IMRA Review Cycle 2024 Report

Publisher Name	Program Name
Kiddom	*Texas Math: Algebra II Powered by Kiddom*
Subject	**Course**
Mathematics	Algebra II

Texas Essential Knowledge and Skills (TEKS) Coverage: **49.09%**

English Language Proficiency Standards (ELPS) Coverage: **61.54%**

Quality Review Overall Score: **208 / 227**

IMRA Reviewers

Flags for Suitability Noncompliance 9

Indicator	Count of Flags
1. Prohibition on Common Core	**9**
2. Alignment with Public Education's Constitutional Goal	**0**
3. Parental Rights and Responsibilities	**0**
4. Prohibition on Forced Political Activity	**0**
5. Protecting Children's Innocence	**0**
6. Promoting Sexual Risk Avoidance	**0**
7. Compliance with the Children's Internet Protection Act (CIPA)	**0**

Flags for Suitability Compliance 0

Indicator	Count of Flags
Alignment with Public Education's Constitutional Goal, 2.1.1	**0**
Promoting Sexual Risk Avoidance, 6.2	**0**

Alleged Factual Errors 3

Public Feedback

Flags for Suitability Noncompliance 0

Rubric Indicator	Count of Flags
1. Prohibition on Common Core:	**0**
2. Alignment with Public Education's Constitutional Goal	**0**
3. Parental Rights and Responsibilities	**0**
4. Prohibition on Forced Political Activity	**0**
5. Protecting Children's Innocence	**0**
6. Promoting Sexual Risk Avoidance	**0**
7. Compliance with the Children's Internet Protection Act (CIPA)	**0**

Alleged Factual Errors 0

Public Comments 0

Quality Review Summary

Rubric Section	Quality Rating
1. Intentional Instructional Design	53 / 53
2. Progress Monitoring	25 / 28
3. Support for All Learners	27 / 32
4. Depth and Coherence of Key Concepts	22 / 23
5. Balance of Conceptual and Procedural Understanding	56 / 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.
- 2.2 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.
- 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.
- 4.3 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.
- 5.5 Process Standards Connections: Materials integrate process standards appropriately, and provide descriptions of how they are incorporated and connected throughout the course, within each unit, or 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

- 2.1 Instructional Assessments: Materials do not include teacher guidance to ensure consistent administration of instructional assessments. Diagnostic and summative assessments are not aligned to the TEKS.
- 3.1 Differentiation and Scaffolds: Materials include teacher guidance for differentiated instruction for students who have demonstrated proficiency in grade-level content and skills
- 3.2 Instructional Methods: Materials do not include prompts or guidance to support teachers in modeling the concepts to be learned explicitly.
- 3.3 Support for Emergent Bilingual Students: Materials do not include teacher guidance on providing linguistic accommodations for various levels of language proficiency. Implementation guidance to support teachers in effectively using the materials in state-approved bilingual/ESL programs is not provided.
- 4.2 Coherence of Key Concepts: Materials do not demonstrate coherence with future courses in the scope and sequence or across units. The materials do not connect what will be learned in future courses.

- 5.3 Balance of Conceptual Understanding and Procedural Fluency: Materials do not explicitly state how the conceptual and procedural emphasis of the TEKS are addressed, do not include questions and tasks that use concrete models and manipulatives for questions and tasks, and do not support students in defining concrete to abstract concepts.
- 5.4 Development of Academic Mathematical Language: Materials do not provide opportunities for students to develop academic mathematical vocabulary in context using manipulatives.

Summary

IM360 Texas Math powered by Kiddom is a 9–12 mathematics program with a problem-based curriculum. The Algebra 2 curriculum provides comprehensive units that include a variety of instructional routines, activities, and instructional supports where teachers and students are actively involved in the teaching and learning of mathematics. Additionally, the program includes resources for formative and summative assessments, extension activities, and family support material for each unit.

Campus and district instructional leaders should consider the following:

- While lessons in the product feature a standard design that includes a warm-up, activities, and cool-down to engage students' prior knowledge and connect to real-world contexts, in many places, the lessons are not robust enough to meet TEKS standards and do not intentionally guide teachers to connect the mathematics process standards with content standards. Materials include lessons/units beyond Algebra 2 content and are missing lessons/units to cover Algebra 2 TEKS fully.
- The program includes materials that support emergent bilingual students and students with disabilities. However, the instructional guidance only covers support for some learners, such as those with deficiencies in prior knowledge. While materials include a variety of questions for teachers to assess student learning, more questioning would guide teachers to scaffold activities for learners who may have gaps in their prior knowledge. Novice teachers may require additional support and guidance to assist learners in moving from a concrete to a more abstract understanding of mathematics.

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**

Materials include a scope and sequence outlining the TEKS, ELPS, concepts, and knowledge taught in the course. Materials include a suggested pacing guide with suggested pacing for various instructional calendars for varying numbers of instructional days. Materials include an explanation for the rationale of unit order and how concepts to be learned connect throughout the course. Materials include guidance and protocols for unit and lesson internalization. Materials include resources and guidance to support administrators with implementing the materials as designed. Materials do not include resources and guidance to support instructional coaches with 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" subsection located in the "Course Guide" tab of the "Course Overview" section. Additionally, in the "IMRA Rubric Submission Tool Math 9–12, there is a document called, "Copy of Scope and Sequence Texas" that outlines the TEKS and ELPs taught in the course.
- Materials include a year-long scope and sequence within the "Course Guide" under the "Course Overview" in the online teacher materials for the Algebra 2 course. The scope and sequence page includes a pacing guide and a dependency diagram illustrating the alignment between Algebra 1, Geometry, and Algebra 2 course units.
- The pacing guide in the scope and sequence outlines the suggested order for teaching the seven units of Algebra 2 and the recommended number of days for each unit. The "Course Narrative" explicitly describes the knowledge taught in each unit. The narrative starts with a brief overview of the course and its structure, followed by an example of a student reference chart, and concludes with a unit-by-unit walkthrough of the Algebra II 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, and 210).

- The materials include a suggested pacing calendar found in the supplementary Texas Scope and Sequence. The pacing calendar is designed for 132 days of initial instruction and provides teachers with an optional additional 21 days for extension, review, assess, and reteach days. With the addition of these days, the suggested pacing is 153 days. The scope and sequences also outline that each lesson is allotted 60 minutes.
- The instructional materials also include an Adaptation Guide that provides suggestions for lessons to add or lessons to remove or modify. This guide also includes a modified plan for each unit as well as a category list for lessons ranked by priority — high priority, medium priority, and low priority.

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

- The "Narrative" section found under the "Course Guide" provides an explanation for the rationale of unit order. For example, the narrative states "Students begin the course with a study of sequences, which is also an opportunity to revisit linear and exponential functions." to help teachers understand the reasoning for starting the course with this unit.
- Materials include an explanation for how concepts to be learned connect throughout the course. For example, the narrative states "Prior to this unit, students have worked with a variety of function types, such as polynomial, radical, and exponential. The purpose of this unit is for students to consider functions as a whole and understand how they can be transformed to fit the needs of a situation, which is an aspect of modeling with mathematics." In addition, at the start of each unit, the unit narrative establishes connections to prior knowledge and outlines the topics to be covered within the unit.

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

- Materials include an adaptation guide at the beginning of each unit. The adaptation guide includes essential prior concepts that need review for this unit, a brief description of how to approach teaching this unit, a modified plan for the unit if needed, and a list of standards categorized into high-priority, medium-priority, and low-priority.
- Each unit features a section-level planning guide designed to assist teachers with "I can..." statements, as well as activity and assessment suggestions that are categorized under headings: explore, play and discuss, deep dive, synthesize and apply, ongoing practice, and anytime resources.

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

- On the Support page of the Kiddom website, there are 19 articles available for administrators and instructional coaches that provide information and resources to help navigate Kiddom for their school or district. Categories for resources and guidance include Teaching With Kiddom, Features, Customizing Kiddom, Grading & Reporting, Kiddom Integrations, Students and Families, and Troubleshooting. For example, the article titled "What are Admin Assignment View Reports?" provides administrators with guidance on the student achievement report. Specifically, Assignment View reports "equip school and district leaders, like you, with tools and data to make better instructional decisions and resource allocation decisions."
- Materials include resources to support administrators and instructional coaches with implementing the materials as designed. The "Teacher Guide," located in the Course Overview, provides resources for administrators and instructional coaches to support the implementation of the materials. The "Typical IM Lesson" subsection explains the four phases of a typical lesson: warm-up, instructional activities, lesson synthesis, and cool-down. The How to Use These Materials subsection further breaks down the three phases of a typical activity: launch, student work time, and activity synthesis.
- The materials include resources to support administrators and instructional coaches, such as video training. The materials state, "As part of Kiddom's NEW Admin Insights Reporting Package, we now offer Usage Reports! These reports allow district and school leaders to gain insight into Kiddom activation and usage across schools. This video link provides materials that include resources and guidance to support administrators and instructional coaches in implementing the materials as designed."

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 student.	**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 supports for families in 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.

- The "Course Guide" contains a "Narrative" section with unit overviews providing the necessary background content knowledge for effective teaching of each concept. For example, the narrative states "Embedded throughout the first half of the unit are opportunities for students to practice multiplying polynomials and some optional review of factoring. This practice is meant to help pave the way for understanding division, which in this unit focuses on dividing a polynomial written in standard form by a suspected factor for the purposes of rewriting the equation in factored form." In Unit 3: Complex Numbers and Rational Exponents, the narrative references academic vocabulary from previous learning and what they know about exponents and radicals to extend exponent rules to include rational exponents, and when introduced to imaginary and complex numbers, "the number line is renamed the *real* number line."
- The materials provide access to a set of academic terms within the resources. At the beginning of the course and throughout the units, the materials contain Glossary Terms. This includes a slide deck providing "a complete grade-level list including word, definition, and picture for all vocabulary words introduced in the IM Math curriculum." However, academic vocabulary is not clearly provided in the unit overviews.

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

- Each unit overview includes family support materials in English and Spanish. These materials can be accessed online or in PDF form and include lesson videos. The materials provide a description of problem-based curriculum, support for learners, and ideas to encourage learners to be successful.

- The materials contain resources to support families with information to assist their students in learning in English and in Spanish. Family Support Materials in each unit provide an overview of student learning objectives and suggestions for ways caregivers can support the unit learning at home. Additionally, caregivers can access their student's progress.

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 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 that include daily objectives, questions, tasks, materials, and instructional assessments required to meet the content and language standards of the lesson. Materials do not 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.

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.

- The materials include comprehensive lesson plans that encompass daily objectives, questions, tasks, materials, and instructional assessments necessary to meet the content and language standards of the lesson. Unit overviews include a unit narrative, lesson planning tools, activities, and lesson links. A "Section Level Planning Guide" link is included with each unit to outline lesson objectives, activity suggestions, assessment suggestions, ongoing practice, and anytime resources.
- Structured lesson plans are provided in the "Unit at a Glance" PDF. It includes learning goals, targets, preparations, materials, student tasks, questions, instructional routines, and recommendations for responding to student thinking.
- The detailed lesson plans are found within each lesson link. These plans include instructional routines, an activity narrative, a launch activity, and suggestions to advance student thinking and synthesize the learning. Each part of the lesson provides specific information about the content and language of the lesson, step-by-step instructions for teacher actions, and questions for teachers to ask along with possible student responses.
- Lesson plans include comprehensive lists of materials, a structured approach for teaching the lesson, instructional routines, activities, and formative assessment questions. They feature a

bulleted list outlining the phases of the lesson, each with specified time frames, guiding questions, and required materials. Additionally, lesson plans detail objectives, questions, tasks, and materials aimed at developing procedural skill fluency and application. They include subsections with tasks and activities, providing explicit instructions for teacher facilitation. Each lesson concludes with a Cool-down and Cumulative Practice Set serving as instructional assessments.

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

- The materials include a "Course Overview" outlining the suggested timing for each lesson component. The "Teacher Guide," located in the Course Overview, suggests timing for three of its four lesson components: (1) Warm-up (5–10 minutes), (2) Lesson Synthesis (5–10 minutes), and (3) Cool-down (approximately 5 minutes). Within each unit, the materials include lesson-specific guidance for the fourth component, (4) Student Activities, with the Teacher Guide stating that "Each lesson plan is designed to fit within a class period that is at least 45 minutes long."
- Lessons include suggested timing for lesson components. For example, in Unit 2, Lesson 1, the materials suggest 5 minutes for the warm-up, 20 minutes for the first activity, 10 minutes for the second activity, and 5 minutes for the cool-down. The Teacher Guide suggests 5–10 minutes for the lesson synthesis component.

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

- The lesson overview at the beginning of each lesson includes required materials as necessary for teachers and students. For example, in "Unit 4, Lesson 11," the required materials are "scientific calculators" and "pre-printed cards, cut from copies of the blackline master." In this same lesson overview, a description for teacher preparation states "When printing and cutting up cards from the blackline master, decide whether to use only the first 20 cards, which contain only logarithms with integer values, or to also include the last 10 cards marked "challenge," which contain logarithms with non-integer values. Provide students with access to scientific calculators during the last activity and the cool-down."
- In the student-facing platform, students access required lesson materials once the teacher has assigned the lesson.

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

- Materials provide guidance for teachers to evaluate student responses and opportunities to extend and enrich student learning with optional activities for the lesson. Lesson components include practice questions that connect to the student activity. The "Section Level Planning Guide" included in the unit overview provides resources for ongoing and additional practice. "Are You Ready for More?" sections are given following select lesson activities and are

positioned after formative assessment questions, such as in "Unit 7, Lesson 14, Component 14.4."

- In the "How to Use These Materials" section of the "Teacher Guide" it states "Select classroom activities include an opportunity for differentiation for students ready for more of a challenge. We think of them as the 'mathematical dessert' to follow the 'mathematical entrée' of a classroom activity."

Progress Monitoring

2.1	Instructional Assessments	21/24
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.	**2/2**
2.1c	Materials include teacher guidance to ensure consistent and accurate administration of instructional assessments.	**1/2**
2.1d	Diagnostic, formative, and summative assessments are aligned to the TEKS and objectives of the course, unit, or lesson.	**4/6**
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 accurate administration of instructional assessments. Materials do not include teacher guidance for consistent administration of instructional assessments. Diagnostic, formative, and summative assessments are aligned to the objectives of the unit or lesson. Formative assessments are aligned to the TEKS of the course. Diagnostic and summative assessments are not aligned to the TEKS of the course. 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.

- Materials include various instructional assessments at the unit level, including diagnostic, formative, and summative assessments, with varying tasks and questions. The "Assessment" section of the "Teacher Guide" states "Each unit begins with a diagnostic assessment ('Check Your Readiness') of concepts and skills that are prerequisite to the unit as well as a few items that assess what students already know of the key contexts and concepts that will be addressed by the unit." In "Unit 4," the "Check Your Readiness" assessment has both tasks (numbers two, three, four, and six) and questions (numbers one and five.) The "Teacher Guide" also states "Each unit includes an end-of-unit written assessment that is intended for students to complete individually to assess what they have learned at the conclusion of the unit. Longer units also include a mid-unit assessment."
- Materials include formative assessments at the lesson level with varying types of tasks and questions. Formative questions are found at the end of each lesson in the "Lesson Synthesis" section. Formative tasks are included in different student-facing sections of the lesson. The "Assessment" section of the "Teacher Guide" states "Each lesson includes a cool-down

(analogous to an exit slip or exit ticket) to assess whether students understood the work of that day's lesson. Teachers use this as a formative assessment to provide feedback or to plan further instruction."

- At the end of each unit is the end-of-unit-assessment which has a specific length and breadth intended to gauge student's understanding of key concepts of a unit. Under "Assessments, Learning Goals and Targets," it states that problem types include multiple-choice, multiple responses, short answer, restricted constructed response, and extended response, with vary levels of depth and complexity.

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

- Materials include diagnostic and summative assessments at the unit level with varying types of tasks and questions. The "Assessment" section of the "Teacher Guide" states "Each unit begins with a diagnostic assessment ('Check Your Readiness') of concepts and skills that are prerequisite to the unit as well as a few items that assess what students already know of the key contexts and concepts that will be addressed by the unit." In "Unit 4," the "Check Your Readiness" assessment has both tasks (numbers two, three, four, and six) and questions (numbers one and five.) The "Teacher Guide" also states "Each unit includes an end-of-unit written assessment that is intended for students to complete individually to assess what they have learned at the conclusion of the unit. Longer units also include a mid-unit assessment." Units do not include formative assessments.
- Materials include formative assessments at the lesson level with varying types of tasks and questions. Formative questions are found at the end of each lesson in the "Lesson Synthesis" section. Formative tasks are included in different student-facing sections of the lesson. The "Assessment" section of the "Teacher Guide" states "Each lesson includes a cool-down (analogous to an exit slip or exit ticket) to assess whether students understood the work of that day's lesson. Teachers use this as a formative assessment to provide feedback or to plan further instruction." Lessons do not include diagnostic or summative assessments.

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

- Materials include teacher guidance to ensure accurate administration of instructional assessments. Each unit begins with a diagnostic assessment covering prerequisite knowledge and previewing upcoming concepts. This is followed by instructional tasks and practice questions that offer opportunities for misconceptions to be addressed through multiple lessons. The unit concludes with an end-of-unit assessment to gauge overall learning. Each assessment provides guidance and rubrics to evaluate student responses.
- Materials lack clear guidance on how to consistently administer assessments. Materials do not give teachers guidance on timing or conditions for the various instructional assessments to ensure fairness and equal opportunity for all students.

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

- Diagnostic and summative assessments are aligned to the objectives of the unit. Diagnostic assessments at the beginning of the unit assess prerequisite knowledge so teachers know how to proceed through unit objectives. Summative assessments are then given at the end of the unit to assess how students have progressed through the learning objectives.
- Formative assessments are aligned to the objectives of the lesson. The "Unit at a Glance" PDF provides alignment of cool-downs (formative assessments) to lesson and unit objectives. Objectives in the online materials are aligned to common core standards and are not part of the Algebra 2 course outlined by the TEKS.
- The product folder includes a shared Google sheet that outlines how formative assessments are aligned to the TEKS of the Algebra 2 course. TEKS alignment is not included for diagnostic or summative assessments.

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

- Instructional assessments include standards-aligned items at varying levels of complexity. For example, the end-of-unit assessments primarily consist of multiple-choice items allowing students to demonstrate mastery of unit objectives in a structured format. Additionally, these assessments include constructed response items to articulate their knowledge and reasoning in a more detailed and open-ended format. In addition to items aligned to Algebra 2 standards, materials include assessment items with sequences, statistics, and trigonometry content. Formative assessments within the lessons provide additional levels of complexity by encouraging students to communicate their ideas clearly and justify their reasoning. For example, in "Unit 3, Lesson 17, Component 17.3," the "Student-Facing Task" and "Are You Ready for More" sections present tasks and questions that require students to compare and contrast, analyze, and make predictions.
- Instructional assessments include standards-aligned items with more than two levels of complexity. For example, the "Unit 3, End-Of-Unit Assessment" has items at the recall level, the skill or concept level, and the strategic thinking level.

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**

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

- Instructional assessments and scoring information provide guidance for interpreting and responding to student performance. A rubric is provided for constructed responses in mid-unit and end-of-unit assessments. For example, in the "Unit 3, End of Unit Assessment" question 7b, the rubric describes student responses in tiers. A tier one response indicates "work is complete and correct," a tier two response indicates "good conceptual understanding and mastery, with either minor errors or correct work lacking sufficient explanation or justification," a tier three response indicates "significant errors in work, demonstrating a lack of conceptual understanding or master," and tier four indicates that student work "includes major errors or omissions that demonstrate a lack of conceptual understanding and mastery."
- The "Teacher Class Dashboard" in the "Online Demo Class Reports" offers further guidance to teachers to interpret student performance. These reports assist teachers in monitoring student progress over time, tracking student growth by mastery level, and analyzing class and individual performance on specific standards.

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

- The materials provide guidance on using tasks and activities to address student performance trends in assessments. For example, the "Unit 4 Diagnostic Assessment" includes a note for evaluating responses, and "Unit 4, Lesson 11" has a "responding to student thinking" section that guides teachers on reviewing lessons with students and providing additional support.
- The "Assessment" section in the "Teacher Guide" offers intervention recommendations for diagnostic assessments and cool-downs. This section states "What if the feedback from a

cool-down suggests students haven't understood a key concept?" A list of four strategies is given to address this question. For example, one strategy is "Give each student brief, written feedback on their cool-down that asks a question that nudges them to re-examine their work. Ask students to revise and resubmit."

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

- Materials include tools for students to track their own progress and growth via their data dashboard. According to the "Student Help: What Do My Reports Mean?" document, "On the top of the reports page, you can see your Class Grade Average. This is your overall grade for the class. Next, you can see your Class Standard Mastery. You can think of Standards like goals that are monitored in class."
- The student dashboard allows students to check their grades on individual assignments and see any teacher feedback. According to the "Student Help: How Do I Check My Grades and Teacher Feedback?" document, "From the Timeline, you can click on the relevant assignment to view your final grade and/or any feedback from your teacher."

Supports for All Learners

3.1	Differentiation and Scaffolds	7/8
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.	**2/3**

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

- Materials include teacher guidance for differentiated instruction for students who have not yet reached proficiency. In the online resources for teachers, lessons provide an "Advancing Student Thinking" section that outlines common misconceptions and how teachers can respond. In "Unit 3, Lesson 1, Component 1.2" states, "If students are having trouble getting started, encourage them to write out the repeated factors." Teachers are guided to remind students of exponent concepts they learned in prior grade levels.
- Materials provide teacher guidance to differentiate instruction and activities for specific groups of students, including Emergent bilingual students and students with disabilities.

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 pre-teaching supports for unfamiliar references in the lessons. For example, in the "Launch" section of "Component 25.3" in "Unit 2" of the online resources, teachers are given guidance to explain "the reason some drugs must be taken at a certain dose for a certain

period of time is that they are only effective after the amount of the drug in the body builds up to a specific level." This guidance helps the teacher to facilitate the activity and discussions related to the lesson.
- There are embedded supports for unfamiliar vocabulary in the online resources. For example, in Unit 2, Lesson 20.3, the focus of the lesson is batting averages to teach rational equations. The Launch states, "Begin the activity by explaining (or, if possible, having a student explain) how a batting average is calculated as the number of bases hit divided by the number of at bats, and then written as a decimal followed by 3 digits."

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 enrichment activities for students who have demonstrated proficiency in grade-level content and skills. Each unit in the online resources for teachers includes an enrichment activity to engage learners with more depth and complexity related to the standards of the course. For example, "Unit 2, Lesson 3" asks students to apply their knowledge to predict the paths of planets related to their orbital period.
- Materials include guidance for differentiated extension activities for students who have demonstrated proficiency in grade-level content and skills. An "Are You Ready for More" section is included in each lesson of the online resources for teachers to give students an opportunity to deepen their understanding by applying the content in a real-world context.
- There are enrichment and extension activities and optional lessons in materials. The Section Level Planning Guide provides an overview of student learning objectives, multiple suggestions for activities, and a chart that outlines the levels of learning. The levels are identified as Explore, Play, and Discuss, Deep Dive, Synthesize and Apply, and Ongoing Practice. There are lessons and activities aligned to each level.
- Materials do not include teacher guidance for differentiated instruction for students who have demonstrated proficiency in grade-level content and skills.

Supports for All Learners

3.2	Instructional Methods	11/13
3.2a	Materials include prompts and guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learned explicitly (directly).	**4/6**
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 explaining and communicating the concept(s) to be learned explicitly (directly.) Materials do not include prompts and guidance to support the teacher in modeling 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 and guidance to support the teacher in explaining the concepts to be learned explicitly. In the online resources for teachers, the activity synthesis of "Component 4.2" in Unit 2 guides teachers to arrange students in groups of 2, where they will perform operations on polynomials by experimenting with integers. In addition, teachers are provided with prompts to help facilitate student thinking through this activity.
- Materials include prompts and guidance to support the teacher in communicating the concepts to be learned directly. For example, "Component 2.2" in Unit 3 in the online resources for teachers prompts and guides teachers to utilize color and annotations to communicate how to recognize patterns with the concept of the perfect square trinomial and its factored form. Teachers are also guided to scribe student thinking and draw links between their thinking as needed.
- Materials do not include prompts and guidance to support the teacher in modeling the concepts to be learned directly. The materials for "Component 3.3" in Unit 5 in the online resources instruct teachers to make technology available for students to graph functions from an equation or a table; however, there are no specific prompts or guidance, such as exemplars, to help teachers at any level of experience prepare in modeling transformation.

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 delivery using a variety of instructional approaches. Instructional routines are outlined in the online "Teacher Guide," which states, "materials include a small set of activity structures and reference a small, high-leverage set of teacher moves that become more and more familiar to teachers and students as the year progresses." In the online teacher resources, Lesson 2 of Unit 2 provides guidance for different instructional routines, including "What Do You Notice, What Do You Wonder?", "Think-Pair-Share," and "Clarify, Critique, Correct." In later units, instructional routines are given as recommendations. Teachers are given guidance through instructional routines early in the course and given opportunities to practice them throughout the course.
- Materials include teacher guidance and recommendations for effective lesson facilitation using a variety of instructional approaches. The "What is a Problem-Based Curriculum" section in the online "Teacher Guide" outlines the teacher's role in facilitating student learning and helping students to synthesize what they have learned. In the online teacher resources, "Component 12.2" of Unit 4 states, "Display the task statement, table, equation, and graph for all to see. Ask students to think of at least one thing they notice and at least one thing they wonder about. Give students 1 minute of quiet think time, and then 1 minute to discuss the things they notice and wonder with their partner, followed by a whole-class discussion." This provides guidance for teachers to facilitate student thinking and discussion by having them work independently, share with a partner, and share with the whole group.

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 support multiple types of practice to support effective implementation. The purpose of multiple types of practice can be found in the online "Teacher Guide," which indicates various instructional routines frequently used in lesson warm-ups and cool-downs are primarily designed for independent student work, enabling teachers to assess their learning. Instructional routines in online lessons often include collaborative work and guiding questions for teachers to facilitate whole-group learning.
- Materials include guidance for teachers and recommended structures to support effective implementation. Each lesson in the online teacher resources outlines what teachers do to facilitate the learning process for students and typically provides prompts to aid in this facilitation. The launch and activity synthesis of each activity identifies whether the recommended structure for the lesson is whole-class discussions, small-group collaboration, or independent work.

Supports for All Learners

3.3	Supports for Emergent Bilingual Students	9/11
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.	1/2
3.3b	Materials include implementation guidance to support teachers in effectively using the materials in state-approved bilingual/ESL programs.	0/1
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 one level 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 do not 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 and increasing comprehension through oral and written discourse. Materials do not include embedded guidance for teachers to support emergent bilingual students in building background knowledge or 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 providing linguistic accommodations for one level of language proficiency, which are designed to engage students in using increasingly more academic language. In the online teacher resources, each lesson in the course has a "Supports for English Language Learners" section, which offers guidance on linguistic accommodations for one proficiency level. For example, Unit 4, Lesson 5 provides a strategy for students to write responses to a question before sharing and receiving feedback from a partner. The teacher then displays the feedback that best helps students to strengthen and clarify how they use language to express their ideas.
- Materials do not include teacher guidance on providing linguistic accommodations for more than one level of language proficiency. The "Supporting Diverse Learners" section of the online "Teacher Guide" states, "Access supports for English learners are designed to provide

students with access to the academic language demands for all students learning mathematics, specifically the demands of reading, writing, listening, speaking, conversing, and representing." Although materials include support for different skills that students can use to engage with mathematical language, there is no guidance for teachers to use these different skills with various levels of language proficiency.

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

- Materials provide teacher guidance to support at least one level of Emergent bilingual students with strategies that align with the ELPS, but materials do not include implementation guidance to support teachers in effectively using them in state-approved bilingual/ESL programs. Materials include a "one size fits all" approach instead of supporting teachers to implement strategies for all levels of language proficiency.
- The "Supporting Diverse Learners" section of the online "Teacher Guide" offers guidance and strategies for language development and access tailored to Emergent bilingual students. However, this guidance does not include specific instructions or evidence of how to incorporate resources from 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.

- Materials include embedded guidance for teachers to support emergent bilingual students in developing academic vocabulary and increasing comprehension through oral discourse. For example, in the online teacher resource, "Component 6.2" of Unit 5 guides teachers to lead a whole-class discussion by having students restate another student's observation using precise mathematical language. If bilingual students are struggling to restate, then teachers are guided to allow students time to share with a partner prior to sharing with the whole class. This strategy provides bilingual students an opportunity to build on the understanding of others and communicate their own understanding, which builds mathematical vocabulary and increases comprehension through oral discourse. Additionally, lessons throughout the online teacher resource provide sentence stems for teachers to help emergent bilingual students who may struggle with oral discourse.
- Materials include embedded guidance for teachers to support emergent bilingual students in developing academic vocabulary and increasing comprehension through written discourse. For example, in the online teacher resource, "Component 6.3" of Unit 4 guides teachers to have students share their written responses with a partner. Partners are given feedback prompts so they can share and receive feedback on their responses. Students are then asked to revise their responses based on peer feedback. This strategy provides bilingual students an opportunity to strengthen their understanding of the content, which builds mathematical vocabulary and increases comprehension through written discourse.

- The Key Structures In This Course section provides opportunities for students to develop background knowledge through embedded guidance for teachers to support emergent bilingual students through journal writing. The materials include writing prompts such as, "When students are asked to write about ways in which the math they learned in class that day was connected to something they knew from an earlier unit or grade, they are explicitly connecting their prior and new understandings."

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

- In the online teacher resources, each lesson in the course has a "Supports for English Language Learners" section, which offers guidance on linguistic accommodations for one proficiency level. For example, Unit 4, Lesson 5 provides a strategy for students to write responses to a question before sharing and receiving feedback from a partner. The teacher then displays the feedback that best helps students to strengthen and clarify how they use language to express their ideas.
- The materials state in the "Supporting Diverse Learners" section of the "Teacher Guide" that "each lesson includes instructional strategies...that suggest mathematical language routines (MLRs) that provide students with access by supporting them with the language demands of a specific activity without reducing the mathematical demand of the task."

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**

The 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.

- Materials include practice opportunities over the course of the unit for students to demonstrate learning at the depth of understanding aligned to the TEKS. Each lesson in the online teacher and student materials consists of a warm-up, activities with a practice set, a cool-down, and a cumulative set of practice problems. Each of these provides students with practice opportunities where students explain and justify their reasoning to demonstrate their depth of understanding. For example, the activity narrative in "Component 2.3" of Unit 4 states, "The goal of this task is to review the connections between different ways of expressing a relationship: a description, a graph, and likely an equation. Students begin by analyzing different graphs, finding one that matches a given description, and explaining how they know this is a correct representation." At the conclusion of each unit is a cumulative assessment that includes varying levels of questions, as well as both multiple choice, multiple response, short answer, and constructed response questions.
- Materials include activities through the online teacher and student resources that provide opportunities to work with real-world problems. For example, Lesson 1 of Unit 4 tasks students with exploring how fast a neighborhood pond will be covered by algae. Students must use their knowledge of exponential functions and their patterns of behavior to reason through the activity. Students then represent their ideas with diagrams and share their conclusions to constructed response questions. This activity combines mathematics process TEKS with Algebra 2 TEKS to give students the opportunity to further their understanding of the content.

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

- Materials include tasks that progressively increase in rigor and complexity, leading to proficiency in Algebra 2 standards. In the online teacher resource, Lesson 1 of Unit 4 begins with a warm-up where students recall and use ideas relating to arithmetic and geometric sequences. "Component 1.2" then asks students to analyze exponential growth in the context of successive scaling and to apply that knowledge to solve problems. The lesson continues in "Component 1.3," where students apply their knowledge to a real-world scenario that involves measuring the number of algae in a pond over a period of time using an exponential function.
- Materials include different levels of questions across lessons and units. Each lesson in the online teacher resource has a set of cumulative practice problems with varying levels of difficulty. Each unit has a summative assessment to conclude the unit. The "Teacher Guide" in the online teacher resource states, "These assessments have a specific length and breadth, with problem types that are intended to gauge students' understanding of the key concepts of the unit while also preparing students for new-generation standardized exams. Problem types include multiple-choice, multiple-response, short answer, restricted constructed response, and extended response. Problems vary in difficulty and depth of knowledge."

Depth and Coherence of Key Concepts

4.2	Coherence of Key Concepts	11/12
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.	**2/3**
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 for the current course and prior courses/grade levels through a logically sequenced and connected scope and sequence. Materials do not demonstrate coherence for future courses in the 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 to the content to be learned in the current course. Materials do not demonstrate coherence across units by connecting what will be learned in future courses to the content to be learned in the current course. 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.

- Materials provide a logically sequenced scope and sequence. The "Product Folder" contains Google sheets that outline the scope and sequence for mathematics courses from Kindergarten through Algebra 2. Topics in the Algebra 2 course are introduced in a logical order. For example, materials on the Google sheet build upon previously learned topics such as linear, quadratic, and exponential functions to then expand to other families of functions.
- Materials demonstrate coherence across courses through a logically connected scope and sequence found in the "Course Guide" in the online teacher resource. The "scope and sequence" page feature a diagram that illustrates how the units from grade 6 through Algebra 2 are interlinked, showing how students experience a seamless progression in their mathematical education.

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

- Materials demonstrate coherence across units by explicitly connecting patterns between mathematical concepts. In the narrative at the beginning of "Unit 4" in the online teacher resource, it states, "Students first studied the meaning of rational exponents in a previous unit. Here, they write and interpret exponential functions evaluated at rational number inputs in context." This highlights a connection between laws of exponents, which are first introduced in Algebra 1 with integer exponents, and exponential functions, where rational exponents in Algebra 2 are interpreted in the context of a function.
- Materials include connections of big ideas within the course and from previous grade levels. In the narrative at the beginning of "Unit 4" in the online teacher resource, it states, "In the second half of the unit, students learn that logarithms are a way to express the exponent that makes an exponential equation true... Students then learn to solve exponential equations using logarithms." This big idea is reinforced through various real-world applications, such as population growth, interest calculations, acidity of substances, and intensity of earthquakes. Using logarithms to solve exponential equations adds depth to students' knowledge of solving equations, which has been developed through the current course, as well as previous grade levels and courses.
- Materials include coherence across units by explicitly connecting relationships between mathematical concepts. These relationships are highlighted through recurring themes, such as the relationship between graphs, tables, equations, and contexts of functions. In the narrative at the beginning of "Unit 5" in the online teacher resource, it states, "Prior to this unit, students have worked with a variety of function types, such as polynomial, radical, and exponential. The purpose of this unit is for students to consider functions as a whole and understand how they can be transformed to fit the needs of a situation." This gives students an opportunity to explore the relationship between transformations of various types of functions.

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 connecting the content and language learned in previous grade levels and courses to the content to be learned in Algebra 2. In the online teacher resource, the "Unit 2" narrative states, "In previous courses, students learned about linear and quadratic functions. They rewrote expressions for these functions in different forms to reveal structure and identified key features of their graphs, such as intercepts. In this unit, students will expand their earlier work as they investigate polynomials of higher degree and the features that all polynomial functions have in common." Additionally, the "Design Principles" section of the "Teacher Guide" in the online teacher resource states, "There are three kinds of alignments to standards in these materials: building on, addressing, and building towards." This demonstrates attention to alignment along with the diagrams in the scope and sequence that illustrate how units from Grade 6 to Algebra 2 are interlinked.

- Materials do not demonstrate coherence across units by connecting what will be learned in future courses to the content to be learned in Algebra 2. In both the online teacher resource and the Google sheet scope and sequence, there is no reference to show how concepts in Algebra 2 connect with future high school courses, such as pre-calculus, calculus, or statistics.

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 and procedures from the current course to new mathematical knowledge and skills. For example, the narrative in "Lesson 7" of "Unit 4" in the online teacher resource states, "So far in this unit, students have interpreted, evaluated, and constructed exponential functions in various applications. Here, they encounter exponential functions in a new context - that of radioactive decay." Additionally, the narrative in "Lesson 8" of "Unit 2" details how the procedural knowledge of rewriting and defining equations from the previous lesson will be built upon and utilized throughout the current lesson.
- Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from prior grade levels to new mathematical knowledge and skills. For example, the activity narrative in "Component 1.2" of "Unit 4" in the online teacher resource states, "The goal of this task is for students to analyze exponential growth in context of successive scaling. Students worked with scaling two-dimensional objects in grade 7 and again, in a more abstract way, in geometry." Additionally, the narrative in "Lesson 4" of "Unit 2" describes how student's prior knowledge of equations and their solutions in previous courses, including verifying solutions, is connected to the current 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 skills and concepts across lessons. For example, in the practice questions in "Component 6.2" of Unit 2 in the online teacher and student resource, question one has students practice identifying the degree and leading term of a polynomial, which is a skill introduced at the beginning of the unit. Additionally, Lesson 11 in Unit 2 includes questions in the cumulative practice problem set that give students an opportunity to review skills and concepts from earlier in the unit.
- Materials provide spaced retrieval opportunities with previously learned skills and concepts across units. For example, in the online teacher and student resource, questions six and seven in the cumulative practice problems at the end of Lesson 1 in Unit 4 give students an opportunity to practice skills and concepts from previous units. Additionally, the "Teacher Guide" in the online teacher resource states, "each unit begins with a diagnostic assessment ("Check Your Readiness") of concepts and skills that are prerequisite to the unit as well as a few items that assess what students already know of the key contexts and concepts that will be addressed by the unit." Diagnostics would include prior knowledge from previous courses as well as previous units in the current course, which helps students to retrieve prior knowledge across units in the Algebra 2 course.

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. In the online teacher resource, teachers are provided with guiding questions to facilitate discussions around problem-solving strategies. For example, "Component 11.1" of Unit 4 is a warm-up that guides teachers to "Ask students to share their strategies for each problem." Students are using mental math to evaluate common logarithms to encourage students to explore the connection between exponential and logarithmic expressions. Specific questions that guide teachers to focus on student strategy include "Did

anyone have the same strategy but would explain it differently?" and "Did anyone solve the problem in a different way?" According to the "Teacher Guide" in the online teacher resource, typical lessons include a warm-up to help prepare students for the upcoming lesson by giving opportunities to strengthen number sense and procedural fluency, as well as reminding students of previous content that will connect to new learning.

- Materials provide interleaved practice opportunities with previously learned skills and concepts across units. For example, end-of-unit assessments in the online teacher and student materials are structured with a set of problems that require students to select and use diverse strategies on varying types of problems rather than relying on a single strategy. The "Teacher Guide" in the online teacher resource states, "When possible, extended response problems provide multiple ways for students to demonstrate understanding of the content being assessed, through some combination of arithmetic or algebra, use of representations (tables, graphs, diagrams, expressions, and equations) and explanations."

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**

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

- Materials include questions and tasks that require students to interpret, analyze, and evaluate a variety of models for mathematical concepts and situations. For example, the activity narrative in "Component 3.3" of "Unit 5" in the online teacher resource incorporates graphs of transformations of exponential functions. Students are asked to analyze the graphs, interpret graphical transformations of the functions based on algebraic changes, and evaluate functions at various points to determine how they fit a set of given data. Teachers are given questions to guide students to make connections between transformations of exponential functions and fitting functions to a set of real-world data. Additionally, the warm-up in "Lesson 1" of "Unit 2" explains that students are provided models of "four open-top boxes with specific dimensions." Students are asked to analyze the boxes, interpret the meaning of the different shapes, and decide which box does not belong to the others. This routine incorporates both a task and questions to challenge students to interpret, analyze, and evaluate so they can defend their choices.
- Materials include questions and tasks that require students to interpret, analyze, and evaluate a variety of representations for mathematical concepts and situations. For example, the warm-up in "Lesson 1" of "Unit 5" in the online teacher resource presents a graph representing a set of data. This routine incorporates both questions and tasks by asking questions such as "What do you notice?" and "What do you wonder?" and challenging students to interpret, analyze, and evaluate the data to prepare for an upcoming activity where they will be transforming functions. Additionally, "Component 5.2" of "Unit 4" reinforces concepts from an earlier lesson by determining the growth factor of an exponential function over a fractional interval and rewriting an exponential function to show how a quantity changes given various

input values. This activity builds on prior knowledge and helps students connect representations, such as graphs and equations, to real-world situations.

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

- Materials include questions that require students to create a variety of models to represent mathematical situations. For example, "Lesson 1" of "Unit 2" in the online student materials provides cumulative practice where students are asked to write an expression to represent the volume of a box given in part A of question three. Students are also asked to create a graph of two populations over time in part C of question six. Additionally, online materials provide an end-of-unit assessment at the conclusion of each unit. Each assessment includes questions that require students to create a variety of models to represent situations and demonstrate their learning.
- Materials include tasks that require students to create a variety of models to represent mathematical situations. For example, the activity narrative in "Component 11.2" of "Unit 5" in the online teacher resource states that students "work with those function types to try to model the temperature of a bottle of water." It goes on to say that students will "apply different transformations to 2 possible functions, including translations, scale factor, and reflections, to model the data."

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

- Materials include questions and tasks that provide opportunities for students to apply conceptual understanding to new problem situations. For example, "Component 8.2" of "Unit 4" in the online teacher resource provides students with a pattern and asks them to use what they know about exponents and exponential functions to complete the task. Students apply their prior knowledge "to find the number of trapezoids after a certain number of growth steps, and to find the step number that would produce a certain number of trapezoids." Teachers are given guidance to look for different strategies that students use to solve the problem and help set the stage for students to learn about logarithms in the following lessons.
- Materials include questions and tasks that provide opportunities for students to apply conceptual understanding to new contexts. The "Design Principles" section of the "Teacher Guide" in the online teacher resource states that students are consistently provided with opportunities to connect mathematical concepts to real-world contexts throughout the course. Thoughtfully chosen anchor contexts are often used to introduce new concepts, motivating students and helping them apply their understanding. For example, the "Unit 2" narrative in the online teacher resource explains that students will be working with rational functions in the context of average cost. Students will look at models of average cost functions to examine asymptotic behavior and how this behavior can be determined from an equation. "Students then focus on solving rational equations and making sense of how the process can lead to possible solutions that are in fact not solutions (so-called extraneous

solutions)." Students will then apply their conceptual understanding of rational functions to real-world contexts, such as average cost.

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.	**4/3**
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 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.

- Materials provide tasks that are designed to build the necessary student automaticity to complete grade-level tasks. For example, "Component 10.1" of "Unit 4" in the online teacher materials states, "Students work in groups of 2 and take turns reading and interpreting logarithmic equations." This practice of reading and interpreting logarithms of bases other than base 10 will help increase the automaticity of recognizing the meaning of a logarithmic expression as they learn about and explore the logarithms of base 2 and e.
- Materials provide tasks that are designed to build the student fluency necessary to complete grade-level tasks. The "Teacher Guide" in the online teacher resource describes warm-ups as designed to enhance number sense or procedural fluency and encourage students to perform mental arithmetic or reasoning algebraically. This approach strengthens students' mathematical fluency, laying a foundation for a more intuitive understanding of mathematical relationships. Additionally, the "Course Guide" describes the instructional routine "Math Talks" as a way to improve fluency by prompting students to engage with numbers, shapes, or algebraic expressions and to solve problems mentally.

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 practice the application of efficient, flexible, and accurate mathematical procedures within the lesson. For example, at the end of each lesson in the online student and teacher resource, teachers assign a cumulative practice problem set for students to demonstrate their mastery of the lesson. These problem sets have different item types that give students an opportunity to practice the application of efficient, flexible, and accurate mathematical procedures. Additionally, the warm-up in "Lesson 21" of "Unit 2" in the online teacher resources directs students to work in small groups to determine the solution to rational equations. This activity not only reinforces their fluency in simplifying expressions but also allows them to listen to their peers' strategies and refine their own for greater efficiency. This routine encourages students to apply various strategies to solve the problem and understand multiple approaches, promoting the practice of flexible procedures.
- Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures throughout the unit. The "Teacher Guide" in the online teacher resource states, "The practice problem set associated with each lesson includes a few questions about the contents of that lesson, plus additional problems that review material from earlier in the unit and previous units. Distributed practice (revisiting the same content over time) is more effective than massed practice (a large amount of practice on one topic, but all at once)." Each unit culminates in an "End of Unit Assessment," where students demonstrate mastery of their learning through the application of these procedures. For example, the assessment at the end of "Unit 2" is designed to challenge students to apply the mathematical skills and concepts they've learned in a comprehensive and integrated manner. These assessments not only reinforce the importance of precision and efficiency but also provide a clear measure of students' progress and understanding of polynomials and rational functions.

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

- Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson. For example, the narrative in "Lesson 3" of "Unit 5" in the online teacher resource explains that students simultaneously work on horizontal and vertical translations while addressing the misconception that subtracting from the input translates the graph to the left. They apply their understanding to new contexts, comparing various methods to fit data curves, and will later explore reflections across axes, which, like translations, are rigid transformations that preserve the graph's shape. Through question sets, such as the cumulative practice problems at the end of the lesson, students assess mathematical approaches, refining their problem-solving skills and gaining insight into approaching problems efficiently. This encourages critical thinking, error analysis, and the application of effective strategies.
- Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy throughout a unit. For example, the "Unit 3" narrative in

the online teacher resource states, "Students use what they know about exponents and radicals to extend exponent rules to include rational exponents" so that they can rewrite an expression with a rational exponent as a radical expression. Students are given opportunities throughout the unit to evaluate procedures, processes, and solutions to build toward more efficient ways to evaluate expressions, solve quadratic equations with complex solutions, and solve cubic equations algebraically. "Lesson 11" of this unit builds on the concept of solving quadratic equations with real solutions and applies those same strategies to solve quadratic equations with complex solutions. Students build efficiency with imaginary numbers as they learn more about how they are represented graphically and how operations apply to complex numbers.

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

- Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches. For example, "Component 18.3" of "Unit 3" in the online teacher resource guides the teacher to "Look for groups where one partner uses quadratic formula while the other partner uses a different method for a specific row to share during the discussion. Also, look for groups where partners disagree because their solutions look superficially different." This gives students an opportunity to communicate their thinking, listen to other's perspectives, and adjust their thinking for more efficient strategies that can be used.
- The "Teacher Guide" in the online teacher resource gives further evidence of embedded supports for teachers. The "A Typical IM Lesson" section explains that the lesson synthesis is an opportunity that "assists teachers with ways to help students incorporate new insights gained during the activities into their big-picture understanding." As students synthesize each lesson throughout a unit, they are working toward more efficient approaches to solving problems.

Balance of Conceptual and Procedural Understanding

5.3	Balance of Conceptual Understanding and Procedural Fluency	7/16
5.3a	Materials explicitly state how the conceptual and procedural emphasis of the TEKS are addressed.	**0/2**
5.3b	Questions and tasks include the use of concrete models and manipulatives, pictorial representation (figures/drawings), and abstract representations.	**4/6**
5.3c	Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts.	**3/8**

The materials do not explicitly state how the conceptual or procedural emphasis of TEKS are addressed. Questions and tasks include the use of pictorial representation and abstract representations. Questions and tasks do not include the use of concrete models and manipulatives. Materials include supports for students in connecting, creating, and explaining concrete models to abstract concepts. Materials do not include supports for students in defining concrete to abstract concepts. Materials do not include supports for students in connecting, creating, defining, and explaining representational models to abstract concepts.

Evidence includes, but is not limited to:

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

- Materials do not explicitly state how the conceptual or procedural emphasis of the TEKS are addressed. "Lessons by Standard" section of the "Teacher Guide" in the online teacher resource do not mention TEKS in any unit or lesson materials in the online course for Algebra 2.
- The document "TX TEKS IM Algebra 2_Powered by Kiddom" identifies how TEKS correspond to specific units and lessons in the online teacher resource, but it does not explicitly state how the conceptual or procedural emphasis of the TEKS is addressed in the course.

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 pictorial representations and abstract representations. Each lesson in the online teacher resource is designed to help students transition from pictorial representations to abstract ones. Cumulative practice problems and end-of-unit assessment questions consistently embed these representations, providing students an opportunity to apply both visual and abstract methods to solve problems. In "Component 3.3" of "Unit 5" in the online teacher resource, students are provided with a graph and table that illustrates the temperature of a piece of meat that is taken out of the freezer to thaw over a period of time. This pictorial representation helps students contextualize the

problem, making it easier to grasp the relationship between time and distance in a real-world scenario. This approach not only clarifies the concept but also serves as a bridge to the abstract representations that students are asked to analyze.
- Questions and tasks do not include the use of concrete models and manipulatives. A printed list of manipulatives titled "Algebra 2 Manipulative List" provides a list of materials and supplies organized by unit and lesson to complete tasks. However, materials and supplies are limited to markers, chart paper, graphing technology, etc. There is no mention of items that would be considered concrete models and manipulatives for Algebra 2.

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

- Materials include supports for students in connecting representational models to abstract concepts. For example, "Lesson 10" of "Unit 3" in the online teacher resource guides students to connect positive integers to negative integers using a number line. As the lesson progresses, students begin to think about how they will represent numbers like -1 on the real number line. This supports students as they begin to explore the basic concepts of complex numbers and how we can represent them in the complex plane.
- Materials include supports for students in creating and explaining representational models to abstract concepts. For example, "Component 1.3" of "Unit 5" in the online teacher resource guides teachers to arrange for students to work in pairs. Students receive the following instructions, "One partner will describe the transformation of graph a to graph b that they see on their handout, and the other will draw the transformation based on the description. Each partner will draw 3 graphs and describe 3 transformations." Creating and explaining representational models to a partner supports students in understanding abstract concepts related to transformations.
- There is no evidence of supports for students in defining representational models or connecting, creating, defining, and explaining concrete models to abstract concepts. In an Algebra 2 course, it would be helpful to have activities with concrete models, such as Algebra Tiles, to support students in moving from concrete models to representational models to abstract concepts.

Balance of Conceptual and Procedural Understanding

5.4	Development of Academic Mathematical Language	13/14
5.4a	Materials provide opportunities for students to develop their academic mathematical language using visuals, manipulatives, and other language development strategies.	**2/3**
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 and other language development strategies. Materials do not provide opportunities for students to develop their academic mathematical language using manipulatives. 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.

- Materials provide opportunities for students to develop their academic mathematical language using visuals and other language development strategies. For example, the card sort activity in "Component 3.2" of "Unit 2" in the online teacher resource indicates students will analyze various representations and structures and make connections without relying on calculators. In this activity, students develop an intuition for recognizing polynomials by identifying which expressions and graphs correspond to the same polynomial function. When groups have completed the matching, teachers are guided to facilitate a class discussion with questions such as, "Which matches were tricky? Explain why," "Did you need to make adjustments in your matches?" "What might have caused an error?" and "What adjustments were made?" This activity helps students develop their academic mathematical language by using attributes and structures to match graphs with equations and using visuals to facilitate appropriate connections.
- Materials do not provide opportunities for students to develop their academic mathematical language using manipulatives. While there are examples of visual representations being used

throughout the Algebra 2 course to develop academic mathematical language, there is no indication of using manipulatives, such as algebra tiles, in this course.

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 addressing scaffolding and the use of academic mathematical vocabulary in context. For example, the activity in "Component 2.3" of "Unit 2" in the online teacher resource utilizes the "Three Reads" instructional strategy. Teachers are guided through a structured process. During the first read, students describe the situation without numerical values. The second read is where students identify quantities and relationships without specific numerical details, focusing on key quantities such as number of years, growth factor, and total value of the investment. Following the third read, students brainstorm strategies for determining the value of the investment after graduation, thereby connecting the word problem to the reasoning required for its solution. By scaffolding the reading, teachers are helping students demonstrate their use of academic mathematical vocabulary in context.
- Materials include embedded guidance for the teacher supporting student development and use of academic mathematical vocabulary in context. For example, "Component 1.2" of "Unit 4" in the online teacher resource states, "If students struggle interpreting what it means to scale the photo by 80%, ask them to consider what would happen to the dimensions if the photo were doubled in size? Halved? Then ask them what percent scaling each of these corresponds to (200% and 50%)." This development of academic mathematical vocabulary supports students in understanding patterns of change in exponential and logarithmic.

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 guidance for teachers to support the application of appropriate mathematical language, including vocabulary, syntax, and discourse. For example, the warm-up in "Lesson 11" of "Unit 2" in the online teacher resource features a "Math Talk" routine that encourages students to notice and make use of structure to identify a point where the graphs of two given functions intersect. The work here leads directly into the next activity where students use algebraic methods to identify all points of intersection between two polynomials. Teachers are guided to have students share their problem-solving strategies, recording and displaying their responses for the class. They were then prompted to ask questions such as, "Who can restate ___'s reasoning in a different way?", "Did anyone have the same strategy but would explain it differently?", "Did anyone solve the problem in a different way?", "Does anyone want to add to this strategy?", and "Do you agree or disagree? Why?" These discussions foster the use of precise mathematical language and collaborative reasoning.

- Materials provide teacher guidance to support mathematical conversations that not only provide opportunities for students to hear, refine, and use math language with peers but also to develop their math language toolkit over time. For example, "Component 5.3" of "Unit 2" in the online teacher resource is a collaborative activity where students match equations to either a graph or a graph's description. This task aims to enhance students' ability to identify the horizontal intercepts of a polynomial's graph from its equation in factored form. Teachers then guide students to generalize their observations with a partner, who records those observations, and then students swap roles. This role-swapping allows students to explain their reasoning and critique their partner's thinking. During class discussions, teachers are not only guided to invite students to share their observations and demonstrate their experiments for the class but also guided to ask questions, such as "Which matches were tricky? Explain why.", "Did you need to make adjustments in your matches?", "What might have caused an error?" and "What adjustments were made?"
- Materials provide guidance to support student responses using exemplar responses to both questions and tasks. Throughout the Algebra 2 course, the online teacher resource provides the teacher with responses that can serve as exemplars to both questions and tasks. For example, "Component 6.4" of "Unit 2" provides questions teachers can use to facilitate class discussions, along with possible student responses they should be hearing. Additionally, sample student responses are provided for each practice question set to illustrate the depth and quality of responses that are expected.

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**

The process standards 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 materials include a How to Use These Materials section that contains The Math Process Standards Chart. The chart outlines the TEKS process standards that are integrated in the materials.
- The materials include evidence of the process standards within the Activity Narrative description of each lesson. The mathematics process standards aligned to the lesson are in parentheses at the end of the description.

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

- The How to Use These Materials section describes how process standards are incorporated and connected throughout the course. It states, "The Math Process Standards describe the types of thinking and behaviors students engage in as they are doing mathematics." For example, "Students have an opportunity to explore the tools before they are asked to use them to represent mathematical situations in later lessons."
- The online materials include evidence of a description of how process standards, or mathematical practices, are connected throughout the course. In the How to Use These Materials section of the Teacher Guide, there is a Math Process Standards Chart section that states, "Teachers will notice that some instructional routines are generally associated with certain mathematical practices." Following, there is a description of how instructional routines throughout the course align with mathematical practices. The chart also demonstrates how process standards connect throughout the course.

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

- The materials include a description for each unit of how process standards are incorporated and connected throughout the unit. In the How to Use These Materials section, there is a Math Process Standards Chart. This chart correlates the process standards present in each unit of the materials and each lesson.
- The materials include a Process Standards Integration Document for the TEKS and illustrate how the process standards build and connect throughout the units by connecting the student expectation with a narrative description of how the process standard(s) are represented in the units.

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

- The materials include a description for each unit of how process standards are incorporated in the lessons. In the How to Use These Materials section, there is a Math Process Standards Chart. This chart provides a useful overview of how the process standards are incorporated into each lesson.
- Mathematical Process Standards are found in the warm-up activity of every lesson throughout the units. In the A Typical IM Lesson section, the materials state that the warm-ups "place value on students' voices as they communicate their developing ideas, ask questions, justify their responses, and critique the reasoning of others."

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 problem solving, and make sense of the mathematics. The "Teacher Guide" in the online teacher resource describes attitudes and beliefs the materials are meant to cultivate in students. The "What is a Problem-Based Curriculum" section states, "We want students to believe anyone can do mathematics and that persevering at mathematics will result in understanding and success. In the words of the NRC report Adding It Up, we want students to develop a 'productive disposition-[the] habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy.'" For example, the warm-up in "Lesson 4" of "Unit 5" has three graphs, and students are asked what they notice and what they wonder about the graphs. Teacher guidance indicates that students should notice points on the graphs are the same distance from the line of reflection, just in a different direction. The warm-up gives students the opportunity to begin working through how to identify and make sense of lines of symmetry on a graph.
- A typical lesson structure in the online course materials provides students with opportunities to explore, reason, and make sense of the mathematics promoting perseverance and sense-making of the mathematics. For example, the activity in "Component 15.2" of "Unit 3" in the online teacher resource utilizes the "Info Gap" structure, which gives students an opportunity to determine and request the information needed to figure out which complex numbers were multiplied to produce another complex number. For instance, a problem card states, "There are two complex numbers (a + bi) and (c + di) whose product is an imaginary number. What are the two complex numbers?" The student with the problem card must ask questions of the student with the data card. If student one does not ask a question that can be answered by the information on the data card, they must ask a different question. This activity promotes

perseverance and supports students in using precise mathematical language to hone in on the best questions to ask to obtain the information they need. As it states in the activity narrative, students are given an opportunity in this activity to work together to make sense of the mathematics

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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, explaining, and justifying that there can be multiple ways to solve problems. "Math Talks" is one strategy used throughout the Algebra 2 course materials. For example, in the warm-up in "Lesson 4" of "Unit 3" in the online teacher resource, students are shown one problem at a time and evaluate them without writing anything down or using technology. For each problem, students are asked to share their strategies, and the teacher records and displays their responses. The teacher then asks other students questions like, "Who can restate _____'s reasoning in a different way?" "Did anyone have the same strategy but would explain it differently?," "Did anyone solve the problem in a different way?," and "Does anyone want to add on to _____'s strategy?" Students are given an opportunity here to understand, explain, and justify different approaches to a problem.
- Materials support students in understanding, explaining, and justifying that there can be multiple ways to complete tasks. For example, the activity in "Component 7.4" of "Unit 3" in the online teacher resource examines the case in which an equation appears to not have a solution, but by squaring each side a new equation is created that does have a solution. Teachers are guided to monitor for specific strategies that students use, select students to explain and justify their strategy for completing the task, and intentionally sequence the order that the students share so that connections between the strategies are visible to students. This instructional task supports students in understanding, explaining, and justifying that there can be multiple methods to achieve solutions by encouraging students to think flexibly and make meaningful connections.

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

- Materials are designed to require students to make sense of mathematics through doing the math and discussing it with peers and teachers. An example of this is when the materials guide teachers to use the five practices (anticipate, monitor, select, sequence, connect) to facilitate discourse among the class. For example, in "Component 2.2" of "Unit 5" in the online teacher resource, students will compare "three functions whose graphs are vertical translations from one another and generalize their observations of the graphs and data tables into equations where one function is defined in terms of another." As students work, the teacher monitors students' process in making connections between representations as they write equations for g(x) and h(x). After each problem, the teacher will select students to explain and justify their strategy and intentionally sequence the order students share so that connections between the strategies are visible to students.

- Materials are designed to require students to make sense of mathematics through writing about their reasoning with peers and teachers. For example, in "Component 17.2" of "Unit 2" in the online teacher resource, students work in pairs to answer questions about the context provided in the lesson warm-up. As they answer the questions, students share with each other and provide feedback to refine and revise their responses. Questions 3–6 require students to craft a written response to explain their reasoning or justify a solution. Teachers guide students to share with their partner before finalizing their written response.

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 provide support for teachers in guiding students to share their problem-solving approaches including explanations, justifications, and arguments. For example, in the activity in "Component 20.2" of "Unit 2" in the online teacher resource, students write a rational equation to model a situation and use it to answer questions. This is the first time students will write an equation to represent average cost even though they have learned about and worked with the concept of average cost prior to this activity. Students practice solving rational equations, and the activity synthesis indicates, "The purpose of this discussion is for students to understand different ways a rational equation can be solved, with an emphasis on algebraic strategies." Teachers are guided to monitor for specific strategies that students use, select students to explain and justify their strategy for completing the task, and intentionally sequence the order that the students share so that connections between the strategies are visible to students. As students share their strategies, they have the opportunity to explain, justify, and argue why they chose a strategy.
- Materials support teachers in guiding students to reflect on their problem-solving approaches including explanations, justifications, and arguments. For example, the "Section Level Planning Guide" for "Unit 2" in the online teacher resource guides teachers to have students record responses in "an online or paper journal." "Lesson 16" includes a central problem, "how to calculate which cylinder takes the least material to build for a specific volume," for students to work with throughout the lesson. Each activity in the lesson includes questions that require students to reflect on their responses from the previous activity. The lesson synthesis provides four different cylinders for students to "use what they have learned to identify the cylinder with the smallest surface area."

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. In lessons throughout the online teacher resource for the Algebra 2 course, sections include practice questions where "Notes for Evaluating Responses" and "Responding to Student Thinking" are available to support teachers in providing feedback to students. For example, "Component 6.4" of "Unit 3" states, "Use the results of this cool-down to provide guidance for what to look for and emphasize over the next several lessons to support students in advancing their current understanding."
- Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on anticipated misconceptions. Within many lessons, the teacher will find a section called "Advancing Student Thinking." This section provides prompts and guidance based on anticipated misconceptions. For example, "Component 6.3" of "Unit 3" in the online teacher resource states "Since students usually see x-values on the horizontal axis and y-values on the vertical, they may look for a or s values on the wrong axis. Encourage students to annotate the graph by drawing horizontal or vertical lines that will intersect the curves at the point that represents the solution, or using some other method that is helpful for them."