, and creating nets of simple solids) with related vocabulary. Additionally, they present unit vocabulary in the form of "In this topic, students will..." statements (e.g., "Apply terminology, definitions, and properties of 3-D solids, including the Platonic solids, ...use nets to construct solids [and]...identify plane sections of solids").
- The Prepare for Instruction component provides extensive overviews that include "Language Support" sections followed by Prerequisite Skills sections. These sections provide the academic vocabulary necessary to effectively teach the concepts for each topic. For example, in Topic 3, the materials distinguish core vocabulary (e.g., *ordered pair rule*, *vector*, and *dilation*) from reviewable vocabulary (e.g., *equidistant*, *transversal*, and *corresponding angles*) as students learn about transformations and coordinate geometry. The Prerequisite Skills section also includes unit vocabulary through statements such as "In this topic, students will identify corresponding sides and angles of two triangles," "use CPCTC to prove that parts of

triangles are congruent," and "write and prove conjectures and the converses of the conjectures related to isosceles triangles."

The materials contain support for families in both Spanish and English for each unit, with suggestions on how to support their student's progress.

- The materials provide a "Quick Start Guide for Families" that shares key features and platform navigation tools in Spanish on the "Support for Students and Families" webpage. Families can download the "Quick Start Guide in Spanish," which includes key navigation tools.
- The "Support for Families" component provides families with an online "Family Access Dashboard" in English. This dashboard gives families access to the full curriculum for each topic, including lesson materials, student activity sheets, practice problems, assessments, summaries, and vocabulary. It also allows families to monitor student progress through online reports. Additionally, the materials include a standards-based feature that supports mathematics language and English language objectives. It provides suggestions for family support to enhance student success by using appropriate academic language.

Intentional Instructional Design

1.3	Lesson-Level Design	34/34
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.	30/30
1.3b	Materials include a lesson overview outlining the suggested timing for each lesson component.	1/1
1.3c	Materials include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson.	2/2
1.3d	Materials include guidance on the effective use of lesson materials for extended practice (e.g., homework, extension, enrichment).	1/1

The 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. Materials include a lesson overview outlining the suggested timing for each lesson component. Materials include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson. Materials include guidance on the effective use of lesson materials for extended practice (e.g., homework, extension, enrichment).

Evidence includes, but is not limited to:

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.

- Materials include structured, detailed lesson plans with daily objectives, questions, lesson activities, and instructional assessments. Each lesson follows a detailed plan similar to that found in Topic 2, Lesson 1, which includes (1) lesson goals and objectives, (2) opening and framing questions, (3) lesson files and activities, (4) further questions, and (5) suggested assignments. For example, Topic 2, Lesson 1 includes two objectives: (1) to describe a geometric definition of a reflection and (2) to describe a geometric definition of a translation as the composition of two reflections across parallel lines. The materials provide teachers with opening and framing questions, such as, "The two homes and the connection point at the street represent three points. How must the points be positioned to minimize the total distance between them?" and "If the homes were on the opposite side of the street, how would you locate the connection point?" This lesson contains multiple activities. For instance, students collaborate in small groups with rulers and activity sheets to determine the optimal solution while the teacher prompts them to visually assess the two distances and employ mental calculations to estimate various total distances before marking points and measuring them. The materials also provide practice problems for students to complete at the end of each lesson.

- Instructional materials are explicitly listed, for example, in Topic 1: "Using Inductive Reasoning and Conjectures," under "Prepare Instruction" in the topic files. In Topic 10, Lesson 5 contains one objective: to prove and apply the Hinge Theorem and its converse. The opening and framing questions include "Why can you draw an auxiliary line in a proof?" "What makes a formal proof?" "What theorems do you know that involve inequalities in triangles?" Students complete multiple lesson activities, including working in small groups to write a formal proof of the Hinge Theorem. At the end of the lesson, students complete a set of practice problems. The only material required for this lesson is the Lesson 5 "Student Activity Sheet," as listed in the "Topic Preview."

Materials include a lesson overview outlining the suggested timing for each lesson component.

- Materials include a lesson overview outlining the suggested timing for each lesson component. Lessons include a "Deliver Instruction" component that dedicates 5 minutes to opening and framing questions, 35 minutes to lesson activities, and 0–5 minutes to further questions. For example, instructional materials for Topic 1, Lesson 3 include pacing and time suggestions in the lesson: "Opening and framing questions (5 minutes)...Lesson activities (35 minutes)...Further questions (0–5 minutes)." Similarly, lesson materials for Topic 22, and Lesson 5 provide timing suggestions for each subset of the lesson: "Opening and framing questions (5 minutes)...Lesson activities (35 minutes)... Further questions (0–5 minutes)." Additionally, lesson materials for Topic 5, Lesson 3 include suggested pacing for each element of the lesson: "Opening and framing questions (5 minutes)...Lesson activities (35 minutes)...Further questions (0–5 minutes)."

Materials include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson.

- The materials include a list of each lesson component, an overview of the objectives, and the materials needed. Lessons are structured into five phases: (1) Goals and Objectives, (2) Opening and Framing Questions, (3) Lesson Activities, (4) Further Questions, and (5) Suggested Assignments.
- Materials include a list of instructional materials and an additional set of resources with pacing times.
- Materials include a list of materials and resources at the topic level that are not included in any specific component of the lesson overview. For example, in Topic 10's "Prepare Instruction" component, the list of resources contains rulers and protractors, scissors and tape, patty paper, colored pencils and markers, unlined paper, large poster paper, 1:1 computers or tablets (Lesson 7), and the Agile Mind Glossary.

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

- The materials include guidance on effectively using lesson materials for extended practice. For example, Topic 15, Lesson 5 provides multiple constructed response tasks with guidance for differentiation, stating, "You may choose to differentiate the product by giving students a choice in the suggested assignment. There is an optional Constructed Response 4 that can be used as an extension or as a differentiated activity in small groups or stations in the classroom."
- In each lesson, the "Deliver Instruction" component guides using lesson materials for extended practice. For example, Topic 22, Lesson 1 suggests, "For students who need additional practice, you can assign additional prisms from this animation to help give targeted feedback as students work. Have students extend the table on their activity sheet and add descriptions of prisms. This will help students develop fluency with the volume of prisms."
- Materials guide the use of lesson materials, including online work, animations, and practice sets. Lesson materials offer guidance on the use of practice problems for both online and offline practice, giving students a variety of learning choices. The materials also include the "Texas Geometry Lesson Level" alignment document within the "Professional Support" resources. This document identifies lessons that can be used for extension or enrichment.

Progress Monitoring

2.1	Instructional Assessments	24/24
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.	**12/12**
2.1b	Materials include the definition and intended purpose for the types of instructional assessments included.	**12/2**
2.1c	Materials include teacher guidance to ensure consistent and accurate administration of instructional assessments.	**2/2**
2.1d	Diagnostic, formative, and summative assessments are aligned to the TEKS and objectives of the course, unit, or lesson.	**6/6**
2.1e	Instructional assessments include standards-aligned items at varying levels of complexity.	**2/2**

The 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. Materials include the definition and intended purpose for the types of instructional assessments included. Materials include teacher guidance to ensure consistent and accurate administration of instructional assessments. Diagnostic, formative, and summative assessments are aligned to the TEKS and objectives of the course, unit, or lesson. Instructional assessments include standards–aligned items at varying levels of complexity.

Evidence includes, but is not limited to:

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 topic-level diagnostic assessments with a variety of tasks and questions. In the "Test Design Alignment" section of "Reports," the "Geometry Topic 20 Sample Diagnostic Assessment" includes one Drag-and-Drop (DND), four Multiple-Choice with a Single correct Answer (MCSA), and one Fill-in-the-Blank (FIB) question. Each topic includes an assessment with these question types, and open-ended Constructed Responses.
- The materials provide guidance related to lesson-level diagnostic assessments within "Corequisite Support Guides" provided in each topic's scope and sequence documents, per the "Agile Mind's Approach to Assessment" essay in the "Professional Support" component. Corequisite Support Guides "provide ideas for diagnostic assessments to inform the need for these additional supports" related to key content within each unit.
- Lessons open with a Framing Question that contains a diagnostic assessment to assess student knowledge and connections. At the end of each topic, lessons include an assessment link for quizzes or tests. Not all lessons contain a quiz, but they do have a topic assessment.
- The materials include topic-level summative assessments with a variety of question types and include multiple types of tasks. The "Test Design Alignment" section of Reports identifies the

types of questions included in the "Geometry Topics 7–11 Sample Summative Assessment," including MCSA, DND, open-ended (OPEN), FIB, and Multiple-Choice with Multiple-Correct-Answers (MCMA).

- Materials include the "Agile Mind Assessment Guide," which states that "Agile Mind includes a variety of short-cycle formative assessment opportunities, including Student Activity Sheet questions, online puzzles, and check-and-reveal buttons to support questioning and discourse." Materials also include the "Texas Geometry Interim Assessment Blueprints" document, which contains a chart showing the various item types.

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

- The materials include definitions and intended purpose for the types of instructional assessments included. The Agile Mind's Approach to Assessment essay defines the intended purpose for diagnostic assessments: "Diagnostic assessments are short assessments of students' knowledge and skills, given prior to instruction. They are intended to provide evidence of students' strengths and potential knowledge gaps in skills required to understand upcoming content." The essay states, "The purpose of formative assessment is to elicit evidence that helps students and teachers identify strengths, misconceptions, and errors, and monitor progress toward identified success criteria, all to move student learning forward through modifying instructional decisions and student solution methods." Further, the essay describes the definition and purpose of summative assessments, stating, "Summative assessments are a snapshot of retained learning and skills at the end of a period of time. They often include a component of evaluation and are used to mark achievement, such as semester exams."

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

- Materials include teacher guidance to ensure consistent and accurate administration of instructional assessments. The Approach to Assessment essay includes teacher guidance related to the consistent administration of assessments. For example, teacher guidance for administering summative assessments includes, "Because summative assessments are used in evaluative practice, teachers should standardize administration across their classes, while being careful to ensure students are given the appropriate modifications and scaffolds, as needed."
- Materials provide teacher guidance for consistent and accurate administration of topic-level assessments. For example, in Topic 14, Lesson 7, the materials instruct teachers to "Have students complete the Assessment questions. You will need to create a quiz with the online items and ensure students have access to 1-to-1 devices. Have students turn in their written work for the questions as part of their grade."
- Materials guide teachers to consistently and accurately administer the topic-level assessment. For example, Topic 21, Lesson 6 states that "Students will need access to 1:1

computers or tablets to complete the assessment online. Students should complete the Assessment questions independently as a topic-level assessment...Make grid paper, isometric dot paper, ruler, scissors, and tape available to students throughout the assessment."

- Materials include an Assessment Guide that (1) outlines ways to utilize assessment as a critical tool to inform and drive instruction with classes of students on a daily, weekly, or longer basis, and (2) suggests that diagnostic assessments be given at the start of the topic, formative assessments should be given throughout the lesson cycle, and summative assessments should be given at the end of the period.

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

- Diagnostic assessments are aligned to geometry TEKS and topic objectives. Materials include an "Alignment Report" component for publisher-specific online assessments. For example, the Alignment Report includes the Geometry Topic 20 Sample Diagnostic Test, which aligns with TEKS from previous grade levels and topics, including Grade 6 (6.8D), Grade 7 (7.9B), and Grade 9 (G.9A). The assessment description provides an alignment to topic objectives, stating, "This diagnostic test assesses students' prerequisite knowledge of area and circumference of circles and area of triangles."
- Summative assessments are aligned to geometry TEKS and topic objectives. For example, materials include a Geometry Topics 7–11 Sample Summative Assessment that aligns with the TEKS and the topic in which they are addressed. The assessment description provides an alignment to topic objectives, stating, "This assessment, created from interim assessment blueprint #3 in the Geometry course, can be used to assess students on the concepts and skills covered in Geometry Topics 7-11."
- Supplemental materials include the "Agile Mind Approach to Assessment" document and the "*Agile Assessment* Assessment Builder" component. The Approach to Assessment document states that "districts with access can use Agile Assessment to create their own diagnostic assessments aligned to content from earlier topics or courses," "Agile Assessment also enables educators to create medium cycle formative assessments based on a topic's learning objectives or state standard," and "Agile Assessment can be used to create summative assessments organized by standards or by Agile Mind topics."

Instructional assessments include standards-aligned items at varying levels of complexity.

- Materials provide TEKS-aligned assessment items at three levels of complexity. For example, the Geometry Topics 7–11 Sample Summative Assessment in Agile Assessment's "Test Design" section includes items labeled as "Depth of Knowledge" (DOK) 1–3. Though the test description states that "the items on this assessment also align to the TEKS and can provide data on your students' performance against your state standards," no specific TEKS designation is included. Assessment items are aligned with the TEKS and can provide data on student performance. For example, after logging into the product, click on the three dots in the top right corner, select "New," and then choose "Test Designs" from the drop-down menu. Next, click on the three dots next to the exam name and select "Alignments." This opens a separate page showing the location of each question and the corresponding TEK alignment.

- Materials include the "Texas Geometry Interim Assessment Blueprints," each including a chart outlining the cognitive complexity, or Depth of Knowledge (DOK), for each assessment item on a scale of DOK 1 to DOK 3.

Progress Monitoring

2.2	Data Analysis and Progress Monitoring	4/4
2.2a	Instructional assessments and scoring information provide guidance for interpreting and responding to student performance.	2/2
2.2b	Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments.	1/1
2.2c	Materials include tools for students to track their own progress and growth.	1/1

Instructional assessments that are standards–aligned items at varying levels of complexity. Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments. Materials include tools for students to track their own progress and growth.

Evidence includes, but is not limited to:

Instructional assessments and scoring information provide guidance for interpreting and responding to student performance.

- The materials guide teachers in interpreting student performance on assessments for each assessment item in Agile Assessment. For example, on one assessment item, students must find the angles in a triangle when given an exterior angle and an image with congruency marks on two sides of a triangle. In addition to providing the letter answer to the multiple-choice item, the materials explain the answer, stating, "One base angle of the triangle is supplementary to 130°. Therefore, the base angle must be 180° – 130° = 50°. Since the base angles of an isosceles triangle are congruent, the other base angle is also 50° and the other exterior angle is also 130°. Then use the Triangle Sum Theorem to get 180° = 50° + 50° + 80°."
- As an additional example, in the answer key to the Topic 18 MARS Task, teachers find a scoring rubric to aid in interpreting student performance. Within the rubric, publishers provide full credit criteria (Triangle AOY is congruent to triangle AOX (SAS) or (SSS) or (Hypotenuse, leg)) and partial credit criteria (Partial credit: for a partially correct explanation) for interpreting the completeness and scoring of a student submission.
- The "Course Pacing and Planning" section guides responding to student performance in the "Texas Geometry Corequisite Guide." The Corequisite Guide provides recommendations for specific problems within a lesson to use as formative assessments, identifies specific instructional resources to use as a reteach, and provides a list of additional practice problems. For example, in Topic 2, Lesson 1, the materials recommend using Lesson 1 lesson activities from the appendix as a pre-assessment item for the lesson. Teachers can respond to student performance using animations and examples from the appendix topic to give students a "more informal exploration of rigid transformations before continuing with Geometry Topic 2." Finally, the materials recommend using five additional practice problems from the appendix "to solidify these corequisite skills."

- Materials include an "Assessment Guide" for using reports to determine performance by state standards, followed by connecting student strengths and weaknesses with targeted opportunities to reinforce knowledge and skills in specified upcoming lessons.

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

- The Course Pacing and Planning section guides responding to student performance in the Texas Geometry Corequisite Guide. The Corequisite Guide provides recommendations for specific problems within a lesson to use as formative assessments, identifies specific instructional resources to use as a reteach, and provides a list of additional practice problems. For example, in Topic 2, Lesson 1, the materials recommend using Lesson 1 lesson activities from the appendix as a pre-assessment item for the lesson. Teachers can respond to student performance using animations and examples from the appendix topic to give students a "more informal exploration of rigid transformations before continuing with Geometry Topic 2." Finally, the materials recommend using five additional practice problems from the appendix "to solidify these corequisite skills."
- For example, in Topic 13, Lesson 1, the materials recommend using Lesson 1 in the appendix to pre-assess student understanding of the Pythagorean Theorem. Teachers can respond to student performance as needed using an additional lesson to pre-teach the Pythagorean Theorem, then use four additional practice problems from the appendix "to solidify these corequisite skills."
- As an additional example, in Topic 4, a suggested formative assessment comes from "APPENDIX: Solidifying your skills with functions and equations." Based on student performance, teachers can use "APPENDIX: Operations on polynomials" to support students who struggle with polynomial operations and re-assess with APPENDIX: Solidifying your skills with functions and equations.
- The "Technology Tip" in Topic 9, Lesson 2 guides teachers to respond to incomplete work or students who struggle by "reminding students that their goal is to find counterexamples for each case. Students sometimes simply copy the given triangle and don't try to find a triangle with the given parts that [are] not congruent to the given triangle. Be sure to illustrate the counterexamples for SSA and AAA with students as a whole."

Materials include tools for students to track their own progress and growth.

- The materials include tools for student self-reflection and error review, allowing students to understand their learning needs and set individual goals in the "Classroom Routines" tab, which includes the "Classroom Routines" section that provides an "Assessment Process Routine" for students to track their own growth. The assessment process routine provides a structure for students to identify assessment items on which they performed well and items on which they did not perform well, with instructions to re-work missed items to identify mistakes and misconceptions.

- On the "Support for Students and Families" webpage, the "Quick Start Guide for Texas Families" includes online reports accessible to students to help them monitor their progress and performance on assignments, quizzes, and tests. This section includes support for families and tools for students to keep on track and focus on their progress.
- The materials include a student dashboard that provides direct access to monitor progress and growth on practice questions and assessments as well as online tools to help students track their progression throughout the course.

Supports for All Learners

3.1	Differentiation and Scaffolds	8/8
3.1a	Materials include teacher guidance for differentiated instruction, activities, and/or paired (scaffolded) lessons for students who have not yet reached proficiency on grade-level content and skills.	**3/3**
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)	**2/2**
3.1c	Materials include teacher guidance for differentiated instruction, enrichment, and extension activities for students who have demonstrated proficiency in grade-level content and skills.	**3/3**

The materials include teacher guidance for differentiated instruction, activities, and/or paired (scaffolded) lessons for students who have not yet reached proficiency on grade–level content and skills. Materials include pre–teaching or embedded supports for unfamiliar vocabulary and references in text (e.g., figurative language, idioms, academic language). Materials include teacher guidance for differentiated instruction, enrichment, and extension activities for students who have demonstrated proficiency in grade–level content and skills.

Evidence includes, but is not limited to:

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

- The "Geometry Corequisite Support Guide for Texas" document, located in the "Course Planning and Pacing" section of "Professional Support," includes teacher guidance for differentiated instruction for students who have not yet mastered grade-level content and skills. For example, in Topic 4, Lesson 3, the materials guide teachers to formatively assess student ability to solve quadratic equations by factoring using page 10 from the "Exploring 'Consolidating our skills with quadratic functions and equation'" of the indicated Appendix topic, as "Quadratic equations will appear throughout the course as applications of other geometric relationships." In Topic 1, Lesson 1, in the "Lesson Activities" section, teachers find differentiated activities for students and are guided to "provide sentence stems... give anchor charts... provide syntax supports" for students who have not yet met grade-level proficiency. In Topic 4, Lesson 5, the "Lesson Activities" section provides teachers with opportunities to provide differentiated instruction to students who have not yet reached grade-level proficiency and instructs teachers to "observe where they (students) are developmentally in carrying out proofs. This will help you to determine the degree to which you can wean students off of being provided too much structure or help," with additional support stating teachers can provide "the structure provided on page 3" in the "Student Activity Sheet" for students who continue not to meet grade-level proficiency.
- Materials include teacher guidance for differentiated activities for students who have not mastered grade-level content and skills. For example, in the first Appendix topic, the materials

contain multiple activities, including paper-and-pencil tasks, online tasks, simulations, and interactive animations. The materials provide the teacher with guidance for using these activities, stating, "Depending on the needs of your students, you may choose to assign the different components for independent review and practice, or you may choose to use them to facilitate small group instruction. Students have opportunities to review skills using static and interactive problem sets."

- The Geometry Corequisite Support Guide for Texas document provides teachers with scaffolded and paired lessons to support students who have not yet reached grade-level proficiency on grade-level content and skills. When implementing lessons from the Geometry Corequisite Support Guide for Texas, the document states that when "teachers make decisions about allocating time, they should work within vertical teams in their schools or districts to decide what the major focus of each course should be." For example, in Topic 2, Lesson 1, when students perform below grade-level proficiency, teachers can provide scaffolding in Lessons 3, 5, and 6 to further support students.
- The "Prepare Instruction," located in the "Topic Content" section, guides teachers on differentiated paired lessons and includes instructional methods that outline how to gradually and deliberately move students from a concrete stage to a representational stage before moving to the abstract stage of symbolic representation through various hands-on activities using Patty Paper, interactive simulations, and additional models.

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

- Materials include embedded supports for new academic vocabulary through frequent structured opportunities for students to discuss the meaning of new terms and compare their written definitions with partners. For example, in Topic 6, Lesson 1, students work with a partner to write a mathematical definition for parallel lines and then verify their definitions by comparing them to a definition provided by the teacher. Next, the teacher discusses the importance of parallel lines being coplanar by introducing skew lines. Finally, students revise their definition of parallel lines and write a definition for skew lines. Another example, located in Unit 17, Lesson 1, the "Goals and Objectives" section provides teachers with a pre-teaching opportunity for unfamiliar vocabulary. As teachers introduce the lesson, the materials guide teachers to "Define terms associated with a circle... Use appropriate notation to describe arcs of a circle... Make conjectures, prove, and apply relationships between radii and chords on a circle" to familiarize students with vocabulary regarding circles.
- The Unit 17 Prepare Instruction section of teacher materials includes embedded supports for a list of core (unfamiliar) vocabulary words important through the unit: "diameter, center, chord, radius, central angle, inscribed angle, arc, major arc, minor arc, semicircle, intercepted arc, perpendicular bisectors, circumference, secant, and tangent lines," as well as collateral vocabulary words (unfamiliar references) to comprehend situations: "collateral vocabular[ies] such as gazebo, folk art, and hex circles." Another example, located in the "Lesson Activities," provides support for emergent bilingual students and other special populations using the Language strategy to embed support for unfamiliar vocabulary support through 1) defining a

clear purpose and prompt, 2) defining clear roles, and 3) providing supports such as images or sentence stems.
- Materials include embedded supports for unfamiliar vocabulary and share a variety of ways to incorporate vocabulary usage (e.g., think-pair-share, Word Walls, and Tea Parties). For example, in Topic 3, the "Language Support" section of Prepare Instruction states, "All students should become proficient in using the core vocabulary of ordered pair rule, vector, and dilation. Depending on students' experience with other topics, they may also need to review equidistant, transversal, and corresponding angles (formed by two lines and a transversal). Continue to use displays such as a word wall with visual representations and other organizers to help students internalize the mathematical meaning of the terms in this topic. Use cooperative learning strategies such as think-pair-share or Tea Party to help students improve their understanding and use of mathematical terms and properties."

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

- Materials include teacher guidance for differentiated instruction and enrichment for students proficient in grade-level content and skills. For example, Topic 8 includes a differentiation note that states, "Lesson 3 provides an extension opportunity for students to explore Ceva's Theorem. During this lesson, some measurements should be captured for students wanting to explore Ceva's theorem. Other students can skip recording those measurements." Later in the lesson, materials provide additional notes to support students participating in this extension activity.
- Enrichment activities are present for students who have demonstrated conceptual understanding of the grade level. For example, in Unit 2, Lesson 4, the "Classroom Strategy" guides teachers to "Point out that the goal of this activity is not to find the sum of the angle measures of a triangle but to see a different argument for this relationship. In this course, the argument for a relationship is just as important as the relationship itself. Use the questions and Check button on page 5 to summarize the argument."
- Materials include teacher guidance for using constructed-response questions as extension activities for students proficient in grade-level content and skills. For example, Topic 15 provides optional constructed response questions as extension activities in 2 of its 7 lessons that "can be used as an extension or as a differentiated activity in small group or stations in the Classroom." The first task re-engages students with previously studied constructions to verify properties of quadrilaterals, providing "an opportunity to make connections to prior learning and think creatively." The second task applies coordinate proofs to triangle congruence and similarity, providing "an opportunity to make connections to prior learning and reinforce algebraic skills."
- Topic 10, Lesson 3 includes an example in the "Further Questions" section that guides teachers to extend students' understanding and application of the Isosceles Triangle Theorem: "If one angle of an isosceles triangle is 70°, what are all the possible measures for the other two angles?" and "Is the altitude drawn from the vertex angle of an isosceles triangle to the bases also always the median? Does this hold true for a scalene triangle?"

- The materials give guidance to the teacher for extension activities and projects. For example, Unit 1, Lesson 5, "Circles in the Real-World Optional Lesson 5 Reuleaux Triangle," provides guidance that "Lesson 5 is an optional lesson that introduces students to another curve of constant width called the Reuleaux triangle. This lesson can be used as a project or extension in some classes. No assessment items are related to Lesson 5."
- Under the Professional Support section, essays on content, pedagogy, and practice are included, specifically an essay titled, "Differentiated Instruction for Student Success," which provides strategies to differentiate instruction for students through the content, process, product, and learning environment.

Supports for All Learners

3.2	Instructional Methods	13/13
3.2a	Materials include prompts and guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learned explicitly (directly).	6/6
3.2b	Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches.	4/4
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.	3/3

The materials include prompts and guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learned explicitly (directly). Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches. 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.

Evidence includes, but is not limited to:

Materials include prompts and guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learned explicitly (directly).

- Materials include prompts to support the teacher in modeling the concepts to be learned directly and explicitly. For example, in Topic 22, Lesson 1, the "Lesson Activities" section guides teachers on modeling. Materials support the teacher when selecting slides to use for modeling, each slide's significance, and how each is to be explained, such as "play the animation on page 3 to show the characteristics and terminology associated with cylinders" and "use page 4 as a guide to set up the topic." In tandem with the guidance, teachers use the following prompts with the first direction: "How is a cylinder similar to a prism? How is it different from a prism?" and the following prompts with the second direction: "What geometrical attributes of prisms and cylinders are we often interested in measuring? How many of you can recall the formulas for volume and surface area of prisms and cylinders that you may have learned in the past? Can you explain why one of the formulas you can recall works?" The guidance and prompts work together to help teachers model information about cylinders and prisms.
- Materials include prompts and guidance to support the teacher in explaining and communicating the concept(s) directly and explicitly. For example, in Topic 1, Lesson 1, the materials provide the following prompts and guidance to explain the idea of self-similarity: "Discuss the idea of self-similarity using the broccoli example in nature and the Sierpinski triangle. Ask: How do the broccoli example in nature and the Sierpinski triangle exemplify the idea of self-similarity? Pause after the Sierpinski triangle and have students discuss with a partner the patterns they have seen so far using the questions on their activity sheet."

- As another example, in the Lesson Activities section of Lesson 1, the "Classroom Strategy" section includes teacher guidance: "Have students participate in a Think-Pair-Share activity with their partner as they identify the patterns in question 1."
- The materials give specific prompts and guidance to support the teacher in modeling the concept students will learn. Materials provide given vocabulary to use in lesson delivery as well as specific supports to use when developing the lesson, including 1) drawing with correct notation, 2) documenting observations, and 3) connecting the information to conjectures. For example, the "Deliver Instruction" section of Unit 1, Lesson 1 states, "Describe how inductive reasoning is used in mathematics. Describe patterns based on inductive reasoning and explain how to use a pattern to predict the next term in a sequence. Describe points, lines, and planes using physical models in our world, and define and use the correct notation for line, segment, ray, angle, angle bisector, congruence, midpoint, and collinear points. Observe and describe patterns and relationships among segment and angle bisectors and write conjectures based upon their observations using appropriate mathematical vocabulary. Make geometric constructions related to angle and segment bisectors using paper folding. Formulate and clearly state conjectures related to incenters and circumcenters of triangles using appropriate mathematical vocabulary. Apply conjectures related to incenters and circumcenters of triangles and explain their reasoning using appropriate mathematical vocabulary."

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

- Materials include teacher guidance and recommendations for effective lesson facilitation using a variety of instructional approaches, including guidance for teachers to help promote student discourse and active participation. In Topic 4, materials suggest that teachers "balance questions posed to the whole class (call-out questions) with those directed to a specific student. In developing deductive reasoning skills, it is critical that teachers provide students a sufficient amount of wait time for them to process and articulate their reasoning." Questioning prompts for teachers during lesson activities include "What's the difference between deductive and inductive reasoning?" "How could you use 'tiles' to demonstrate $(a – b)(a – b)= a^2 – 2ab + b^2$?" and "How is the seesaw model a representation of $a = a$?"
- Materials include teacher recommendations using a variety (e.g., more than two) of instructional approaches. For example, the "Lesson Activities" section of Topic 12, Lesson 5, provides recommendations for multiple approaches for delivery by enabling students to use "Patty Paper, MIRAs, rulers, dynamic geometry technology, [or] the animation on this page." Further, in Topic 19, Lesson 2, under Deliver Instruction, teachers are given guidance and recommendations on lesson facilitation: "Students should cut out the swan on their activity sheet to model the computer animation, then calculate the area of the swan. Before students begin, decide if using the same units is important or not. The class may decide to use the same units so that they can all compare their answers accurately. Or they may decide to use two different units of measure and notice the difference in their answers. Either method provides an opportunity for discussion."

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.

- Materials include the Advice for Instruction located at the beginning of each topic, which supports and provides guidance on recommended classroom structures, including whole group, small group, and individual instruction and practice. For example, Topic 8 guides teachers in facilitating collaborative student practice in Lesson 2 as they work in pairs to complete a proof using a puzzle from their activity sheets. In Lesson 3, the materials guide teachers to "present the Circles in Triangles problem to students in small groups. Have each group work through the questions together and make a poster of their solutions." Additionally, each lesson provides a set of practice problems "for students to practice on their own with concepts and skills learned so far and to assess their progress."
- Materials include recommended structures (e.g., whole group, small group, individual) to support effective implementation. For example, in Topic 19, Lesson 2, the Deliver Instruction section recommends that teachers "Divide the class into groups of three or four students. Assign each group one of the three quadrilaterals (kite, rhombus, or trapezoid). Using questions 2–4 on the activity sheet, have each group cut out the pieces of the assigned shape and rearrange it into a rectangle. Then the group should write a formula for the area of the shape. A representative of the group should check the work using the animation on page 3."

Supports for All Learners

3.3	Supports for Emergent Bilingual Students	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.	**2/2**
3.3b	Materials include implementation guidance to support teachers in effectively using the materials in state-approved bilingual/ESL programs.	**1/1**
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.	**8/8**
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.	**Not scored**

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

Evidence includes, but is not limited to:

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.

- Materials include teacher guidance on linguistic accommodations. For example, the "Teaching English Language Learners" essay, located in the "Essays on Content, Pedagogy, and Practice" section of the "Professional Support" component, recommends using Kagan structures as an explicit strategy for fostering discourse, such as "Rally Coach," in which students take turns as problem solvers and coaches, one working on a problem while the other coaches and encourages.
- As another example, in Topic 18, Lesson 1, the "Lesson Activities" section includes the following language strategy: "Pair students and ask them to read the archaeology problem silently then discuss what they read with their partners. Ask the pairs to come up with ideas for how Selma and Esteban can calculate the radius of the circle with such limited measurement. Solicit ideas from the teams, but do not attempt to solve now. Post suggestions for solutions to return to later for consideration." For example, the essay details teacher guidance on lesson

and language development and outlines how to engage emergent bilingual students in using increasingly more academic language. The outline includes word walls, echo charts, think-alouds, and vocabulary notebooks, as well as rich visualizations and animations.

- The materials provide that language is developed through pictures, listening, and writing, as well as having student immersion in not only the English language but the language of mathematics, stating that "Many of the supports discussed in this essay are also called out in Agile Mind's Advice for Instruction for teachers to utilize within the context of specific lessons. After a few lessons, teachers will begin to see other places where support can be employed. The goal of all ELL supports is to immerse students in the English language, utilizing as many different senses and methods as possible. When spoken and written language is supported with explicit strategies, visualizations, and interactions, ELL students will acquire and be successful with English and mathematics together."
- The materials state, "Depending on the language level of the ELL student, it is often helpful for that student to be 'coached' first," They provide specific guidance according to the various language levels as defined by the ELPS. Likewise, ELPS levels of language proficiency are mentioned within the essay and elsewhere in the materials or resources.

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

- The materials include information on state-approved bilingual and ESL programs and provide ongoing guidance for emergent bilingual students throughout the teacher-facing instructions. The resources include an essay titled "Teaching English Language Learners," which offers specific high-yield teaching strategies and highlights key design elements of the Agile Mind system to support rich learning for emergent bilingual students. It includes explicit strategies for vocabulary acquisition, building conceptual understanding, fostering student discourse, and utilizing formative assessments.
- The materials include the Geometry Scope and Sequence, which directly aligns with the state-approved English Language Proficiency Standards (ELPS). Each topic within the scope and sequence lists the specific ELPS addressed.
- The materials provide guidance and implementation support for teachers of emergent bilingual (EB) students, such as word walls and vocabulary notebooks, stating that "Every Agile Mind topic will include vocabulary that should be included on the classroom word wall. It is more effective to build your word wall as you interact with words in the course as opposed to putting all the words up at the beginning of the topic. Word walls build all students' content vocabulary, but they are critical to building ELL students' proficiency. All students should keep a vocabulary notebook; ELL students should include translations and visual references."

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.

- Materials include embedded guidance for teachers to support EB students in increasing comprehension and building background knowledge through oral and written discourse. For example, in Topic 5, Lesson 3 provides a specific language strategy: students participate in a paired reading of the first paragraph of a problem situation defining a rational function. Afterward, each pair of students writes an example of a rational function based on their understanding of the paragraph, followed by a teacher-led class discussion to address any misunderstandings based on student examples.
- Materials include guidance for teachers to engage EB students in written discourse. For example, Topic 4, Lesson 4 activities include a gallery walk with feedback, where students develop academic vocabulary in creating their poster, giving written feedback on other student work, and then speaking with their partner to draft "a two-column proof for Part Two of the Common Angle Theorem."
- The Teaching English Language Learners document guides teachers to foster student discourse: "Active participation in classroom discussion is essential to learning for all students—and particularly for ELLs. Teachers must create and support frequent opportunities for students to speak and write about the subject matter in meaningful ways that encourage reasoning, justifying, generalizing, and deepening content knowledge." "Small group interactions around building plans for proofs will give all students the opportunity to hone their language skills through peer discussions. Hold all students accountable for articulating what they know both orally as well as in writing using appropriate content and academic vocabulary."

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

- The materials are not designed for dual language immersion (DLI) programs. Each unit includes a link for Vocabulary which links to a list of vocabulary for the unit. The terms are hyperlinked to a page that includes the definition and a visual representation. For example, in Topic 3: Functions, the word term is defined as "a single expression being added in a polynomial." Beneath the definition is a visual representation of the example of a polynomial with the terms identified. A text-to-speech option is included for the polynomials and terms.
- The essay Teaching English Language Learners provides strategies and explains the material's design elements to support the learning for emergent bilingual students. The essay includes recommendations and suggestions for building academic vocabulary with explicit strategies for vocabulary acquisition, including vocabulary notebooks and word walls. The essay explains how teachers can assist students as they bridge vocabulary acquisition to conceptual understanding by using multiple representations to develop deeper understanding. The essay includes insight into fostering student discourse, using formative assessments, and supporting other special learners. Each of those topics within the essay

includes explicit strategies, such as think-write-pair-share, learning goals, exit tickets, and principles from Universal Design for Learning. The material includes suggestions to address the transfer of metalinguistic skills from English to the partner language by having emergent bilingual students pair with native English speakers.

Depth and Coherence of Key Concepts

4.1	Depth of Key Concepts	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.	**1/1**
4.1b	Questions and tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards.	**2/2**

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. Questions and tasks progressively increase in rigor and complexity, leading to grade–level proficiency in the mathematics standards.

Evidence includes, but is not limited to:

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.

- The materials include topic practices and quizzes throughout, which include a variety of assessment question types, including multiselect, open-ended short answer, interactive graphs with slider tools, and constructed response items, all of which require deeper thinking from students. For example, the Topic 5 practice section includes a variety of question types.
- The materials provide practice opportunities throughout a topic that require students to demonstrate a depth of understanding aligned with all TEKS. For instance, under "Course Topics," in "Section 3: Transformations and Coordinate Geometry," "Prepare Instruction," within the "Topic Files," "Constructed Response 1." The student is assigned to move a figure of a dog from one quadrant to another and must describe the transformations in words.
- The activity sheets designed to accompany the online material for each topic include a variety of lesson activities ranging from defining new vocabulary, applying recently learned skills within real-world contexts, and justifying their responses. The activity sheets provide an opportunity for more than rote memorization and repeated algorithms. Students are expected to apply their knowledge in a variety of ways to demonstrate a depth of understanding of the TEKS.

Questions and tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards.

- Questions progressively increase in rigor and complexity. For example, in Topic 12, Lesson 5, "Student Activity Sheet," "Practice Questions 14–17," Question 14 requires a depth of knowledge of 1 (DOK1) with a fill-in-the-blank answer for the following prompt: "For each pair of triangles below, decide if you can say that the triangles are similar. If so, state the postulate." Question 15 requires students to choose from a variety of triangles to make a conjecture and then determine the postulate that proves their conjecture at DOK2 with a fill-in-the-blank answer structure: "Find three pairs of similar triangles and write the postulate that makes them similar. Note that the drawings are not drawn to scale." Question 16a provides a diagram and a prompt, and then Question 16b requires students to write a correct conjecture without a fill-in-the-blank structure DOK2: "Write the similarity statement so that the appropriate corresponding parts match up in both triangles." Finally, Question 17 gives a diagram with information and asks students to write a proof without additional answer structure, which is a task at DOK3.

- Tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards. For example, in the "Course Planning and Pacing" section of "Professional Support," the "Course Rationale" document explains that students begin the first several topics in the course using patty paper as a primary tool for constructions, introducing the compass and straightedge for constructions later in Topic 11, "following work with congruent triangles so that these constructions can be justified with formal proofs."
- Tasks increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards. For example, in Unit 2, Lesson 2, in the "Deliver Instructions" section, students are first tasked to fill in a puzzle, then transition to using patty paper animation to reflect a point across a line. Next, students use question-and-check buttons to help analyze their constructions. Students then work in pairs to answer the prompt, "What happens if you reflect a single object across two different lines?" and conclude by completing more practice problems to reflect and check their understanding. Lastly, there is a class discussion about the constructions.

Depth and Coherence of Key Concepts

4.2	Coherence of Key Concepts	12/12
4.2a	Materials demonstrate coherence across courses/grade bands through a logically sequenced and connected scope and sequence.	**2/2**
4.2b	Materials demonstrate coherence across units by explicitly connecting patterns, big ideas, and relationships between mathematical concepts.	**3/3**
4.2c	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.	**3/3**
4.2d	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.	**4/4**

The materials demonstrate coherence across courses/grade bands through a logically sequenced and connected scope and sequence. Materials demonstrate coherence across units by explicitly connecting patterns, big ideas, and relationships between mathematical concepts. 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. 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.

Evidence includes, but is not limited to:

Materials demonstrate coherence across courses/grade bands through a logically sequenced and connected scope and sequence.

- The materials identify connections between Algebra I and Geometry. According to the "Course Rationale" document, "As students explore the content of the TEKS, they will make connections to reinforce algebraic skills, including equations of lines, solving linear and quadratic equations, and using the coordinate plane to describe geometric concepts."
- To provide logical structure and sequence across grade bands, materials include a "Scope and Sequence" document, which includes connections to prior course TEKS. The materials in the "Similarity Transformation" section list "Corequisite standards: 8.3.A, 8.3.B, A1.11.A," explaining the previous TEKS's sequencing within grade band structures.
- Materials include a "Course Rationale" document that provides a coherent sequence within the course and across grade bands. For example, in the "Geometric Modeling in Two Dimensions" section, the materials demonstrate coherence across the course using language, such as "Next, students apply and extend their understanding of perimeter and area from middle school... Students also use proportional reasoning," a middle school and Algebra I concept. "Students began their study of geometric concepts in middle school mathematics. They studied area, surface area, and volume and informally investigated lines, angles, and triangles. Students in middle school also explored transformations, including translations,

reflections, rotations, and dilations. The Course Rationale document further explains the coherent connection to other courses: "As students explore the content of the TEKS, they will make connections to reinforce algebraic skills including equations of lines, solving linear and quadratic equations, and using the coordinate plane to describe geometric concepts."

- The Geometry course outlined in this document begins with developing the tools of geometry, including transformations, proof, and constructions. These tools are used throughout the course as students formalize geometric concepts studied in earlier courses and extend those ideas to new concepts presented in the high school standards. There is a focus on modeling, problem-solving, and proof throughout the course. Throughout this Geometry course, students use mathematical processes to acquire and demonstrate mathematical understanding.

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

- Materials demonstrate coherence across units by explicitly connecting big ideas in the Course Rationale document in the "Course Planning and Pacing" section of "Professional Support." The Course Rationale explicitly clusters topics into big ideas or "concept connections." For example, Topics 1–3 are clustered under "Geometric transformations," Topics 4–6 under "Deductive reasoning with angles and lines," and Topics 7–8 under "Triangles." Topics are broken down into coordinate and transformational geometry, logical argument and constructions, proof, congruence, similarity, trigonometry, two-three-dimensional figures, and probability. In each topic, there is another grouping of big ideas as delegated in lesson groupings: "The Geometry TEKS content standards emphasize coordinate and transformational geometry, logical argument and constructions, proof, congruence, similarity, trigonometry, two- and three-dimensional figures, circles, and probability."
- Materials explain course coherence across units by connecting the big idea of reasoning in the Course Rationale: "The Agile Mind Texas Geometry course was designed to provide students with tools early in the course so that they could make use of these tools throughout their study of geometry," where these tools include "Conjecture, Reasoning, Transformations, Coordinate geometry, [and] Constructions."

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.

- Materials demonstrate coherence across units by explicitly connecting current content to content that will be learned in future courses in the "About This Topic" section found at the beginning of each topic. For example, the About This Topic section of Topic 22 states, "Students may have learned various formulas to find the volume and surface area of such solids in middle school mathematics. However, the intent of this topic is to connect those formulas to their derivations in order to view volume as accumulation, which is an important connection to Calculus." As an additional example, the Topic 19, Lesson 6 "Deliver

Instruction" section includes a "Teacher Corner" subsection that connects Geometry content to future content, stating that students build the "foundation for work [they] may encounter in Calculus as they learn about using numerical methods to estimate the area under a curve, such as the Trapezoidal Rule, and the definite integral to find that area exactly."

- Materials demonstrate coherence across middle school, Geometry, and Algebra 2 by citing the connections between the courses through the learning of transformations and their definitions: "In the topic Rigid transformations, students build on their work with transformations in middle school to formalize definitions and use transformations prove geometric properties, observe patterns, and describe compositions of transformations. Congruence is defined in terms of rigid motion. Students learn about symmetries in shapes, including reflectional and rotational symmetries. In later topics or courses, when students have more knowledge about congruence, attributes of a triangle, parallel or perpendicular lines, etc., they will use these transformations to develop formal proofs."
- Materials demonstrate coherence across units by connecting the content learned in previous courses/grade levels to the content to be learned in the current course/grade level. For example, the Unit 2 "Prepare Instructions" section states, "In the topic Rigid transformations, students build on their work with transformations in middle school to formalize definitions and use transformations to prove geometric properties, observe patterns, and describe compositions of transformations." Further, the "About the Course" section states, "Coordinate geometry provides a connection and reinforcement to ideas studied in Algebra I."

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.

- Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts from prior grade levels to new mathematical knowledge and skills. For example, in Topic 15, Lesson 1 guides teachers to make connections to middle school geometry: "Define a regular polygon. Students should have seen this definition in middle school, but you will need to probe on their understanding of the term. Ask: What shape is a regular quadrilateral? Are all equilateral pentagons regular? Show an example. A rectangle has congruent angles. Is it a regular polygon? Why or why not?"
- Materials demonstrate coherence by connecting prior knowledge from the current grade level directly to the new knowledge in the lesson. For example, in Topic 2, Lesson 1, the Deliver Instructions section includes "Support for ELL/Special Populations" that connects students' prior knowledge of "vocabulary associated with transformations" to vocabulary from the current lesson when "different terms for rigid transformations are presented."
- Materials demonstrate coherence at the lesson level by connecting prior knowledge of procedures from prior courses to the new learning. For example, in the Unit 3 "Transformations and Coordinate Geometry" lesson, "Prepare Instruction" states, "Most students have likely studied basic ordered pair rules for basic transformations, like reflections across the x- and y-axes, in middle school. This topic extends that work and links it to the composition definitions that students developed in a prior lesson in this course."

Depth and Coherence of Key Concepts

4.3	Spaced and Interleaved Practice	8/8
4.3a	Materials provide spaced retrieval opportunities with previously learned skills and concepts across lessons and units.	**4/4**
4.3b	Materials provide interleaved practice opportunities with previously learned skills and concepts across lessons and units.	**4/4**

The materials provide spaced retrieval opportunities with previously learned skills and concepts across lessons and units. Materials provide interleaved practice opportunities with previously learned skills and concepts across lessons and units.

Evidence includes, but is not limited to:

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

- Materials provide spaced retrieval opportunities with previously learned concepts and skills across units. For example, the first question students encounter in Topic 9, Lesson 1, asks them to recall previously learned information about transformations from Topics 2 and 3 before learning about congruent triangle postulates: "Review: Find examples of a translation, a reflection, and a rotation in the diagram. You may want to use Patty Paper to verify your work. What do you observe about each pair of figures you find?"
- Materials provide spaced retrieval opportunities with previously learned skills and concepts across units. For example, in Topic 1, Lesson 4, "Deliver Instruction" provides spaced retrieval opportunities, starting with the framing questions, where students retrieve information regarding lines on the coordinate plane. Next, the lesson directs students to "focus on precise use of geometric language and notation as [they] describe the patterns they observe," a skill used throughout the course. During the activity part of the lesson, students retrieve conceptual and skill knowledge of triangles, including "draw[ing] non-symmetrical triangles when they do paper folding activities." At the end of the lesson, students connect their paper folding concepts and skills to the new concepts and skills with angle bisectors: "Can you think of a practical or real-life situation where the angle bisector conjecture might be helpful? Can you think of a real-life situation where locating an incenter and using an inscribed triangle might be helpful?" The lesson reflects a spaced retrieval process by engaging prior knowledge of triangles, using current knowledge to make conjectures, and building new knowledge by actively working with new information while connecting it directly to prior knowledge. As an additional example, in Topic 3, Lesson 2, we find spaced retrieval opportunities with previously learned skills and concepts across units: "In the previous topic students discovered that the composition of two reflections in non-parallel lines was a rotation. Ask: How was the angle of rotation related to the angle made by the two intersecting lines of reflection? [The angle of rotation was twice the acute angle between the two lines]. What would happen if the two lines of reflection were perpendicular? [The composition of the two reflections would be the same as a 180° rotation]."

- The materials provide modeling examples, tasks, and discussion prompts that activate students' prior knowledge of preceding concepts as an entry point to build new concepts in the lessons. Students have previously studied the basics of triangles and now share what they remember to make greater application and understanding. "Ask students to sketch a triangle with two 45° angles. Then ask them to list as many facts as they can about the triangle shown on this page. They should be able to identify that the legs are equal since the base angles are equal and they can use the Triangle Sum Theorem to show that ∠C is a right angle. Because the triangle is an isosceles right triangle, we can find the hypotenuse if we only know one of the legs."

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

- Materials provide interleaved practice opportunities with previously learned skills and concepts across lessons and units. Topic 1, Lesson 8 provides interleaved practice opportunities for content learned across the topic. Material design allows teachers to control the order of assessment items to arrange questions in an interleaved order. Specifically, materials give teachers the ability to quiz students without clustering questions by lesson subtopic (concept) or question type (skill). For example, Topic 1 Assessment Question 19 assesses the concept of making conjectures about right triangles with the skill of evaluating given conjectures and checking boxes. Question 18 evaluates the concept of inductive reasoning by determining and completing a pattern, followed by filling in the blank.
- In Topic 3, we find interleaved practice opportunities with previously learned skills and concepts across lessons. Each lesson says, "Use coordinate representations of figures and transformations in the coordinate plane to solve application problems." In the coordinate plane, ordered pair rules can describe reflections, translations, and rotations of a figure (pre-image). Students not only identify them but also formulate them, as in the Constructed Response in Lesson 8.

Balance of Conceptual and Procedural Understanding

5.1	Development of Conceptual Understanding	18/18
5.1a	Questions and tasks require students to interpret, analyze, and evaluate a variety of models and representations for mathematical concepts and situations.	**12/12**
5.1b	Questions and tasks require students to create a variety of models to represent mathematical situations.	**2/2**
5.1c	Questions and tasks provide opportunities for students to apply conceptual understanding to new problem situations and contexts.	**4/4**

Questions and tasks that require students to interpret, analyze, and evaluate a variety of models and representations for mathematical concepts and situations. Questions and tasks that require students to create a variety of models to represent mathematical situations. Questions and tasks that provide opportunities for students to apply conceptual understanding to new problem situations and contexts.

Evidence includes, but is not limited to:

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

- Tasks require students to interpret, analyze, and evaluate a variety of models and representations for mathematical concepts. For example, in Topic 26, Lesson 4, teachers "Show students the sphere, cylinder, prism, and pear shape objects you have. Ask them to visualize a triangle on each of these surfaces. Ask students to recall the Triangle Sum Theorem from Euclidean geometry. Ask: 'Do you think the Triangle Sum Theorem will hold true for triangles on these three surfaces?'"
- Topic 28, Lesson 4 includes a task that requires students to interpret, analyze, and evaluate models and representations: "Have student pairs work on the first Constructed Response question and prepare a poster with their solutions. After all students have finished and posted their solutions, allow students to do a gallery walk of the solutions. Discuss similarities and differences in the solutions posted."
- Questions require students to interpret, analyze, and evaluate various models for mathematical concepts and situations. For example, the "Constructed Response 1" document from Topic 10, Part A begins with students encountering a quadrilateral model with auxiliary lines and information to "Prove: HK || IJ." To answer the question, students interpret the symbols, analyze the visual of the quadrilateral, and evaluate congruence based on given information. In Part B, the second model contains a partially filled proof for proving "$m\angle HKJ = 90°$." While completing the proof, students interpret the given information and the filled-in sections of the proof table, analyze the visual of the quadrilateral and given information, "Given: HK ≅ IJ, HJ ≅ IK, HK || IJ," and evaluate the missing information to add to the partial proof. The Constructed Response 1 task requires students to interpret, analyze, and evaluate a variety of models and apply the information to the mathematical concepts of congruency,

parallelism, and angle measures in the situation of "guarantee[ing] that the corners of walls and foundation[s] are 'square.'"

Questions and tasks require students to create a variety of models to represent mathematical situations.

- Student-facing questions require students to create various models to represent mathematical situations. For example, in Topic 5, Lesson 4, students create an Euler diagram to represent the Vertical Angle Theorem, and then develop their own examples to add to the diagram. Students also represent the situation using symbolic logic notation.
- The "MARS Task" in Topic 19 provides students with the opportunity to "draw a diagram to show how the two triangles and the quadrilateral can be rearranged to make a square," creating a model to represent the mathematical situation. Students also "calculate the lengths of the sides of the two triangles Y and Z, and the sides of the quadrilateral X," creating their own representation (using a given formula) of how to calculate the lengths.
- In Topic 19, Lesson 3, materials provide a "Student Activity Sheet" that includes a question in which students create a model to represent a mathematical situation. Given information about a patio, students create "an accurate drawing of the patio using a coordinate grid, giving the coordinates of each vertex on your drawing. Make sure to include a scale on the grid. Then calculate the perimeter and area of the patio," connecting their representation to a mathematical situation.
- As an additional example, in Topic 13, Lesson 2 Student Activity Sheet, students use squares of paper with specific dimensions to create a table containing columns of information about the squares. Students then create a conjecture about acute, obtuse, and right triangles to connect to the Pythagorean Theorem.

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

- Constructed response tasks allow students to apply conceptual understanding to new situations and contexts. For example, in Topic 13, Lesson 3, after learning about the distance and midpoint formulas, a constructed response task asks students to analyze a map containing school and cell tower locations, explaining that a local school district is working with cellular providers to improve school internet access. The materials prompt, "Make a proposal to the district for a location for another cell tower that would provide better service to schools A, B, C, and D. Support your proposal with distances and explain the reasoning behind your recommendations."
- Questions provide opportunities for students to apply conceptual understanding to new problem contexts. For example, in the Topic 1, Lesson 1 Student Activity Sheet, Question 6 requires students to apply conceptual knowledge of numeric patterns to the new problem context of the Fibonacci Sequence: "Find the pattern in the number of branches as the tree grows." In Lesson 2, Question 11, students explain "how m∠DBG and m∠DBG [are] different"

by applying their knowledge of notation to an abstract problem context by differentiating between two concepts.

- As a further example, in the Topic 3 Constructed Response 1 document, students are tasked with an animation project using a coordinate grid on a computer and prompted to "Describe, in words, what transformations Alicia will need to use to move the dog," applying the conceptual understanding of coordinate transformations to the situation of computer animation.
- Topic 25, Lesson 5 includes questions that require students to apply conceptual understanding to new problem situations and contexts. Students are given a diagram of cubes and presented with the following situation: "Suppose you separated the larger cube into all of its component smaller cubes and measured the volume of each smaller cube. The total volume of the smaller cubes would be the same as the volume of the large cube." The students then respond to the following questions: "What would the total surface area of the smaller cubes be? How does the total surface area of the smaller cubes compare to the surface area of the original cube?"
- Questions and tasks in the materials prompt students to apply conceptual understanding to new situations. In Topic 13, Lesson 3, students prove the Distance formula using the Pythagorean Theorem. The materials instruct students to "develop the formula for distance in the coordinate plane and explain a derivation of the formula using the Pythagorean Theorem. Apply the distance formula in problem situations."

Balance of Conceptual and Procedural Understanding

5.2	Development of Fluency	12/12
5.2a	Materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade-level tasks.	2/2
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.	3/3
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.	6/6
5.2d	Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches.	1/1

The materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade–level tasks. Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and/or throughout a unit. Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson and throughout a unit. Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches.

Evidence includes, but is not limited to:

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

- The materials provide tasks designed to build fluency by providing Appendix lessons to support students in completing grade-level tasks. For example, in "APPENDIX: Solidifying your skills with functions and equations," students "review and strengthen their fluency with quadratic functions and equations as they create and analyze graphs of quadratic functions, multiply and factor polynomial expressions, and solve quadratic equations using graphs, factoring, and the quadratic formula." According to the "Scope and Sequence" document, these lessons support new learning about transformations and coordinate geometry.
- Materials provide "Staying Sharp" practice within its Appendix lessons, which are designed to build the fluency and automaticity necessary to complete grade-level tasks. For example, in "APPENDIX: Solving quadratic equations," Staying Sharp tasks include evaluating an expression for a given value, finding the vertex and axis of symmetry for a given quadratic function, and factoring a trinomial with a value greater than one.
- Materials build student automaticity necessary to complete grade-level tasks. For example, the tasks in Topic 3, Lesson 1 give students repeated opportunities to practice coordinate notation of reflection transformations. Combined with practice across the topic, students receive multiple opportunities to use this method, building automaticity in identifying and applying reflection transformations.

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

- Materials provide opportunities for students to apply efficient, flexible, and accurate procedures within their lessons. For example, in the Topic 2, Lesson 1, Student Activity Sheet, students complete problems that do not specify a strategy to use but do ask students to explain how they arrived at an answer: "The diagram shows a miniature golf hole. Starting at the tee, construct a path that would result in a hole-in-one. Explain your solution." As a further example, in Topic 16, Lesson 1, "Deliver Instruction" section, students review the definition of a circle, then define a semicircle and work together to "use right Triangle GBC to find the height of C." Teachers to ask, "What are the coordinates of C? How does knowing the coordinates of C help [the student] determine the maximum height of a vehicle passing through the tunnel?" In providing context through the "Tunnel" lesson and practice opportunities, including discussion with a peer, the materials create opportunities to efficiently apply mathematical procedures.
- Materials provide opportunities for students to practice applying accurate mathematical procedures throughout a unit. In Topic 16, Lesson 4, Deliver Instruction, while reviewing the process for expanding binomials, materials direct students to "Use the Check button to validate student responses and to introduce the language of the general form of the equation of a circle" to ensure students complete the procedures for expanding a binomial accurately and receive accurate language regarding the equation of a circle.
- Topic 24, Lesson 1 provides opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson: "Introduce the interactive animation and have students work with a partner to practice finding the volume of various spheres. Have students record the dimensions of the spheres they create on their activity sheet and calculate the volume. As students work, remind them not to round their calculations before the final answer."

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

- Students include lesson-level opportunities to evaluate procedures, processes, and solutions for flexibility and accuracy. For example, in Topic 15, Lesson 5, the materials ask, "What are some different ways you could classify quadrilateral ABCD? Justify your answer."
- In Topic 1, Lesson 6, teachers find information for closing the lesson, providing opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson. While debriefing a lesson's small group assignment, materials guide teachers to "revisit the framing questions to begin this discussion [with] student pairs justify[ing] their response using the triangle constructions they made." Materials direct teachers to "use the following questions to guide the discussion: Is the incenter of a triangle always in the interior of the triangle? How do you know?" Comparing the process and solution of the incenter's location enables students to evaluate their process for flexibility ("Where is the center?") and accuracy with justification. Other questions include, "For which type of

triangle is the circumcenter inside the triangle? Is this true for only your example or others in the class?" "For which type of triangle is the circumcenter outside the triangle? Is this true for only your example or others in the class?" "For which type of triangle is the circumcenter on the triangle? Where on the triangle is the circumcenter in this case? Is this true for only your example or others in the class?" "When are the incenter and circumcenter at the same location? Why? Have students write one or more conjectures summarizing their findings from the lesson." Students can evaluate the accuracy of their solution as they justify each response. Comparing responses with other students provides the opportunity to evaluate procedures, processes, and solutions for efficiency.

- In Topic 4, Unit 4, materials guide teachers to use a "Gallery Walk" as a way for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the unit. Using the "Constructed Response" document, in which students create their own proofs, teachers display student work in a "gallery" for students to peruse. After "Giv[ing] each student a pack of Post-its," teachers direct students to "quietly walk by each artifact, [giving] an opportunity to provide feedback." The Constructed Response covers content throughout the unit. By giving feedback, students evaluate the procedures, processes, and solutions from the unit. Student feedback may include efficiency for any extraneous information found in a proof, flexibility if a different but accurate method or process is used, and accuracy when conclusions reached differ. After giving feedback, "students take down their posters and have some time to revise their work," applying feedback as they evaluate their own work.
- Topic 24 provides opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within its lessons. For example, in Lesson 1: "For students who need additional practice, you can assign additional spheres from this animation to help give targeted feedback as students work. Have students extend the table on their activity sheet and add descriptions of spheres. This will help students develop fluency with the volume of spheres."

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

- Materials provide embedded supports for teachers to guide students towards increasingly efficient approaches. For example, in Topic 19, Lesson 3, students begin finding areas of regular polygons by cutting shapes into shapes of known areas, such as cutting a regular octagon into rectangles and a pentagon into triangles. By the end of the lesson, students are guided to use the formula A=12pa to find the areas of regular polygons.
- Throughout materials, "Classroom strategy" information supports teachers as they guide students toward increasingly efficient approaches. As a specific example, Topic 4, Lesson 4, "Deliver Instruction" embeds specific information on performing a Gallery Walk assignment: "Classroom strategy. Students participate in a Gallery Walk. Gallery walks are used in classrooms and in many workplaces. There are two main purposes of a gallery walk: (1) to help a group become familiar with the kind of work being done by their peers, and (2) to allow one to get and receive feedback on their work prior to a revision. Here's a procedure you could use for the Constructed response: Give each student a pack of Post-its. As they quietly walk by each artifact, they have an opportunity to provide feedback. Remind students that 'cool' feedback

should be done in the form of a question. Students are not using the Post-its to provide solutions or next steps. After enough time has elapsed, students take down their posters and have some time to revise their work."

- As additional examples, in Topic 24, Lesson 4 includes embedded supports for teachers to guide students toward increasingly efficient approaches: "Lead[ing] a class discussion for how you might use the strange figure shown and a sphere to develop a proof as described." In Topic 24, Lesson 5, the Deliver Instruction section embeds specific information about working in pairs "to confirm their counts of the dots in the graphic that represent individual hairs."

Balance of Conceptual and Procedural Understanding

5.3	Balance of Conceptual Understanding and Procedural Fluency	16/16
5.3a	Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed.	2/2
5.3b	Questions and tasks include the use of concrete models and manipulatives, pictorial representation (figures/drawings), and abstract representations.	6/6
5.3c	Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts.	8/8

The materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed. Questions and tasks that include the use of concrete models and manipulatives, pictorial representation (figures/drawings), and abstract representations. Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numerical/algorithmic) concepts.

Evidence includes, but is not limited to:

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

- Materials include a Goals and Objectives section for lessons in the unit without placing a conceptual or procedural emphasis on TEKS. For example, in the "Prepare Instruction" section of Topic 24, the first objective reads, "Visualize how a sphere can be constructed as the set of all points in space equidistant from a given point."
- The "About This Topic" section in each Prepare Instruction describes the conceptual development of the content in that topic. Where appropriate, this makes connections between conceptual development and procedural fluency. This section adds additional information to the TEKS alignment at the topic and lesson level in the "Standards Alignment" section and the "Scope and Sequence" and lesson-level alignment documents.
- The materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed. The Geometry Scope and Sequence provides the TEKS, indicating whether the standards are readiness or supporting, and includes a Topic Description that explicitly outlines how these standards are addressed throughout the topic. This detailed alignment ensures that both the conceptual understanding and procedural skills required by the TEKS are comprehensively covered in the lessons.

Questions and tasks include the use of concrete models and manipulatives, pictorial representation (figures/drawings), and abstract representations.

- Questions and tasks include the use of concrete models and manipulatives, pictorial representation (figures/drawings), and abstract representations, as appropriate for the content and grade level.
- Questions include pictorial and abstract representations as appropriate for the lesson. For example, in the Topic 5, Lesson 4, "Practice Problems" set, students must "put a dot in...Euler diagrams to illustrate the given statements." Statements include 1) *p* and *q* are true, 2) *q* is true and *p* is false, and 3) *p* and *q* are both false. The next problem is more abstract, allowing students to practice in various contexts: "Write the converse, inverse, and contrapositive of the following conditional statement. Tell whether each statement you write is true or false. If it is false, give a counterexample. If 3x – 5 = 10x + 9, then x = -2."
- Questions include using concrete models and manipulatives, pictorial representations (figures/drawings), and abstract representations. For a concrete representation example, in Topic 21, Lesson 1, "Student Activity Sheet," Question 10 directs students to "Draw three unique nets for a prism with a rectangular base. Cut out each net and fold it to make sure all the nets make the same prism." By cutting each net, students create a concrete model using a manipulative. As a pictorial model example, Question 9 directs students to "decide if [given nets] will fold to make a cube or not when given a series of nets." As an example of using abstract thinking, Question 8 directs students to compare "2-dimensional views [they] could represent with an orthographic projection of a 3-dimensional object."
- Tasks include concrete representations as appropriate for the lesson. For example, in Topic 19, Lesson 3, students use patty paper as a concrete representation to solve problems involving areas of shapes: "In this task, making a concrete model of the given image and manipulating the model will help students see relationships that may have been harder to see without the model. In this case, students make strategic use of Patty Paper as a geometric tool."
- Tasks include concrete, pictorial, and abstract representations. For example, Topic 23, Lesson 1 guides the teacher to "Use the animation to demonstrate the relationship between the volume of the pyramid and prism shown," then to "Put students in small groups to explore the relationship between the volume of other pairs of pyramids and prisms. Have each group select a prism and pyramid with the same base and height. You can also make some pyramids and prisms from cardstock for students to choose from. Rice is a good product to use for comparing the volume." It concludes, "Before showing page 8, have students compute the volume of the chocolate pyramid shown in panel 1 of the animation. Also, have students conjecture a formula for the volume of a pyramid based on the sugar-pouring demonstration."

Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts.

- Materials support students in connecting and creating concrete and representational models to abstract concepts. For example, in Topic 6, Lesson 2, students use multiple models to investigate the converse of the corresponding angle relationship, including manipulating sliders in a virtual model of parallel lines cut by a transversal and a concrete model using dry spaghetti. Students use both models to construct lines cut by a transversal so that a pair of corresponding angles has a specific measure assigned by the teacher.

- Materials include supports for defining and explaining concrete and representational models to abstract concepts. For example, in Topic 21, Lesson 3, the materials suggest, "Slices of a cube, and other solids, can easily be seen with water in solid models. If you have solids that can be filled with water, fill the solid about two-thirds full. Then tilt the object. In this case, you can't really change the angle of the plane, represented by the surface of the water, because of gravity, but you can change the angle that it intersects the solids. If students have trouble seeing the slices on the computer, try using the water models."
- Materials include supports for students in connecting, creating, defining, and explaining concrete models to abstract. For example, in Topic 21, Lesson 4, "Constructed Response 1: Part A," students use manipulatives such as "grid paper, ruler, and pencil" to "create a net of a prism with bases that are equilateral triangles." Students connect the abstract description to the concrete visual when creating the net from a description. In Part C, students define the "cross sections of [their] prism" and must explain their thought process. As a further example, in Topic 21, Lesson 5, Constructed Response 2, students learn how to use "isometric drawings to represent 3-dimensional objects." In Part A, students read one-point perspective drawings as 3-dimensional images modeled on a 2-dimensional plane by "Creat[ing] a drawing of a cube (hexahedron) using this technique" and "List[ing] the steps you followed to construct your drawing." Students use the method to connect the abstract concept of perspective drawing by creating a cube and then define and explain the abstract process in mathematical terms.
- The materials include opportunities for students to articulate emerging understanding of mathematical concepts and procedures through modeling, discussion, and practice. For example, in Topic 14, Lesson 5, teachers "Give students some background on the Hopewell culture. You can find images of some of the Hopewell historical sites on the internet through the National Park Service or the Ohio Historical Society...The Hopewell people were a thriving group of Native American populations...in the Ohio area...during the years 200 BC to 400 AD. The Hopewell are well known for the large, complex earthen mounds that they built. These geometric earthen enclosures were a complex and integrated system covering large amounts of land. For example, the Newark Earthworks originally covered more than four square miles. The positioning of the mounds was geometric in nature. Ask: What geometric relationships do you think Native Americans may have used? How do you think these geometric relationships relate to those used by the ancient Babylonians and Egyptians, such as the Pythagorean Theorem?"

Balance of Conceptual and Procedural Understanding

5.4	Development of Academic Mathematical Language	14/14
5.4a	Materials provide opportunities for students to develop their academic mathematical language using visuals, manipulatives, and other language development strategies.	**3/3**
5.4b	Materials include embedded guidance for the teacher addressing scaffolding and supporting student development and use of academic mathematical vocabulary in context.	**2/2**
5.4c	Materials include embedded guidance for the teacher 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.	**9/9**

The materials provide opportunities for students to develop their academic mathematical language using visuals, manipulatives, and other language development strategies. Materials include embedded guidance for the teacher addressing scaffolding and supporting student development and use of academic mathematical vocabulary in context. Materials include embedded guidance for the teacher 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.

Evidence includes, but is not limited to:

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

- The materials provide opportunities for students to develop a mathematical language using visuals. For example, in Topic 19, Lesson 3, students use visuals to reinforce vocabulary associated with special quadrilaterals as they draw a diagram of each and write its definition on an index card. Materials suggest posting the cards on the wall for students to use as a reference.
- Materials provide opportunities for students to develop academic mathematical language. For example, in Topic 12, Lesson 2, the students complete the following task: "Find examples of objects that we would say are similar in everyday language, but in fact are not mathematically similar. Describe the objects you found below."
- Materials provide opportunities for students to develop their academic mathematical language using manipulatives. For example, in Topic 11, Lesson 1, "Deliver Instruction," the materials caution teachers to "be very careful and overt about the language used to describe the images students create" in teaching the difference between a sketch, a drawing, or a construction. Students learn that different image types require different tools (manipulatives):

"an image made with no specific tools represent [in]accurate measurements...use nonspecific manipulatives to create a sketch," "...tools such as a ruler or a protractor to measure side lengths or angles" to create a drawing. For construction, students create "a mathematically precise drawing made with very specific tools" (manipulatives).

- Materials provide opportunities for students to develop mathematical language using other language development. For example, Topic 22, Lesson 1 states, "Students should be able to recognize prisms and cylinders from their work with three-dimensional objects in middle school mathematics. Use the animations on page 2 and page 3 to review vocabulary associated with prisms and cylinders. Emphasize the more formal language of the bases being in parallel planes. This allows for oblique prisms and cylinders, which may be new to students."
- The materials describe the development of mathematical vocabulary by first creating a need for the language through carefully designed tasks, visuals, and manipulatives where students read and listen to new words in context and then apply those words in their speaking and writing. In Topic 15, Lesson 1, Deliver Instruction, the teacher is guided to show an animation and have students define a polygon. Then, the students use a discussion of their findings to solidify the definition: "Show the image on the first panel of the animation on page 2. Ask students to consider the two groups of images. Ask: What title could you give each set of images? Explain your answer. What is a polygon? (Note: Ask students this before you play the first panel of the animation which shows a definition in the end caption. Push back on student definitions by showing a counterexample if the definition is not complete)."

Materials include embedded guidance for the teacher addressing scaffolding and supporting student development and use of academic mathematical vocabulary in context.

- Materials provide embedded "Language Strategy" guidance for teachers to scaffold the development and use of mathematical vocabulary in context. For example, in Topic 13, the materials provide guidance related to connections between mathematical vocabulary and language that students already know: "Try to make vocabulary connections for students whenever possible. For example, point out that the 'midpoint' lies on the 'middle' of the segment, 'midway' between the endpoints. It is important for all students that you spend time reinforcing the vocabulary in this topic. Keep a word wall on the board with definitions and diagrams to which all students can refer."
- Materials provide embedded Language Strategy guidance for teachers to support the development and use of mathematical vocabulary in context. For example, in Topic 11, Lesson 1, the materials guide teachers in clarifying language related to geometric tools: "From the beginning of this topic, it is important to be very careful and overt about the language used to describe the images students create. A sketch is an image made with no specific tools and does not necessarily represent accurate measurements. A drawing is more precise than a sketch and may use tools such as a ruler or a protractor to measure side lengths or angles. A construction is a mathematically precise drawing made with very specific tools."
- Materials include embedded guidance for the teacher addressing scaffolding student development and using academic mathematical vocabulary in context. For example, in Topic 25, Lesson 1, Deliver Instruction, after reading "the first paragraph of the text silently,

[students] discuss it with a partner," allowing students time to comprehend the content they read, including a new word: *diffusion*. For students unfamiliar with the word, materials direct teachers to scaffold by "Introduce the idea of diffusion from biology... [emphasizing] The main point is that surface area and volume relationships will play a key role in diffusion in cells." This scaffolds students who may not understand diffusion in a math sense but know the science/biology side.

- Materials include embedded guidance through a Language Strategy to support student development and the use of academic mathematical vocabulary in context. For example, in Topic 16, Lesson 2, Deliver Instruction, the materials guide the teacher to divide students into groups and assign each group a specific situation from the assignment. For students who "need help with some of the vocabulary in some of the situations," materials guide teachers to support students by "Help[ing] each group with the language in its assigned situation and make each group responsible for clarifying those terms to the rest of the class as they share the situation." Through this embedded guidance, materials give teachers a method of supporting the development of and use of academic mathematical vocabulary by directly guiding them to a correct definition and allowing them to explain their definition to the class as a whole.
- Materials provide embedded guidance for teachers in the scaffolding, development, and use of academic mathematical vocabulary in context, as found in Topic 22, Lesson 3: "As you go through the animation, ask: What is the radius of a circle inscribed in a 4 × 4 square? What is the area of that circle? How many 1 cm circular layers are needed to make a cylinder with a volume close to 64 cubic cm? Can you generalize Dee's process of accumulating layers to write a formula for the volume of a cylinder?"

Materials include embedded guidance for the teacher 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.

- Materials provide opportunities for students to hear, refine, use, and develop math language and academic vocabulary in conversations with other students. For example, in Topic 7, Lesson 2, students work with a partner to write a "good definition of a triangle." The materials guide the teacher: "As they develop a definition, ask them to read it aloud. If something is missing in the definition, ask another student if they could draw a counterexample on the board. As a class, discuss the definition of a triangle. Use this example as an opportunity to emphasize the importance of precision of language in geometry."
- Materials include embedded guidance for teachers to support syntax and discourse in mathematical conversations by including "Support for ELL/other special populations" notes. For example, in Topic 2, Lesson 1, the materials include guidance for using sentence stems to help teachers support academic conversations: "When students are justifying and explaining solutions, provide sentence stems such as 'I believe that...,' or 'First I saw that...,' or 'I know

that...,' and 'This makes sense because....' Sentence stems such as this one also help some students with learning differences organize their thinking."

- Materials include embedded guidance for the teacher to support student responses using exemplar responses to questions and tasks. For example, in Topic 12, Lesson 9, "Constructed Response 3 Key" is embedded in the course materials as a teacher-facing resource. Teachers can use the Key as an exemplar response support or as support for helping guide student responses to both the tasks and questions in the Constructed Response 3. This pertains to student conversations, discourse, and vocabulary because teachers can use the exemplar responses in the Key to guide their questioning and conversations with students.
- Materials include embedded guidance for using academic vocabulary, syntax, and discourse in mathematical conversations. For example, Topic 22, Lesson 2 states, "After all groups have finished their work, have group members form new groups so that no two members are in the same new group. These new groups will be jig-saws of the original groups. In the new groups, have each student share their responses and reasoning. Group members should provide constructive feedback as needed. Have students return to their original groups to evaluate the feedback they were given and make any necessary modifications to their work before turning it in."

Balance of Conceptual and Procedural Understanding

5.5	Process Standards Connections	6/6
5.5a	Process standards are integrated appropriately into the materials.	**1/1**
5.5b	Materials include a description of how process standards are incorporated and connected throughout the course.	**2/2**
5.5c	Materials include a description for each unit of how process standards are incorporated and connected throughout the unit.	**2/2**
5.5d	Materials include an overview of the process standards incorporated into each lesson.	**1/1**

Process standards that are integrated appropriately into the materials. Materials include a description of how process standards are incorporated and connected throughout the course. Materials include a description for each unit of how process standards are incorporated and connected throughout the unit. Materials include an overview of the process standards incorporated into each lesson.

Evidence includes, but is not limited to:

Process standards are integrated appropriately into the materials.

- The "Texas Geometry Scope and Sequence" outlines the process standards and their integration throughout the course materials. Students will acquire and demonstrate their mathematical understanding through the use of mathematical processes. The materials state, "These processes should become the natural way in which students come to understand and do mathematics. While, depending on the content to be understood or on the problem to be solved, any process might be seen or applied, some processes may prove more useful than others."
- The materials include the integration of the process standards into the lessons. The "Course Rationale" document states, "The Agile Mind Texas Geometry course also provides rich contexts for engaging with the process standards. Geometry problems and models appear in the world around us and geometry gives us the language to communicate about our world. Tools, including tracing paper, ruler, compass, protractor, and dynamic geometry software encourage discovery, conjecture, justification, making connections, and reasoning. Proof and logical arguments are evident in both the content and process standards, making geometry an ideal context for displaying, explaining, justifying, and communicating mathematical ideas and making mathematical arguments using precise language. The various types of proofs, including two-column, coordinate, flowchart, and paragraph proofs, provide a structure for students to organize, record, and communicate their ideas. The problem-solving model connects well to students' learning to create mathematical proofs, as well as solving rich, relevant geometric problems in the real world."
- The document includes an alignment to the process standards, such as TEKS G.1, ensuring that these standards are addressed throughout the lessons.

- The "Deliver Instruction" materials list "Goals and Objectives" for students that correspond with the use of the mathematical process standards. For example, Topic 1, Lesson 2 states, "Describe points, lines, and planes using physical models in our world." This objective incorporates TEKS G.1A.

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

- According to the Scope and Sequence located in "Professional Support," "Throughout this Geometry course, students use mathematical processes to acquire and demonstrate mathematical understanding." A list of process standards follows this statement. The materials explain how the process standards are incorporated throughout the course.
- The materials include a description of process standard incorporation in the Course Rationale, illustrating the connections throughout the course. The Course Rationale document states, "The Agile Mind Texas Geometry course also provides rich contexts for engaging with the process standards. Algebraic problems and models appear in the world around us, and this course gives us the language to communicate about our world. The course creates a natural opportunity for students to understand, experience, and do mathematics. Mathematical reasoning, effective communication with attention to precision of language, making use of the structure of mathematics, and modeling are key components of this program."

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

- The Scope and Sequence lists all process standards on the first page and details how each unit is addressed throughout the unit.
- The materials include the "Year at a Glance" document that only addresses where content standards are covered within a given unit and not the process standards.

Materials include an overview of the process standards incorporated into each lesson.

- The materials include an overview of the process standards incorporated into lessons. In Topic 12, Lessons 3, 5, and 6 include a "Mathematical processes & practices" bullet. For example, the bullet in Lesson 5 states, "As students are working, reinforce the problem-solving model. Ask them to share their plan or strategy with you and how they are monitoring their work. Ask them to justify their solution and evaluate the reasonableness of their solution."
- The "Lesson Standards and Alignment" document provides teachers with a lesson-by-lesson TEKS alignment. In Topic 2, materials address TEKS "G.03.B, G.03.C, G.03.D," and from previous contents, "8.10.A, 8.10.C." The materials incorporate both the content and process standards of the TEKS into each lesson.

- The Scope and Sequence lists all process standards on the first page and details how each unit is addressed throughout the unit. It states, "Throughout this Geometry course, students use mathematical processes to acquire and demonstrate mathematical understanding…These processes should become the natural way in which students come to understand and do mathematics." Additionally, the materials include the Geometry Lesson Alignment for Texas document which illustrates alignment to content and process standards.
- The materials include lesson alignment documents that clarify the alignment of process standards to each lesson, as well as a narrative description for each topic. These descriptions explain how the process standards are incorporated into each lesson.

Productive Struggle

6.1	Student Self-Efficacy	15/15
6.1a	Materials provide opportunities for students to think mathematically, persevere through solving problems, and to make sense of mathematics.	**3/3**
6.1b	Materials support students in understanding, explaining, and justifying that there can be multiple ways to solve problems and complete tasks.	**6/6**
6.1c	Materials are designed to require students to make sense of mathematics through doing, writing about, and discussing math with peers and teachers.	**6/6**

The materials provide opportunities for students to think mathematically, persevere through solving problems, and to make sense of mathematics. Materials support students in understanding, explaining, and justifying that there can be multiple ways to solve problems and complete tasks. Materials are designed to require students to make sense of mathematics through doing, writing about, and discussing math with peers and teachers.

Evidence includes, but is not limited to:

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

- Materials provide opportunities for students to think mathematically, persevere through solving problems, and make sense of mathematics while completing practice problems from the Topic 6, Lesson 4, "Student Activity Sheet" document. Teacher notes for "Lesson Activities" state, "This lesson is focused on proof and will help students work on students' practice of reasoning abstractly and constructing arguments. Encourage students to persist through these tasks. Encourage collaboration among students by having them ask questions to another group before coming to the teacher. Allow for some productive struggle, but continue to provide support and encouragement. Remind students that sometimes struggling through problems produces the most learning!"
- Materials provide opportunities for students to think mathematically, persevere through solving problems, and make sense of mathematics. An example of an opportunity to think mathematically can be found in the "Constructed Response 3" section located in Topic 8, Lesson 5, following the "Deliver Instruction" section. Students "find the equation of the Euler line for a given triangle," work in groups as a "review of linear functions and coordinate geometry," and "strategize with [their] group how they can determine the equation." Materials prompt teachers to "Encourage students to look for the simplest algebraic solutions" in making sense of mathematics. Materials provide guiding questions to help students persevere through problem solving, including but not limited to, "What points does a median pass through?" [The midpoint of a side and the opposite vertex]. "What point does a perpendicular bisector pass through?" [The midpoint of one side of the triangle]. "How is the slope of the perpendicular bisector related to the slope of the side of the triangle?" [The slopes are negative reciprocals].

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

- Materials support students in understanding and explaining that there can be multiple ways to solve problems and complete tasks. For example, in Topic 14, Lesson 6, students work in groups to measure the height of a flagpole using either a trigonometry method, a special right triangle method, or a similar triangle method. Once groups complete their work, the materials suggest that students "form new groups of three so that each new group has a member that can represent a different method…Have the students explain their methods in the new group. Walk around and monitor the discussions in the groups. Pose questions to ensure understanding and clarity."
- Materials support students in understanding, explaining, and justifying that there can be multiple ways to solve problems. For example, in Topic 22, Lesson 5, "Deliver Instruction," in the Lesson Activities section, students solve a problem involving packaging and determine the area of a regular hexagon, "choos[ing from] a variety of ways to deal with the regular hexagon." Students then "share the solution strategies they used," followed by a teacher-lead "Discuss[ion of] the variations in these strategies that lead to the same answer."
- Materials support students in understanding and explaining that there can be multiple ways to solve problems and complete tasks. For example, Topic 15, Lesson 5 states, "Point out to students that there is often more than one correct way to prove something about a shape. Notice that now that students have shown that the angles of quadrilateral ABCD are right angles, they can verify that the opposite sides of the quadrilateral are parallel using the distance formula. Recall that the definition of parallel lines states that two lines are parallel if the perpendicular distance between any two points on the lines is the same. So, in this case, because segment AD and segment CB are perpendicular to segment CD and segment AB and AD = CB, you can say that segment CD is parallel to segment AB. This is another way to verify parallelism beyond showing that the slopes of the lines are the same. Again, one method may be more efficient, but both methods are mathematically valid arguments."

Materials are designed to require students to make sense of mathematics through doing, writing about, and discussing math with peers and teachers.

- Materials require students to make sense of mathematics by discussing math with peers. For example, in Topic 26, Lesson 1, the materials prompt teachers to "Use the last paragraph on page 6 to prompt small group discussion about the need for Euclidean geometry. Have students discuss the question in small groups, then share some responses with the class, then as a small group, respond to the question on their activity sheets."
- Materials are designed to require students to make sense of mathematics through doing, writing about, and discussing math with peers and teachers. For example, in Topic 13, Lesson 4, Deliver Instruction, in the "Constructed Response 2" materials, students work in groups to complete the Constructed Response with their peers to determine placement of cell towers within the task's parameters, discuss strategies and practices to complete the task by having

to "Support [their] proposal with distances and explain the reasoning behind [their] recommendations." Materials direct teachers to facilitate "summariz[ing] what [students] have learned" as a class.

- As an example of students writing about and discussing math with their peers, Topic 7, Lesson 2, "Student Activity" materials guide the teacher to "Ask students to report on their findings from the activity on the previous page. Encourage student pairs to come to a presentation computer to show examples of triangles they were not able to form. If students in the class disagree, have them show counterexamples. Students may want to revise their responses to question 3 on their activity sheets based on the class discussion."

Productive Struggle

6.2	Facilitating Productive Struggle	10/10
6.2a	Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications.	6/6
6.2b	Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on student responses and anticipated misconceptions.	4/4

The materials support teachers in guiding students to share and reflect on their problem–solving approaches, including explanations, arguments, and justifications. Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on student responses and anticipated misconceptions.

Evidence includes, but is not limited to:

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

- Materials support teachers in guiding students to reflect on their problem-solving approaches, including explanations and justifications. For example, a Gallery Walk in Topic 4, Lesson 4 (1) helps groups become familiar with the work of their peers, and (2) allows 2-way feedback on work prior to revisions.
- Materials guide teachers in sharing their problem-solving approaches, including explanations and justifications. For example, in Topic 13, Lesson 5, students work in pairs to find the missing sides of a figure. Materials guide teachers to "ask [student pairs] to share their responses and reasoning with another pair of students."
- Materials in the "Deliver Instruction" section of Topic 19, Lesson 4, provide opportunities for students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications. After receiving the task for the day, students "copy the image onto Patty Paper and cut out the three figures X, Y, and Z... manipulate the three figures and make observations," while the teacher asks, "What observations can you make about the three figures?... How can you verify that triangles Y and Z are similar?" Materials next have students in pairs to share and argue their approach before presenting their work to other groups, with both groups critiquing the others' approaches, noting that "critiquing the work of other students, [as well as presenting to other students], is often uncomfortable,'' yet provides an opportunity to share, explain, and justify approaches as they are presented. The activity concludes with questions provided to the teacher to guide students to reflect on their approach and then explain and justify their response: "What is the perimeter of the square?" "Why are the perimeters of the rectangle and the square not the same?" "For any rectangle with a fixed area, how could you minimize the perimeter of the rectangle?" [Make the rectangle a square].
- As a further example, Topic 13, Lesson 3 states, "Ask the students to present and explain their solutions and discuss their reasoning. Ask students to use the drawing tool animation to help

present their solutions...Be sure to emphasize the students' use of the Pythagorean Theorem in their solutions."

- Another example can be found in Topic 17, Lesson 2, Deliver Instruction: "Classroom strategy... have students work in pairs or groups of three on a computer. Once all the small groups have finished...Have...two small groups share their work with each other. Make sure that students in both groups take notes on their activity sheets on the investigation that they were not assigned. Monitor these discussions and do not allow students to simply copy the activity sheet answers from the group members. This should be a discussion that then allows the groups to complete the activity sheet."

Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on student responses and anticipated misconceptions.

- Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on student responses. For example, the materials in Topic 2, Lesson 2, suggest that teachers use the questions and check buttons in the lesson activities to help students analyze their constructions after a patty paper exploration. The first question and check state, "What does your Patty Paper exploration suggest about [segment] PM and [segment] P'M?" "PM and P'M are congruent. Verify that these segments are congruent by measuring or folding." The second question and check state, "What appears to be true about ∠PMA and ∠P'MA?" "∠PMA and ∠P'MA are both right angles. Verify that these angles are right angles using a corner of a piece of Patty Paper."
- Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on student responses. For example, the materials in Topic 12, Lesson 3, state, "As students interact with this animation, have them make predictions about the dilated line and ratios before hitting the 'Show' buttons. Encourage students to state their predictions to classmates, either in small groups or as part of a whole class discussion. Students should justify their own predictions and defend their reasoning as other students question their predictions. This type of peer interaction develops the reasoning skills of students both while they defend their own predictions and while they question the predictions of their classmates. The animation will allow students to easily show counterexamples to incorrect predictions."
- Materials guide teachers in responding to anticipated misconceptions. For example, the materials in Topic 10, Lesson 4 guide the teacher to "Have student pairs discuss the sample student work shown. This example points out a common mistake students make when applying the Hinge Theorem. In this example, the hypothesis of the Hinge Theorem is not met. Ask student pairs to share their response to the question and either support or refute the sample student work."
- Materials provide prompts and guidance to assist teachers in providing explanatory feedback based on anticipated misconceptions. For example, in Topic 1, Lesson 2, "Deliver Instruction," the "Lesson Activities" section guides teachers to use the following prompts to address the misconception about the length of rays and lines: "The examples in the animation are only of angles and line segments. To prevent common misconceptions, ask: Can you make a statement of congruence about two rays or two lines? Why or why not? [Rays and lines do not

have a size, or measure, since they continue on in one or both directions indefinitely. Since they don't have a size, the definition of congruence cannot be applied to lines and rays]."