IMRA Review Cycle 2024 Report

Publisher Name	Program Name
Bedford, Freeman & Worth Publishing Group LLC	*Statistics and Probability with Applications*

Subject	Course
Mathematics	Statistics

Texas Essential Knowledge and Skills (TEKS) Coverage: **97.73%**

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

Quality Review Overall Score: **129 / 227**

IMRA Reviewers

Flags for Suitability Noncompliance **1**

Indicator	Count of Flags
1. Prohibition on Common Core	**1**
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 **1**

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 **9**

Quality Review Summary

Rubric Section	Quality Rating
1. Intentional Instructional Design	13 / 53
2. Progress Monitoring	9 / 28
3. Supports for All Learners	18 / 32
4. Depth and Coherence of Key Concepts	20 / 23
5. Balance of Conceptual and Procedural Understanding	52 / 66
6. Productive Struggle	17 / 25

Strengths

- 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.

Challenges

- 1.1 Course-Level Design: Materials do not include a scope and sequence outlining the TEKS, ELPS, concepts, and knowledge taught in the course and lack suggested pacing guides for various instructional calendars
- 1.2 Unit-Level Design: Materials do not contain support for families in both Spanish and English with suggestions for supporting their student's progress.
- 1.3 Lesson-Level Design: Materials do not include comprehensive, structured lesson plans with daily objectives, questions, tasks, materials, or instructional assessments required to meet the content and language standards. They do not provide a lesson overview outlining the suggested timing, or a list of necessary teacher and student materials.
- 2.1 Instructional Assessments: Materials do not include diagnostic assessments at the unit and lesson level, do not provide

definitions or purposes, lack teacher guidance for consistent administration, are not aligned to TEKS and objectives, and do not include standards- or objective-aligned assessments. Standards-aligned assessment items of varying levels of complexity are not included.

- 2.2 Data Analysis and Progress Monitoring: Materials do not provide guidance for interpreting and responding to student performance, lack guidance on using tasks and activities to address student performance trends, and do not include tools for students to track their own progress and growth.
- 3.1 Differentiation and Scaffolds: Materials do not provide guidance for differentiated instruction or extension activities for students who have demonstrated proficiency in grade-level content and skills.
- 3.2 Instructional Methods: Materials do not include do not include guidance for teachers to support the effective implementation.
- 3.3 Support for Emergent Bilingual Students: Materials do not provide guidance for teachers in bilingual/ESL programs, do not support academic vocabulary and comprehension, nor include resources for metalinguistic transfer in dual language immersion programs.
- 4.2 Coherence of Key Concepts: Materials lack coherence, with no logical sequence or connection between content and language across courses and grade levels.
- 5.2 Development of Fluency: Materials do not offer opportunities for students to evaluate procedures, processes, or solutions for efficiency and flexibility within lessons or units.
- 5.3 Balance of Conceptual Understanding and Procedural Fluency: Materials do not explicitly state how the conceptual and procedural emphasis of the TEKS is addressed.
- 5.4 Development of Academic Mathematical Language: Materials do not include embedded guidance for scaffolding student use of academic math vocabulary and supporting mathematical conversations with peers through appropriate language and discourse.
- 5.5 Process Standards Connections: Materials do not include descriptions of how process standards are incorporated and connected throughout the course, units, and lessons.
- 6.1 Student Self-Efficacy: Materials do not support students in justifying multiple approaches to solving problems and completing tasks.
- 6.2 Facilitating Productive Struggle: Materials do not support teachers in guiding students to share and reflect on their problem-solving approaches, explanations, arguments, or justifications.

Summary

Statistics and Probability with Applications (High School) 4E is a 9–12 Mathematics program. It offers a comprehensive and structured approach to statistics and probability with applications. It integrates awareness of statistics applied to daily life, data collection, data representation, data analysis, vocabulary, and comprehension throughout each chapter. The curriculum provides specific lesson guidance and routines, including bellringers, teaching targets, examples, activities, common errors, and exercises. Daily lesson guidance uses a gradual release of responsibility model, starting with focused instruction and moving toward independent learning in each lesson while encouraging explanation and exploration of the topics. Additionally, the program includes online resources designed to enhance the learning experience, such as an e-textbook, various lesson videos, extension activities, the Achieve platform, StatsMedic.com, and a statistical applet for quickly analyzing data.

Campus and district instructional leaders should consider the following:

- While this program does provide structured lessons and pacing guide options, it does not provide a scope and sequence. A TEKS correlation guide is provided, with page numbers corresponding to each student's expectation, but an ELPS correlation is not provided.
- While the lesson plans feature additional online support for the teacher, such as chapter overview videos, lecture presentation slides, data files, question bank, and task projects, the materials do not include additional support for helping parents support their students or for helping Emergent Bilingual students specifically other than translation of the textbook.

Intentional Instructional Design

1.1	Course-Level Design	9/15
1.1a	Materials include a scope and sequence outlining the TEKS, ELPS, concepts, and knowledge taught in the course.	**0/5**
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).	**1/2**
1.1c	Materials include an explanation for the rationale of unit order as well as how concepts to be learned connect throughout the course.	**2/2**
1.1d	Materials include guidance, protocols, and/or templates for unit and lesson internalization.	**2/2**
1.1e	Materials include resources and guidance to support administrators and instructional coaches with implementing the materials as designed.	**4/4**

The materials do not include a scope and sequence that outlines the TEKS, ELPS, concepts and knowledge taught in the course. Materials include suggested pacing (pacing guide/calendar) to support effective implementation. Materials do not include suggested pacing (pacing guide/calendar) to support implementation for various instructional calendars (e.g., varying numbers of instructional days – 165, 180, 210). Materials include an explanation for the rationale of unit order as well as how concepts to be learned connect throughout the course. Materials include guidance, protocols, and/or templates for unit and lesson internalization. Materials include resources and guidance to support administrators and instructional coaches 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.

- Statsmedic.com's "Teacher's Resource Material" includes a detailed lesson guide for every lesson, covering learning targets for the concepts taught each day. The materials do not provide a scope and sequence outlining the TEKS and ELPS. For instance, in Chapter 1 there is a short, detailed lesson plan for each lesson that explains how a teacher can teach the unit and sequence all the notes and activities.
- The materials do include a "Lesson-by-Lesson Content Overview" section at the beginning of each chapter of the *Teacher's Edition*. This section outlines key mathematical concepts for each lesson. For instance, in Lesson 2.4, the focus is on the empirical rule and assessing normality. The overview of this lesson highlights the unique properties of the normal distribution and emphasizes the significance of evaluating the normality of a distribution.

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 180-day and 90-day pacing guides to support the effective implementation of various instructional calendars in the *Teacher's Edition*. In these pacing guides, the materials provide the number of days and lessons covered in each chapter. For example, in the 180-day pacing guide, the materials guide teachers to allocate eight lessons over 18 days for Chapter 1.
- The materials indicate that the pacing guides offer options for teachers to add extra time for planned and unplanned interruptions, such as adding an extra day or two to a chapter if reteaching or extra practice is needed. The pacing guides do not outline the TEKS addressed for each unit.

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

- Teacher resource digital materials include "Chapter Overview Videos" featuring the author. In the videos, the author provides guidance on teaching the content in the chapter and explains the unit order and rationale.
- In the *Teacher's Edition*, the materials provide explanations for the rationale of each unit's order in "The Big Picture." For example, in "The Big Picture," Chapter 1 states, "The skills and techniques of this chapter will form the basis for more complicated statistical analysis in the course" and "In Chapter 3, the ideas from Chapters 1 and 2 are extended to relationships between 2 variables."
- In the *Teacher's Edition*, the materials include a pacing guide located in the "Organizing Your Course" section that provides suggested pacing for each chapter and lesson. The pacing guides recommend an intentional sequence of units that considers the connections between the concepts.

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

- The materials include a section called "Using the *Teacher's Edition* and Resources Effectively," which has detailed information on the chapter and lesson features. The *Teacher's Edition* includes teaching tips that appear on almost every page to provide insights into the concepts presented and offer suggestions on how to present the materials most effectively.
- The materials provide "Chapter Overview Videos" in the "Teacher Resource" digital materials that include guidance for the teacher from the author on teaching the content in the chapter.
- In the *Teacher's Edition*, the materials highlight a "Common Error" section, emphasizing that students should consistently interpret *z*-scores with direction, indicating whether an individual's value is above or below the mean. These supports for unit and lesson internalization serve to enrich student learning experiences.
- The *Teacher's Edition* includes sections on "Effective Classroom Practice" and "Lesson-by-Lesson Content Overview." These sections offer guidance on navigating lessons effectively,

making connections between lessons and assessments, and promoting meaningful learning experiences for students.

- In the *Teacher's Edition*, the materials explain the rationale of unit order in "The Big Picture." For example, in "The Big Picture," Chapter 1 states, "The skills and techniques of this chapter will form the basis for more complicated statistical analysis in the course" and "In Chapter 3, the ideas from Chapters 1 and 2 are extended to relationships between 2 variables."

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

- In the "Teacher Resource Material" for SPA4e StatsMedic.com, the "Review Course" and "Chapter Sections by Day" include detailed support for administrators and instructional coaches with implementing materials. For example, on Day 1, Chapter 1, there are detailed lesson plans and videos for guidance on teaching the lesson.
- The *Teacher's Edition* includes lessons detailed with what supplies are necessary for an activity, how the progression of the activity should look, and what the teacher should be doing throughout the activity. For example, in Chapter 1, Day 1, the description for an activity called "Can Joy Smell Parkinson's," states, "As students are discussing, walk around the room and ask groups what they think" and then lists possible questions that can be asked to guide administrators.
- In the *Teacher's Edition*, the materials provide professional development resource videos to help administrators and instructional coaches support teachers.
- The *Teacher's Edition* enables administrators and instructional coaches to monitor teachers' utilization of the program through digital reports. On the materials' digital platform, performance reports are available by unit and learning objectives, aiding administrators and instructional coaches in assessing whether teachers implement the materials as intended. Teachers can add administrators and instructional coaches to the course. Through this method, administrators and instructional coaches can access performance reports and offer constructive and timely feedback to teachers, aligning with the intended use of the materials.

Intentional Instructional Design

1.2	Unit-Level Design	2/4
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.	**0/2**

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 do not contain supports for families in both Spanish and English for each unit with suggestions on supporting the progress of their students.

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.

- In the *Teacher's Edition*, the materials provide detailed overviews containing the background knowledge needed to begin the new chapter. For example, Chapter 8 "Effective Classroom Practice" states, "Emphasize the transition: In Chapter 7, students were given parameters and were asked questions about the possible values of statistics. Chapter 7 gave the theory behind sampling distributions... In Chapter 8, we transition to knowing the value of..."
- The materials include "Lesson Overview" videos that provide the background content knowledge and academic vocabulary necessary to effectively teach the concepts in the lesson. These resources can be located by clicking on the link in the *Teacher's Edition* or through the teacher resources on the digital platform. For example, in the "Teacher Resource Materials" for Chapter 1, lesson overview videos for 1.1–1.4 provide a quick overview of every lesson in the chapter.
- The materials include comprehensive unit overviews that provide the academic vocabulary necessary to effectively teach the concepts in the unit. For example, in the textbook materials the conclusion of Chapter 4 "Main Points" provides a detailed overview of the vocabulary from the chapter along with definitions.

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

- The materials do not include resources for parents to assist their students in English or Spanish.
- The materials do not include supports for families in Spanish and English and do not offer suggestions on how to support their student's progress. The digital platform includes student

performance reports by unit learning objectives in the "Reports" tab and goal setting and reflection responses for interventions in the Insight tab. There is no guidance on how teachers share these reports or insights with families or follow up with strategies to support students academically.

Intentional Instructional Design

1.3	Lesson-Level Design	2/34
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.	**0/30**
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.	**0/2**
1.3d	Materials include guidance on the effective use of lesson materials for extended practice (e.g., homework, extension, enrichment).	**1/1**

The materials do not include comprehensive, structured, detailed lesson plans that include daily objectives, questions, tasks, materials, and instructional assessments required to meet the content and language standards of the lesson. Materials do not include a lesson overview outlining the suggested timing for each lesson component. Materials do not include a lesson overview listing the teacher and student materials necessary to effectively deliver the lesson. Materials include guidance on the effective use of lesson materials for extended practice (e.g., homework, extension, enrichment).

Evidence includes, but is not limited to:

Materials include comprehensive, structured, detailed lesson plans that include daily objectives, questions, tasks, materials, and instructional assessments required to meet the content and language standards of the lesson.

- In the *Teacher's Edition*, the materials include comprehensive, structured, detailed lesson plans that include learning targets, tasks, materials, and instructional assessments required to meet the lesson but do not connect to content and language standards. The materials include comprehensive overviews before each chapter in the "Blue Pages." The materials provide an explanation of the "Blue Pages" in the preface of the book section "Using the *Teacher's Edition* and Resources Effectively." The materials state, "The introduction of each chapter, or the 'Blue Pages,' includes 'The Big Picture' overview of the chapter, a brief 'Pacing and Assignment Guide,' guidelines for 'Effective Classroom Practice,' a snapshot in each lesson in the 'Lesson-by-Lesson Content Overview,' and a detailed list of 'Chapter Resources.'" None of these materials are directly linked to the TEKS or ELPS.

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

- In the "Blue Pages" of the Teacher's Edition before each chapter and in the preface, the materials include a lesson overview with days required for each lesson for a 180-day or 90-day calendar. The lesson overview does not provide detailed time suggestions for each lesson component.
- The materials include a video guide on accessing the "Stats Medic Resources for SPA4e" website which introduces the lesson overview with guidance and recommendations on the required time for lessons and activities.

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

- The materials do not include a lesson overview listing the teacher resources necessary to effectively deliver each lesson. The *Teacher's Edition* includes sections on "Effective Classroom Practice," "Lesson-by-Lesson Content Overview," and "Chapter Resources." The *Teacher's Edition* does not provide a comprehensive list of recommendations, materials, tips, and notes for preparing each unit's lessons for teachers.
- The materials do not provide an overview listing the student materials necessary to effectively deliver each lesson. The digital platform does include "Student Resources" for each chapter but does not include a comprehensive list of necessary student materials in the lesson overview.

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

- The materials include effective lesson materials for extended practice in the *Teacher's Edition*. For instance, in the exercises for Lesson 4.1, there are designated problems for "Applying the Concepts and Extending the Concepts."
- The materials include responses to each exercise with guidance for the correct answer. For example, in Exercise 8, Section 4.3 states, "The students who do not live in the dorms can't be a part of the sample. Some of these students would live off campus and therefore be less likely to eat on campus than those students who live in the dorm, so the percent from the sample is likely greater than the percent for all students."
- The materials include guidance on the effective use of lesson materials for extended practice. The *Teacher's Edition* provides "Stats Applied" activities with enrichment guidance for teachers. For example, Chapter 5 of the *Teacher's Edition* includes the "Should an Athlete Who Fails a Drug Test Be Suspended?" "Stats Applied" activity. As a teaching tip, the materials indicate that this activity highlights drug testing, which has undergone significant changes. Teachers can ask students to record their guesses and revisit them at the end of the chapter after they gain a comprehensive understanding of probability.

Progress Monitoring

2.1	Instructional Assessments	7/24
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.	**6/12**
2.1b	Materials include the definition and intended purpose for the types of instructional assessments included.	**0/2**
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.	**0/6**
2.1e	Instructional assessments include standards-aligned items at varying levels of complexity.	**0/2**

The materials include summative and formative assessments at the unit and lesson level that vary in types of tasks and questions. Materials do not include diagnostic assessments at the unit or lesson level that vary in types of tasks and questions. Materials do not include the definition and intended purpose of the types of instructional assessments. Materials include teacher guidance to ensure accurate administration of instructional assessments. Materials do not include teacher guidance to ensure consistent administration of instructional assessments. Diagnostic, formative, and summative assessments are not aligned to the TEKS and objectives of the course, unit, or lesson. Instructional assessments do not include standards-aligned items at varying levels of complexity.

Evidence includes, but is not limited to:

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

- The materials include summative assessments at the unit level consisting of various tasks and questions, such as assessments, projects, and performance-based assessments. At the unit level, the materials include tasks such as the "Stat Applied Assessment" for each chapter, which students can solve at the end of the chapter. For example, in Chapter 1 of the online *Teacher's Edition*, there is a student project and rubric, a performance-based assessment in "Stats Applied," and a summative unit assessment in the digital chapter materials. Chapter tests with book-based questions are included in the online teacher resources of materials.
- In the *Teacher's Edition*, summative assessments are included in various forms such as lesson quizzes and chapter tests with multiple-choice and open-response questions. The materials quiz questions that cover several lessons together, such as the Lesson 4.1–4.4 quiz. The materials do not include summative tasks for individual lessons.

- The materials include formative assessments at both the unit and lesson levels. For unit-level assessments, the materials in the online teacher resources offer tasks such as the Chapter 5 activity "Promotion Discrimination" and questions from the Chapter 5 review exercises. At the lesson level, the chapter resources in the online teacher resources at the beginning of each chapter recommend using "Lesson App" handouts as formative assessments. Examples of these assessments include tasks like "Lesson App 5.1: Will the Train Arrive on Time?" and questions from Lesson 5.3 exercises.
- The materials also include formative assessments for the lessons with questions throughout the lesson, bell ringers, and exit tickets found in the *Teacher's Edition*.
- The materials do not include diagnostic assessments at the unit or lesson level. There are no pretests, self-assessments, or discussion prompts for diagnostic assessment. The "Stat Applied" assessment at the beginning of each chapter does not measure understanding of mathematical concepts and skills.

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

- The materials do not include the definition and intended purposes for any type of included instructional assessments. For example, in the online teacher resource, the Chapter 5 test handout includes only test questions and solutions for two sections: multiple-choice and free response. The materials do not clarify their purpose of evaluating learning, skill acquisition, and achievement.
- The digital platform contains materials with lesson-based and chapter-based questions. These questions are categorized by topic and Bloom's taxonomy. However, the platform does not offer guidance for instructional decisions. The assessment data displays performance percentiles by unit or subunit, but it does not include baseline data on a student's foundational knowledge or proficiency.

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

- The materials do not include guidance to ensure consistent administration, such as time allotted to complete different types of assessments nor recommendations for breaking long assessments across class periods.
- The materials in the online teacher resources include teacher guidance to ensure accurate administration of instructional assessments and consistently provide full solutions for quizzes, chapter practice tests, lesson handouts, and chapter exercises. For example, in Chapter 1, there are "Teaching Tips" throughout each lesson that include guidance to the teacher for administering tasks and assessments.
- The materials on the digital platform include guidance for editing or resetting scores on assessments. According to the "Achieve: Editing/Resetting Scores or Attempts on an Assessment" guide, materials provide step-by-step instructions for measures such as marking

full credit, which gives students 100 percent on selected questions, and marking partial credit, which gives students partial credit on selected questions. The guidance notes the reset attempts option is unavailable for assessments with a multi-take quiz grading policy. For example, for the Chapter 1 test and other book-based questions, online platform materials specify policies, such as unlimited attempts per question, -5 percent partial credit for incorrect attempts, no time limit, immediate feedback on each question, solution explanations available after completing each question, access to supplemental resources, and no late submissions. The materials do not include the time to administer each task.

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

- The materials do not include diagnostic, formative, and summative assessments that are aligned to the TEKS and objectives of the course, unit, or lesson. The materials provide a summary for each chapter in the online *Teacher's Edition* but do not state objectives. For example, "The Big Picture" for Chapter 8 states, "Chapter 8 is about estimating population parameters with some level of confidence."
- Diagnostic, formative, and summative assessments are not aligned to the TEKS and objectives of the course, unit, or lesson. The materials on the digital platform offer a question bank for assessing each chapter, including book-based, additional, and test questions. The materials organize questions based on difficulty level, Bloom's taxonomy, question type, and topic, rather than aligning them with TEKS or lesson objectives. Assessments only provide information such as question type, grading type, and topic, without alignment to TEKS or lesson objectives.

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

- The materials do not include assessments aligned to the standards. The materials do include questions and a question bank with various levels of complexity in the online assignments. For example, in Chapter 4's recommended assignment, one can view Bloom's taxonomy, Webb's Depth of Knowledge, and difficulty levels for each question; none of which are aligned to any standard.
- In the Teacher Resources, the materials include formative and summative assessments at varying levels of complexity such as multiple-choice, passage completion, numeric entry, and sorting questions; none of these questions are aligned with TEKS standards. On the digital platform, the materials offer a question bank with assessments, categorized by difficulty (from easy to hard), Bloom's taxonomy, question type, and topic.

Progress Monitoring

2.2	Data Analysis and Progress Monitoring	2/4
2.2a	Instructional assessments and scoring information provide guidance for interpreting and responding to student performance.	**1/2**
2.2b	Materials provide guidance for the use of included tasks and activities to respond to student trends in performance on assessments.	**0/1**
2.2c	Materials include tools for students to track their own progress and growth.	**1/1**

Instructional assessments and scoring information provide guidance for interpreting student performance. Instructional assessments and scoring information do not include guidance for responding to student performance. Materials do not include guidance for the use of included tasks and activities to respond to student trends on assessment performance. Materials do include tools for students to track their own progress and growth.

Evidence includes, but is not limited to:

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

- The materials include comprehensive guidance of instructional assessments and scoring information for interpreting student performance. The online platform "Insights" tab allows teachers to leave feedback, and several reports are accessible to interpret student performance, including course-level reporting, performance by unit, learning objective, student, subunit, and assignment. According to the "Achieve: Using Report" teacher guide, the "Reports" link in the left navigation menu of the "Achieve" course provides access to more detailed reports. The materials include detailed scoring information, highlighting students' strengths, weaknesses, gaps, and common misconceptions through the progress monitoring programs available under the "Reports" tab of the digital platform. On the "Reports" tab, the "Course Performance Report" presents three summary reports at the course level: the "Average Rubric Scores" report, the "Reflection Snapshot," and the "Are students reviewing my feedback?" report. The materials in this teacher guide do not include any instructional activities that address students with varying performance levels.
- The materials do not include guidance for teachers to respond to instructional assessments and scoring information based on student performance. In the digital platform under the "Teacher Resource" section for each chapter, the materials guide teachers on how to interpret student performance on assessments and reflect on levels of understanding and proficiency. For example, in Lesson 3.1, the scoring information offers a policy for teachers to give -5 percent partial credit for incorrect attempts. In the online 3.1 recommended assignment, problem "A smash or a hit?" the materials provide nine possible incorrect answers students

may select, and feedback is provided directly to the student. The materials do not provide support for educators to respond to students' performance with feedback.

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

- The materials do not include instructional strategies to support students in addressing their performance. According to the "Achieve: Using Report" guide, in the "Student Reports" section, the "View Unit Report" button provides detailed information about a student's performance on a specific unit, including the number of learning objectives where the student scored below 60 percent and the overall percentage of unit achievement. The materials do not include guidance for teachers on how to follow up with tasks and activities to improve student performance.
- The materials do not provide guidance on using the included tasks and activities to address student performance trends on assessments. According to the "Achieve: Using Report" teacher's guide, the materials offer various types of reports that display student performance trends. While the guide explains how teachers can create "Top Draft Goals with Revision" tasks under the "Insights" tab to monitor students' progress in building their revision plans, it does not include instructional strategies for addressing trends in assessment data, such as student achievement below, at, or above proficiency levels.

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

- The materials include tools for students to track their own progress. In the "Insights" tab of the online "Teacher Resource Materials," students can set goals themselves, reflect on their progress, determine actions they can take to reach their goals, and develop effective learning strategies.
- The materials include an online gradebook where students can track their progress on chapter assessments. Students can access the grade book for a course by clicking on the "Grades" button on the left menu on their main course page. For example, online gradebook materials include tools that allow students to revisit errors from assessments to understand what they know and identify areas for further learning. Students can access the percentage of correct answers for each assessment via the grading settings column on the left side. The students can utilize the "Feedback" tab located at the top of the page to gain insights into their mistakes.

Supports for All Learners

3.1	Differentiation and Scaffolds	6/8
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.	**1/3**

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

Evidence includes, but is not limited to:

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

- The materials include guidance on differentiation instruction options, such as teaching tips and lesson app videos, throughout lessons, but differentiation is not solely focused on students who have not yet reached proficiency on grade-level content and skills. For example, in the *Teacher's Edition*, in Chapter 8, Lesson 8.1, "Teaching Tips: Differentiate" states, "Remind students that statisticians frequently use the word *plausible* as a substitute for *reasonable*." In Chapter 2, Lesson 2.1 in the "Teaching Tip: Lesson App Videos" in the online teacher resources, materials indicate that you can use "Lesson App Videos" to differentiate instruction, provide remediation, or summarize a lesson to reinforce student understanding. This is not specifically catered to students who have not reached proficiency.
- The materials include differentiated activities for students who have not yet reached proficiency on grade-level content and skills. In the *Teacher's Edition*, there are several activities included for students struggling with the concept. Differentiated activities with teacher guidance are included in the digital platform materials with activities of various difficulty levels, ranging from easy to hard, based on Bloom's taxonomy. For example, in Chapter 11, "Practice Test 13" materials include a four-step process to perform a *t*-test for the slope of a least-squares regression line in the "Default Feedback" section.

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

- The materials include, in the *Teacher's Edition*, embedded supports for unfamiliar vocabulary in "Common Error" tips in chapter lessons. For example, in Chapter 1, Lesson 1.1, there is a "Common Error" about the term distribution, indicating it can be confusing to students the first time they encounter it and what to emphasize with students to guide them.
- The materials include embedded supports for references in the text in both the teacher and student textbooks. For example, in Chapter 4, Lesson 4.5, after defining confounding, the text reads, "The easier way to identify confounding in an observational study is to think about other variables that are associated with..."
- The materials include pre-teaching or embedded supports for unfamiliar vocabulary and references in the textbooks. The digital platform of student resources includes embedded links to Quizlet flashcards for each chapter. For example, Chapter 6, which covers random variables, includes a Quizlet flashcard with the definition of the mean (expected value) of a discrete random variable explained as the long-term average outcome of many repetitions of the same chance process.

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

- The materials provide teacher guidance for enrichment activities for students who have demonstrated proficiency in grade-level content and skills. For example, in the "Teaching Tips: Differentiate" section of Lesson 6.2 in the *Teacher's Edition* textbook, materials suggest students seeking an extra challenge visit their state lottery's website to find the probabilities and dollar amounts for various lottery games. This activity enriches students' understanding of analyzing discrete random variables. Each lesson includes exercises with questions for "Applying the Concepts" and "Extending the Concepts." Materials include exercise solutions in the teacher's textbook and online resources.
- The materials do not include teacher guidance for differentiated instruction or extension activities for students showing proficiency in grade-level content and skills. The materials provide guidance for integrating videos into the standard lesson but do not include instructions for differentiating instruction and extension activities to challenge proficient students. For example, in Chapter 6 of the online teacher resources, there is an additional Chapter 6 resources handout. This handout includes embedded links to the Annenberg Learner Video Series: "Against All Odds," and teacher guidance to use the first video after Lesson 6.2 and the second video after Lesson 6.3.

Supports for All Learners

3.2	Instructional Methods	12/13
3.2a	Materials include prompts and guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learned explicitly (directly).	**6/6**
3.2b	Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches.	**4/4**
3.2c	Materials support multiple types of practice (e.g., guided, independent, collaborative) and include guidance for teachers and recommended structures (e.g., whole group, small group, individual) to support effective implementation.	**2/3**

The materials include prompts and direct guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learned explicitly (directly). Materials include teacher guidance and recommendations for effective lesson delivery and facilitation using a variety of instructional approaches. Materials include multiple types of practice (e.g., guided, independent, collaborative) with guidance for teachers. Materials include recommended structures (e.g., whole group, small group, individual) to support effective implementation. Materials do not include guidance for teachers 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).

- The teacher materials include prompts and comprehensive guidance to support teachers in modeling, explaining, and directly communicating the concepts to be learned. Each lesson in the *Teacher's Edition* textbook materials includes activities for independent and collaborative practice. For example, Lesson 9.1: "Activity Spinner Base," materials include guidance for facilitating class discussions after students graph their results and specific guiding questions. The *Teacher's Edition* includes "Teaching Tips: Differentiate" for the activity "I'm a Great Free-Throw Shooter!", emphasizing that chance can never be completely ruled out as a plausible explanation, as even rare events can occur by chance.
- The materials include guidance to support the teacher in modeling, explaining, and communicating the concept(s) to be learned directly and explicitly in "StatsMedic" lesson plans that support the teacher with day-by-day guidance on lessons and activities. In "StatsMedic," for Lesson 9.1, materials provide a detailed "Tasks/Action" section, giving an outline of the activity. They recommend addressing question 1 with the whole class before having students work in groups on the remainder of the activity titled "Is Mrs. Gallas a Good Free-Throw Shooter?"
- The online teacher resource materials include guidance on modeling concepts. For example, in Lessons 5.5–5.8 "Overview Video," materials model how to complete the examples and then follow with "Cautions and Errors."

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

- The online materials, "StatsMedic," include guidance and recommendations on the instructional approach "Experience First." For example, in Chapter 5, Day 7, the materials state, "Be ready to support students when they are working in their groups on questions 9–12. Here are some cues to have ready..." While these resources are included in the "StatsMedic" resource, they are scattered and extremely difficult to find.
- The online materials, "StatsMedic," include teacher guidance and recommendations for effective lesson delivery using a variety of instruction approaches such as "Read, Discuss, Write," "Small Group Engaging Activities," and "Check for Understanding" problems.
- The Teacher's Edition includes guidance and recommendations for teachers to deliver and facilitate lessons effectively using a variety of instructional approaches. Every lesson includes "Bell Ringer" activities and "Teaching Tips" sections to support explicit and effective delivery. For example, in the "Teaching Tips: Differentiate" section of Lesson 9.2, which focuses on testing a claim, materials suggest that teachers highlight the table in Figure 9.2. Using this graphic organizer, some students gain a better understanding of these concepts.

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

- The materials include a variety of options and resources for students to practice and apply concepts learned (whole group, small group, individual, project-based). Materials include independent practice at the end of each lesson in both the teacher and student textbooks. Materials include collaborative practice through activities included in the *Teacher's Edition* textbook. For example, Lesson 5.2 contains an activity called "Who Will Win the Last Banana" in which students must work together to collect data to complete the activity.
- The materials provide clear headings and labels to support the teacher in differentiating between the different types of practice (whole group, small group, and independent) used in the lesson structure. For instance, in Chapter 4 "Response Bias Project and Rubric" document from the online teacher resources, materials include detailed guidance and a rubric for collaborative practice. Teachers assign small groups of students to investigate different types of bias that can affect survey responses. The scoring rubric includes five categories. Each textbook lesson includes "Building Concepts and Skills" exercises for independent practice.
- The materials include recommended structures (e.g., whole group, small group, individual) to support effective implementation. For example, in the "Teaching Tips" section of Lesson 7.2 in the *Teacher's Edition*, materials recommend that teachers conduct a brief class discussion on Exercise 19 after students have had the opportunity to try the exercise independently. In the "Teaching Tips" for Lesson 5.1, materials guide teachers to assign specific exercises to help students focus and assess their understanding as they read the lesson.

- The materials do not include teacher guidance for effective implementation. Materials "Effective Classroom Practice" and "Lesson by Lesson Content Overview" sections do outline key concepts for each lesson, but they do not include the essential routines for effective instructional practices to create a supportive learning environment.

Supports for All Learners

3.3	Supports for Emergent Bilingual Students	0/11
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.	**0/2**
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.	**0/8**
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 do not 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 do not include implementation guidance to support teachers in effectively using materials in state-approved bilingual/ESL programs. Materials do not include embedded guidance for teachers to support emergent bilingual students in developing academic vocabulary, increasing comprehension, building background knowledge, and making cross-linguistic connections through oral and written discourse.

Evidence includes, but is not limited to:

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

- The materials do not include teacher guidance on offering linguistic accommodations for different levels of English language proficiency, as defined by the English Language Proficiency Standards (ELPS). These standards aim to engage students in progressively using more academic language. Although the materials include embedded links to Quizlet English and Spanish flashcards, they do not include the corresponding ELPS standards for those activities.
- The materials do not include dedicated sections in the lessons for different levels of language proficiency. The *Student Edition* textbook and digital platform provide glossaries for academic vocabulary in English and Spanish, that do not incorporate the ELPS standards.

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

- The materials do not include implementation guidance to help teachers effectively use them in state-approved bilingual/ESL programs, and there is no implementation support for teachers of emergent bilingual students. For example, the online resources include lesson and chapter overview videos, but these videos only have English subtitles. Materials include the lecture presentation slides in the *Student Edition* to highlight the important ideas and vocabulary in each section. These materials do not make explicit references to the ELPS.
- The materials do not include implementation guidance to support teachers in effectively using them in state-approved bilingual/ESL programs. For example, in Chapter 7 of the *Teacher's Edition* textbook, there is a "Pay Attention to Vocabulary" section under "Effective Classroom Practice," which guides differentiating between the distribution of the population, the distribution of a single sample, and the sampling distribution. This guidance does not address information related to 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.

- The materials do not include embedded guidance to help teachers 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 Spanish-English glossaries at the end of the online *Teacher's Edition* and English-Spanish flashcards for each chapter, but they do not provide instructions on how teachers can use these resources to support emergent bilingual students.
- In the "Effective Classroom Practice" section of the *Teacher's Edition* for some chapters, materials include general guidance for academic vocabulary. For example, in Chapter 4, materials provide a "Mind the Vocabulary" part under the "Effective Classroom Practice" section. This part advises teachers to help students organize their vocabulary into two different realms: observational studies and experiments. In Chapter 7, the "Pay Attention to the Vocabulary" section discusses the differences between the distribution of the population, the distribution of a single sample, and the sampling distribution. However, the materials do not include strategies for building vocabulary, comprehension, background knowledge, and language proficiency, nor do they spiral previously learned vocabulary.

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

- Materials include Spanish-English glossaries at the end of the online Teacher's Edition and English-Spanish flashcards for each chapter, but they do not provide instructions on how

teachers can use these resources to support emergent bilingual students. Materials are not designed for dual language immersion (DLI) programs.

Depth and Coherence of Key Concepts

4.1	Depth of Key Concepts	3/3
4.1a	Practice opportunities over the course of a lesson and/or unit (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS.	**1/1**
4.1b	Questions and tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards.	**2/2**

Practice opportunities over the course of a lesson and/or unit (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS. Questions and tasks progressively increase in rigor and complexity, leading to grade-level proficiency in the mathematics standards.

Evidence includes, but is not limited to:

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

- The materials include practice opportunities throughout each unit at the end of each lesson. These practice opportunities vary in depth of understanding and are aligned with the TEKS. The online "Teacher Resource Materials" (TRMs) for each lesson include recommended practices that show various levels of complexity. For example, Chapter 4, Lesson 4.6 includes questions labeled as Level 2 (Skill Concept) and Level 3 (Strategic Thinking) on Webb's Depth of Knowledge model, and Level 2 (Understanding) and Level 3 (Applying) on Bloom's taxonomy scale.
- The materials include instructional assessments that meet the depth of understanding required by the TEKS. For example, Chapter 5 in the *Student Edition* eBook provides an overview of the main points, a chapter review exercise, and a chapter test divided into multiple-choice and free-response sections. In the "Teacher Resources Materials" (TRMs) for Chapter 5, there is a learning targets grid document that lists all learning targets for each lesson, along with the corresponding examples page numbers, exercise numbers, and chapter review exercises related to each learning target.

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

- The materials include questions that progressively increase in complexity, leading to grade-level proficiency. For example, in the preface of the Teacher's Edition "Using the Teacher's Edition and Resources Effectively," under "Exercises" it states, "Homework exercises in each lesson are classified as Building Concepts and Skills (reading comprehension), Mastering Concepts and Skills (parallel to worked examples), Applying the Concepts (combine several

learning targets from the lesson), Extending the Concepts (for differentiation and challenge), and Review and Recycle."

- The materials include a variety of assessment tasks with varying and increasing levels of complexity to allow students to demonstrate a depth of understanding aligned with the learning targets in the lesson. For example, in Chapter 1, Lesson 1.1, the lesson begins with an engagement activity, two exercises that increase in complexity with the knowledge learned, and a "Lesson App" that shows formative mastery of the lesson to the teacher.
- The materials include TEKS-aligned tasks that progressively increase in rigor and complexity. Lesson 4.3 includes a "Bell Ringer," three worked examples in the Student Edition, and some additional alternate examples the teacher can use in the Teacher's Edition. Exercises at the end of Lesson 4.3 progress in level of difficulty from true/false questions to application problems.

Depth and Coherence of Key Concepts

4.2	Coherence of Key Concepts	9/12
4.2a	Materials demonstrate coherence across courses/grade bands through a logically sequenced and connected scope and sequence.	**0/2**
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 do not demonstrate coherence across the course/grade bands through a logically sequenced and connected scope and sequence. Materials demonstrate coherence across units by explicitly connecting patterns, big ideas, and relationships between mathematical concepts. Materials demonstrate coherence across units by connecting the content learned in previous courses/grade levels and what will be learned in courses/grade levels to the content to be learned in the current course/grade level. Materials do not demonstrate coherence across units by connecting the content and language learned in previous courses/grade levels and what will be used in future courses/grade levels and what will be learned in future courses/grade levels to the content to be learned in the current course/grade level. Materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current and prior grade level(s) to the new mathematics knowledge and skills.

Evidence includes, but is not limited to:

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

- The materials do not demonstrate coherence across courses through a logically sequenced and connected scope and sequence, nor do they provide a scope and sequence or vertical alignment documents. Instead, they offer learning targets for each chapter and lesson in the *Teacher's Edition*, *Student Edition* eBook, and the chapter learning target grid document in the "Teacher Resource Materials" (TRMs).
- The materials lack coherence across course bands and do not have a logically sequenced scope and sequence. However, they do include a pacing guide and "Lesson Overview" videos to help teachers connect learning targets in the lessons. For example, in Chapter 2, Lesson 2.1, there is a "Lesson Overview" video that reviews concepts and skills from previous school years, along with a pacing guide that directs the teacher on the big ideas in the lesson. However, the materials do not have a scope and sequence that includes the math standards.

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

- The materials demonstrate coherence across units by explicitly connecting patterns. Prior to beginning each chapter, there are blue pages that outline "Effective Classroom Practice" that identify patterns, big ideas, and concepts throughout the units. For example, Chapter 8 states, "The four-step process is introduced in this chapter as a framework for organizing the work and communication required for confidence intervals. The four-step process will be featured in all the remaining chapters of this text."
- The materials demonstrate coherence across units by explicitly connecting patterns between mathematical concepts. For instance, in the "Teaching Tips" of Lesson 3.2 titled "Relationships Between Two Quantitative Variables" in the Teacher's Edition eBook, the materials state, 'Whether describing the distribution of one variable as in Chapter 1 or describing the association between two variables as in Chapter 3, the process is the same."
- The materials demonstrate coherence across units by explicitly connecting relationships between mathematical concepts. In the Teacher's Edition textbook, each chapter begins with a "The Big Picture" section that explains connections between math concepts in the new unit and previous and future units. For example, in "The Big Ideas" section of Chapter 1, materials explain the relationship of math concepts from Chapter 1 to Chapter 11. Chapter 1 focuses on numerical and graphical data summaries for a single variable. Chapter 2 introduces mathematical tools for data analysis. Chapter 3 extends these concepts to relationships between two variables. Data collection methods are covered in Chapter 4, while Chapter 5 introduces fundamental probability concepts. Chapters 6 and 7 analyze distributions of random variables and sample statistics. Finally, Chapters 8–11 discuss statistical inference, using sample data to make broader population inferences. The materials state to analyze the sample data in Chapters 8–11 using the graphs and calculations covered in Chapter 1.

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

- The materials are vertically aligned and connect mathematical content to what was learned in previous courses. For example, in the blue pages for Chapter 2 under "Effective Classroom Practice," number 4 states, "Review prior mathematical skills: Your students will encounter a few area formulas from geometry and need a few equation-solving techniques from algebra." Another example can be found in the "Bell Ringer" in Lesson 3.5, which asks students to "recall previous algebra classes and write down everything you can remember about the equation on a line and its properties."
- The materials do not explicitly state which language was learned from previous courses. Although certain terms from previous courses can be found, the materials do not explicitly state which courses the language is from.

- The materials do not demonstrate coherence across units by connecting the language learned in previous courses to the content to be learned in the current course. For example, in the Teacher's Edition "Teaching Tips: Differentiate" section of Lesson 3.5 on "Regression Lines," materials explain that proficient algebra students can select two points that seem to fit the linear pattern well and apply their algebraic skills to derive a regression equation for a line based on these points. While Lesson 3.5 illustrates how students learn to identify points to determine a linear pattern and connect it to the concept of regression lines, the materials do not demonstrate a coherent connection between this and content and language learned in previous grade levels/courses.
- The materials demonstrate coherence across units by connecting what will be learned in future courses, careers, or life after school to the content to be learned in the current course. For example, the "Everyday Stats" sections throughout the textbooks tell how the concept(s) being learned in that lesson applies to situations in life after this course. For instance, Chapter 3, Lesson 3.5 "Everyday Stats" states, "Regression lines are often called 'trend lines' or 'lines of best fit' by scientists and the news media."

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

- The materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from the current course to new mathematical knowledge. For example, a teaching tip from Lesson 10.1 in the Teacher's Edition textbook states, "Tell students they don't have to learn new conditions! These conditions resemble those learned in Lessons 8.3 and 9.3 but are applied to each of two different samples or groups."
- The materials reference using algebraic concepts and procedures throughout the text. For example, in the Teacher's Edition Lesson 2.6, a teaching tip states, "The learning targets in this lesson are easier if students have just a little algebraic skill. Consider doing a short review of solving linear equations and systems...."
- The materials demonstrate coherence at the lesson level through the learning targets of the chapter lessons. For example, in Chapter 2, "Unit Overview," the Teacher's Edition textbook gives guidance to review formulas from Geometry and Algebra and build in a quick review of the formulas before they teach the new lesson.
- The materials demonstrate coherence at the lesson level by connecting students' prior knowledge of concepts and procedures from previous grade levels to new mathematical knowledge and skills. For example, in "Teaching Tip: Differentiate" of Lesson 10.5 on "Paired Data: Estimating a Mean Difference" in the Teacher's Edition eBook, materials challenge strong algebra students to provide an algebraic proof that the mean difference is equivalent to the difference in means. Additionally, in the "Teaching Tip" of Lesson 6.3 on Binomial Random Variables, materials mention that some students may have already encountered the binomial probability formula in their Algebra II class.

- The materials demonstrate coherence by connecting students' prior knowledge in the "Lesson Overview Videos," which review each of the learning targets, what prior knowledge students should know, and how to review the concepts with them to build mastery of skills. These videos are found in the online resources for the student and teacher.

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.

- The materials include spaced retrieval opportunities with previously learned concepts across lessons and units. "Bell Ringers" contained at the beginning of each lesson in the *Teacher's Edition* textbook have students recall previously learned concepts before the start of the lesson. For example, in Chapter 8, Lesson 8.6, the "Bell Ringer" at the beginning of the unit states, "Name the four-step process. What information must you communicate in each of these steps?" The four-step process was introduced earlier in the chapter. Again, in Lesson 9.5, the "Bell Ringer" states, "Thinking back to Lesson 8.5, what conditions were checked before constructing a confidence interval for μ. How were these conditions checked?"
- The materials include spaced retrieval opportunities for previously learned skills and concepts throughout lessons. For example, in Lesson 6.4 of the *Teacher's Edition* eBook, materials suggest students recall the binomial probability formula from Lesson 6.3 to compute probabilities for various scenarios. Similarly, in the *Teacher's Edition* textbook "Teaching Tip" section of Lesson 10.1, materials suggest students apply conditions learned in Lessons 8.3 and 9.3 to different sample or group comparisons.
- The materials include spaced retrieval opportunities with previously learned skills aligned with the TEKS. For example, in the textbook's Lesson 8.1 "Activity Exercises for Recycle and Review," skills and concepts from Chapter 1 and Chapter 4 are used to answer problems and activities learned in Lesson 8.1.
- The materials include spaced retrieval opportunities with previously learned skills aligned with the TEKS. For example, "Bell Ringers" are provided in every lesson, which spiral and review previously learned skills across lessons and units. For example, in Lesson 2.2, the "Bell Ringer" reviews how to create a dot plot and standard deviation from Chapter 1 to connect to the new lesson of transforming data by multiplying and dividing by a constant on the distribution of quantitative data.

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

- The materials include interleaved practice opportunities with previously learned skills and concepts across units in textbook exercises following each unit labeled "Recycle and Review." For example, Lesson 7.3 includes the problem "Waiting with intent (1.8, 4.8)," which requires students to combine skills learned in the previous chapter's Lessons 1.8 and 4.8.
- The materials include interleaved practice of previously learned skills across units in the textbook revisiting concepts in different contexts throughout the course. For example, materials suggest referring to Lesson 1.7 for hints on interpreting a standard deviation in the "Bell Ringer" of "Lesson 6.2: Analyzing Discrete Random Variables," where students are given a mean vertical jump of 16.9 inches and a standard deviation of 5.2 inches.
- The materials include interleaved practice opportunities with previously learned skills and concepts across lessons in "Review Exercises" located at the end of each chapter in the textbooks. For example, the end of Chapter 7 includes review exercises with questions that rely on skills and concepts from multiple lessons within the chapter. More specifically, for students to complete question 2, "Five Books (7.1, 7.2)," students must reference lessons 7.1 and 7.2 to answer the question successfully.
- Materials provide interleaved practice opportunities with previously learned skills and concepts across lessons. For example, in the "Sampling from a non-normal population" activity overview of Lesson 7.5 in the *Teacher's Edition* eBook, materials provide teaching advice as this activity contrasts with the activity from the previous lesson, where the population was approximately normal. Materials also include chapter review exercises with questions that relate to each lesson in the same chapter of the *Teacher's Edition* eBook. For example, in Chapter 5, the review exercises of the *Teacher's Edition* eBook, each question is linked to specific lessons. For example, review Exercise 1: "Live Longer and Prosper" relates to Sections 5.1 and 5.6.

Balance of Conceptual and Procedural Understanding

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

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

Evidence includes, but is not limited to:

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

- The materials include questions that require students to interpret, analyze, and evaluate a variety of models and representations of mathematical concepts and situations. For example, the exercises in the *Teacher's Edition* Chapter 1, Lesson 1.2 require students to interpret, analyze, and evaluate a variety of Venn diagrams and bar charts that represent different data sets.
- The materials include questions that require students to interpret, analyze, and evaluate various models and representations of mathematical concepts and situations. For example, exercise 25, "How well does it fit?" in Lesson 11.5 of both the *Teacher's Edition* and *Student's Edition* eBooks, includes a scatter plot showing the relationship between pretest and posttest scores, along with a residual plot based on the least-squares regression line, which students need to interpret, analyze, and evaluate.
- The materials include tasks that require students to interpret, analyze, and evaluate various models for mathematical concepts and situations. For example, in StatsMedic.com Lesson 1.3's activity "How Many Hours a Week Do You Work," students create two different dot plots to interpret, analyze, and evaluate the similarities and differences between the two models.
- The materials include tasks that interpret, analyze, and evaluate a variety of models for mathematical concepts and situations. For example, the "Teacher Resource Materials (TRMs)" include activities in Chapter 9, Lesson 9.1 with hands-on resources, and in the *Teacher's Edition* and *Student's Edition* eBook, there are embedded examples that encourage critical thinking for that same lesson.

- The materials include tasks that require students to interpret, analyze, and evaluate various models and representations of mathematical concepts and situations. For example, in StatsMedic.com "Lesson App" 2.1, "A House Divided!" this task includes a dot plot of the number of representatives from each of the 50 states in 2019, along with summary statistics. Students are then required to interpret, analyze, and evaluate the dot plot.
- The materials include tasks that require students to interpret, analyze, and evaluate various models and representations of mathematical concepts and situations. For example, in StatsMedic.com "Lesson App" 3.3, "If I Eat More Chocolate, Will I Win a Nobel Prize?" this task requires students to interpret, analyze, and evaluate a scatterplot showing the relationship between chocolate consumption per resident and the number of Nobel Prizes per 10 million residents in each country.
- The materials include questions and tasks that provide problem scenarios to prompt students to engage with a variety of models and representations to interpret, analyze, and evaluate various concepts. For example, in Chapter 3, Lesson 3.5, students are prompted to make predictions using regression lines, calculate and interpret a residual, and interpret slope and *y*-intercept using graphs, technology, and calculation exercises.

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

- The materials include questions that require students to create a variety of models to represent mathematical situations. For example, in Chapter 1, Lesson 1.2 "Tech Corner," students are required to create a bar chart and pie chart using technology. Other examples in Chapter 1 include questions and tasks that have students interpret, analyze, and evaluate using data graphs, such as histograms, dot plots, stem plots, and boxplots.
- The materials include questions that require students to create various models to represent mathematical situations. Lesson exercises allow students to apply their knowledge in model creation. For example, in Lesson 7.1 of both the *Teacher's Edition* and *Student's Edition* eBooks, students must display the sampling distribution of the sample mean on a dot plot. The "Teaching Tips" in the *Teacher's Edition* suggest that students can create and view an entire sampling distribution through these exercises.
- The materials include tasks that require students to create a variety of models to represent mathematical situations. For example, in StatsMedic.com the Chapter 1, Day 2 activity "What is Your Social Media?" students are required to collect data from the class and create bar charts and a pie chart.
- The materials include tasks that require students to create various models to represent mathematical situations. Activity handouts in the "Teacher's Resource Materials (TRMs)" for each chapter include "Teacher's Notes," guiding teachers to have students create models. For example, in the "Teacher's Notes" for "Chapter 6: What's in a Stradivarius?" students solve a task where violinists choose a replacement instrument. To represent this situation, students create a class dot plot by combining their results.

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

- The materials include questions that provide opportunities for students to apply conceptual understanding to new problem situations and contexts. For example, in the *Teacher's Edition* Chapter 4, Lesson 4.2, exercise question 20 gives information on how to advertise a club at school. The questions that follow provide students the opportunity to explain why the sampling method was biased and create a method that would reduce bias in the situation in the context of using different sampling methods.
- The materials include exercises that provide opportunities for students to apply conceptual understanding to new problem situations and contexts. For example, in Chapter 4, Lesson 4.1 exercises are provided for building concepts and skills as well as mastering concepts and skills using problem situations.
- The materials include tasks that allow students to apply their conceptual understanding to new problem contexts. For example, in Lesson 3.5, materials present an alternate example, "Do corallites love light?" for students to apply the concept of a residual. The "Teaching Tips" in the *Teacher's Edition* eBook provide a new explanation for a residual: "Another name for a residual is a prediction error. Tell students that in this context, the word error doesn't mean that there is a mistake, but that the predicted *y* value didn't perfectly predict the actual y value—it wandered (erred) from the true value." Additionally, the Teaching Tips in this lesson mention a relevant StatMedic.com blog post titled "A Math Lesson for MLK Day." The blog post includes the activity "Why Do Some Schools Do Better Than Others?" where students apply their knowledge of the line of best fit to make predictions and calculate and interpret a residual.

Balance of Conceptual and Procedural Understanding

5.2	Development of Fluency	8/12
5.2a	Materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade-level tasks.	**2/2**
5.2b	Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and/or throughout a unit.	**3/3**
5.2c	Materials provide opportunities for students to evaluate procedures, processes, and solutions for efficiency, flexibility, and accuracy within the lesson and throughout a unit.	**2/6**
5.2d	Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches.	**1/1**

The materials include tasks that are designed to build student automaticity and fluency necessary to complete grade-level tasks. Materials include opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures within the lesson and/or throughout each unit. Materials include opportunities for students to evaluate procedures, processes, and solutions for accuracy within the lesson and throughout a unit. Materials do not include opportunities for students to evaluate procedures, processes, and solutions for efficiency or flexibility within the lesson and throughout a unit. Materials contain embedded supports for teachers to guide students toward increasingly efficient approaches.

Evidence includes, but is not limited to:

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

- The materials include tasks that are designed to build student automaticity. For example, in the *Teacher's Edition* Chapter 8, Lesson 8.2, the exercises include multiple open-ended questions prompting students to explain variations in confidence intervals by adjusting confidence levels and sample sizes without requiring any calculations.
- The materials include tasks that are designed to build student fluency. For example, in the *Teacher's Edition* Chapter 5, Lesson 5.2, students complete the task of creating probability models and calculating probabilities based on the models.
- The materials include tasks that are designed to build student fluency necessary to complete grade-level tasks. For example, the online student resources include flashcards for Chapter 5, Lesson 5.4, and additional exercises and examples.
- The materials include tasks designed to build student automaticity and fluency necessary to complete grade-level tasks, including the TEKS. They also provide quick daily math routines, such as "Bell Ringers," that reinforce key concepts and skills of the learning targets, as well as "Recycle and Review" exercises in every lesson.
- The materials provide tasks that are designed to build student automaticity and fluency necessary to complete grade-level tasks. Materials include an online platform where students

build math fluency through interactive exercises and games. Both *Student Editions* and *Teacher's Editions* include "Lesson Apps" with videos for each lesson. For example, in Lesson 8.1, "The Idea of a Confidence Interval," the *Student Edition* eBook contains Lesson App 8.1, "Have you ever traveled internationally?" This app helps students interpret confidence intervals and calculate the point estimate and margin of error based on a random sample of U.S. adults who have traveled internationally.

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

- The materials include student opportunities to practice efficient, flexible, and accurate mathematical procedures within lessons and throughout units. Both the Student Edition eBook and Teacher's Edition eBook feature approximately 25–30 exercises per lesson to assess mastery of learning targets, including "Applying the Concepts" and "Extending the Concepts" sections. Solutions for these exercises are available in the online "Teacher Resource Materials (TRMs)." Additionally, each chapter ends with "Stats Applied!" practice, where students apply statistical techniques learned to solve real problems. For example, in Chapter 7, "Sampling Distributions," the Student Edition eBook includes "Stats Applied: How can we build 'greener' batteries?" requiring students to calculate the mean and standard deviation of the sampling distribution for various random battery samples.
- The materials include activities that require students to develop procedural skills and fluency through practical application. Materials include a "TECH Corner" in every chapter of the textbooks, guiding students in using applets or the TI-83/84 graphing calculator for simulations and generating graphs and summary statistics. For example, in Lesson 6.4, the "TECH Corner" offers the "Binomial Probabilities Involving Several Values with Technology" applet. This applet helps students calculate binomial probabilities using technology, which they then apply to the "Can you tell bottled water from tap water?" example. The materials include solutions for this example to ensure accurate procedures in the "Teacher Resource Materials (TRMs)."
- The materials include multiple practices for students to determine efficient, flexible, and accurate mathematical procedures. For example, in the Teacher's Editon Chapter 7, Lesson 7.5, exercises allow students to choose between using a formula to solve for probabilities or using technology to get the same answer.

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

- The materials include procedures for mathematical processes. For example, in the Teacher's Edition Chapter 9, Lesson 9.4, the four-step process for completing statistical questions is described. However, the materials do not include opportunities for students to evaluate the procedures for efficiency, flexibility, or accuracy.

- The materials include tasks and exercise questions; however, they do not include opportunities for students to evaluate procedures, processes, or solutions for completed efficiency, flexibility, and accuracy within lessons or throughout a unit's problems. In Lesson 5.3 of the Teacher's Edition eBook, teaching tips guide teachers to demonstrate that problems can often be solved in two different ways, using two-way tables and Venn diagrams to find probabilities, with examples such as "Do teens use Facebook or Instagram?" and "Can you taco tongue or evil eyebrow?" However, the materials do not include prompts for students to evaluate the procedures, processes, and solutions for these demonstrations.
- The materials do not include opportunities for students to evaluate procedures, processes, and solutions for efficiency or flexibility, and accuracy within lessons or throughout a unit. For example, materials provide "Stats Applied" tasks related to real-world problems and opportunities for students to solve these tasks at the end of the chapter. However, while the materials outline the steps for solving the problems, they do not guide students in evaluating their procedures and processes for efficiency or flexibility.
- The materials include detailed solutions at the lesson and unit level to evaluate procedures, processes, and solutions. While there are not explicit prompts for students in the text, the following Student Edition textbook features strongly support student evaluation of processes and procedures: "STATS Applied! RESOLVED" walks students through a series of related questions that allow them to evaluate and apply relevant statistical techniques; the "Solutions Appendix" helps student review solution steps and the accuracy of their solution.

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

- The materials include embedded supports for teachers to guide students toward more efficient approaches. Each chapter includes online Teacher Resource Materials (TRMs), including overview videos, full exercise solutions, lesson app handouts, and TRMs folders. For example, the "Chapter 4 Response Bias Project and Rubric" document provides detailed guidance for a collaborative project. Teachers assign groups of 2-4 students to investigate different types of survey response biases. The scoring rubric evaluates five categories: introduction, data collection, graphs and summary statistics, conclusion, and presentation & communication.
- The materials include embedded supports for teachers with the video "Stats Medic Resources for SPA4e" teachers are introduced to resources on the StatsMedic.com website, which provides teacher guidance for each lesson. For example, in the "Activity: Should Flint Switch to Bottled Water?" for Lesson 9.2, materials recommend teachers monitor student progress on question #2 while they work in groups. It is crucial for students to have the correct hypotheses for the rest of the activity. During check-ins, teachers might ask, "So, does the null hypothesis suggest the water is safe or dangerous?"
- The materials contain embedded supports for teachers to guide students toward increasingly efficient approaches, with "Teaching Tips" in each lesson. For example, Chapter 8, Lesson 8.4 in the Teacher's Edition textbook contains a teaching tip that reiterates a process and guides teachers to encourage students to use technology for efficiency purposes.

Balance of Conceptual and Procedural Understanding

5.3	Balance of Conceptual Understanding and Procedural Fluency	14/16
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.	**6/6**
5.3c	Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts.	**8/8**

The materials do not explicitly state how the conceptual and procedural emphasis of the TEKS are addressed. Questions and tasks that use concrete models and manipulatives, pictorial representations (figures/drawings), and abstract representations. Materials include supports for students in connecting, creating, defining, and explaining concrete and representational models to abstract (symbolic/numeric/algorithmic) concepts.

Evidence includes, but is not limited to:

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

- The textbook materials include learning targets for each lesson in the "SPA4 TEKS Correlations with Breakouts" document, which lists relevant page numbers for TEKS, but it does not explicitly explain how the TEKS concepts are addressed. For example, Lesson 3.1 in the *Student's Edition* eBook includes learning targets focused on categorical variables, but it is not clear how they are tied to TEKS 4(F).
- The materials do not explicitly state how the procedural emphasis of the TEKS is addressed. For example, in Lesson 5.3 of the *Student's Edition* eBook, learning targets highlight procedural skills in using two-way tables and Venn diagrams to find probabilities. Additionally, the *Teacher's Edition* "Teaching Tips" guides teachers to show students that problems can often be solved in two different ways. The "SPA4 TEKS Correlation Chart" matches (Lesson 5.3, including the "Teaching Tips") with TEKS 1(D), which focuses on communicating mathematical ideas, reasoning, and implications using multiple representations. However, materials do not clearly explain how the learning targets in Lesson 5.3 are tied to TEKS 1(D), not just in the "Teaching Tips."

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

- The materials include questions and tasks that incorporate concrete models and manipulatives appropriate for the content and grade level. For example, the Chapter 1, Section 1.6 activity in the Teacher's Edition has students balance pennies on a ruler to

demonstrate the "balance point" of a distribution. The activity then asks students to discuss their findings with classmates. Another example in Lesson 5.1 of both the Teacher's Edition and Student's Edition eBooks includes the activity "What is Probability?" where students flip a coin several times to find the probability of getting heads or tails.

- The materials include questions and tasks that incorporate pictorial representations (figures/drawings) appropriate for the content and grade level. For example, in Lesson 1.2 of the eBooks, materials provide an alternate example titled "Will You Throw Me One Last Party?" This example uses pictographs of donuts, pasta, and pizza instead of bars. Another example is the exercises in Chapter 2, Lesson 2.3, which include figures for students to identify the appropriate mean and median of a graphical representation and explain their reasoning in an open-ended question.
- The materials include questions and tasks for the use of abstract representations, as appropriate for the content and grade level. For example, exercises in Chapter 3, Lesson 3.7 of the Student's Edition and Teacher's Edition textbooks, include abstract representations of residuals for students to determine the correct regression model for the data. In Lesson 5.2, materials provide "Can you avoid the blue M&M'S?" example for the complement rule. Another example is in Lesson 7.1 of the Teacher's Edition eBook, where materials provide the "A penny for your thoughts?" activity, which introduces students to sampling distributions by simulating repeated sampling from a population.

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

- The materials include supports for students in connecting, creating, defining, and explaining concrete models to abstract (symbolic/numeric/algorithmic) concepts. For example, in Lesson 5.2 of the StatsMedic website, materials provide the activity "Who Will Win the Last Banana?" which requires two players and a die to introduce basic probability rules.
- The materials include supports for students to connecting and creating abstract to concrete concepts. For example, the *Teacher's Edition* textbook "Tech Corner" in Chapter 3, Lesson 3.7, guides students through the process of creating a residual model for a regression using their calculators, successfully connecting the representational model to the abstract residual model.
- The materials support students in connecting, creating, defining, and explaining representational models to abstract concepts. For example, in StatsMedic "Lesson App" 3.3, "If I Eat More Chocolate, Will I Win a Nobel Prize?" requires students to connect and explain a scatterplot showing the relationship between chocolate consumption per resident and the number of Nobel Prizes per 10 million residents in each country, to estimate the correlation between two quantitative variables from the scatterplot.
- The materials include supports for students in defining and explaining abstract concepts. For example, in the *Teacher's Edition* textbook "Lesson App" 3.7 from Chapter 3, students are given a residual model and asked to determine the appropriate regression and interpret different values for the model.

Balance of Conceptual and Procedural Understanding

5.4	Development of Academic Mathematical Language	11/14
5.4a	Materials provide opportunities for students to develop their academic mathematical language using visuals, manipulatives, and other language development strategies.	**3/3**
5.4b	Materials include embedded guidance for the teacher addressing scaffolding and supporting student development and use of academic mathematical vocabulary in context.	**1/2**
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.	**7/9**

The materials provide opportunities for students to develop their academic mathematical language using visuals, manipulatives, and other language-development strategies. Materials include embedded guidance for the teacher addressing supporting student development and use of academic mathematical vocabulary in context. Materials do not include embedded guidance for the teacher addressing scaffolding 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 support mathematical conversations that provide opportunities for students to hear math language with peers. Materials include embedded guidance for the teacher to support the application of appropriate mathematical language to support mathematical conversations that provide opportunities for students to refine math language with peers. Materials include embedded guidance for the teacher to support the application of appropriate mathematical language to support mathematical conversations that provide opportunities for students to develop their math language toolkit over time. Materials include embedded guidance for the teacher to support the application of appropriate mathematical language to include vocabulary to support mathematical conversations. Materials include embedded guidance for the teacher to support the application of appropriate mathematical language to include syntax to support mathematical conversations. Materials include embedded guidance for the teacher to support student responses using exemplar responses to questions. Materials include embedded guidance for the teacher to support student responses using exemplar responses to tasks. Materials do not include embedded guidance for the teacher to support the application of appropriate mathematical language to support mathematical conversations that provide opportunities for students to use math language with peers. Materials do not include embedded guidance for the teacher to support the application of appropriate mathematical language to include discourse to support mathematical conversations.

Evidence includes, but is not limited to:

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

- The materials include opportunities for students to develop their academic mathematical language using visuals. For example, in Lesson 5.5 of the *Teacher's Edition* eBook, materials include an alternate example titled "Can you judge an e-book by its e-cover?" This example allows students to use a tree diagram to represent the sample space of a chance process, illustrating the probability of each outcome on the corresponding branch of the tree. Additionally, Lesson 2.3 provides visuals to describe the balance point of a density curve in both the *Teacher's Edition* and *Student's Edition*.
- The materials provide opportunities for students to develop their academic mathematical language using manipulatives. For example, in Lesson 5.1 of both the *Teacher's Edition* and *Student's Edition* eBooks, materials include the activity "What is Probability?" where students flip a coin several times to find the probability of getting heads or tails. In the "Activity Overview" in the *Teacher's Edition*, materials emphasize that the purpose of this activity is to reinforce the idea that "the definition of the probability of some outcome is the long-run proportion of times it would occur." Additionally, materials include the "Extension" activity with 10 thumbtacks in a small paper cup. This manipulative helps students develop true probability concepts as "the best estimate of the true probability is the total number of times a tack landed point down for the class divided by the total number of tosses for the class."
- The materials include opportunities for students to develop their academic mathematical language using other language-development strategies. For example, in Lesson 1.6 of the *Teacher's Edition* and *Student's Edition* eBooks, materials include the "Mean as a Balance Point" activity, where students work in pairs or small groups. This activity encourages students to develop their academic mathematical language by discussing with their classmates: Why is the mean called the "balance point" of a distribution?
- The materials include opportunities for students to develop a mathematical language using other language-development strategies, such as using sentence stems. For example, Lesson 8.1, in the *Student's Edition* textbook, shows students how to interpret a confidence by stating, "To interpret a C% confidence interval for an unknown parameter, say, 'We are C% confident that the interval from _____ to _____ captures the [parameter in context].'"

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

- The materials do not include embedded guidance for the teacher addressing scaffolding student development and use of academic mathematical vocabulary in context. Materials do not include language-development strategies for teachers such as word walls, vocabulary journals, sentence starters and frames, Think-Pair-Share activities, peer discussions, concept mapping, or writing assignments.
- The materials include embedded guidance for the teacher addressing supporting student development and the use of academic mathematical vocabulary in context. The *Teacher's Edition* textbook includes "Teaching Tips," "Common Errors," and an "Activity Overview." For

example, in Lesson 1.6 of both the *Teacher's Edition* and *Student's Edition* eBooks, there is a "Mean as a Balance Point" activity, where students collaborate in pairs or small groups. The materials also include a section on "Common Errors," advising teachers to specify that the median city gas mileage is 21 mpg instead of simply saying "the center" of the distribution is 21 mpg.

- The materials include guidance for the teacher supporting student development and use of academic mathematical vocabulary in context. For example, Lesson 8.1 contains a "Common Error" for teachers to determine common misinterpretations of confidence intervals. It states, "Confidence intervals can be tricky to interpret. The news is full of examples of poor interpretations! Teach your students to use this template for interpreting confidence intervals until they have a much more nuanced understanding." The text then proceeds to list examples of misinterpretations. In every chapter, "Teaching Tips" are provided to give guidance to teachers on how to help students develop and use the vocabulary in context throughout the lessons.

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.

- The materials include teacher guidance to support mathematical conversations, providing opportunities for students to hear and refine math language with peers. Over time, the students can develop a comprehensive math language toolkit. For instance, the materials feature an "Outliers and Least-Squares Regression Lines" activity in Lesson 3.6 of the *Teacher's Edition* eBook. The teaching advice in the "Activity Overview" indicates that the activity can be done in groups or as a class, followed by students working on it at home and discussing it the next day in class. Another example is in the activity in Chapter 4, Lesson 4.7 contains teacher guidance that states, "Guide the discussion to a calculation of the proportion of times..."
- The materials include embedded guidance to help teachers support the use of appropriate mathematical language, including vocabulary and syntax. For example, in Lesson 3.2, the materials offer sentence stems to guide student responses, and in Lesson 9.5, they outline the syntax for the TI-84 calculator function to calculate the *p*-value. Additionally, in Lesson 9.5, the materials clarify the *t* distribution as an adjustment to the standard normal distribution.
- The materials do not include embedded guidance to assist teachers in facilitating discourse during activities. The "Teaching Tips," "Activity Overviews," and "Teacher's Notes" do not include any detailed guidance to support teachers with discourse to support mathematical conversations.
- The materials include embedded guidance for teachers, including exemplar answers and suggested responses on the StatsMedic.com website. For example, in question 4 of Lesson 7.2, the activity "How Many Popsicle Sticks are in a Bag?" includes suggested dot plots for

Method 1 using the sampling distribution of the maximum and Method 2 using the sampling distribution of twice the median.

- The materials include embedded guidance for the teacher to support student responses using exemplar responses to questions and tasks. In Chapter 2 of the "Teacher Resources Materials (TRMs)," the materials provide the suggested responses for the "Lesson App" and exercises in Lesson 2.2. This is true for all units and lessons. StatsMed.com also provides detailed answer keys to activities.

Balance of Conceptual and Procedural Understanding

5.5	Process Standards Connections	1/6
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.	**0/2**
5.5c	Materials include a description for each unit of how process standards are incorporated and connected throughout the unit.	**0/2**
5.5d	Materials include an overview of the process standards incorporated into each lesson.	**0/1**

Process standards that are integrated appropriately into the materials. Materials do not include a description of how process standards are incorporated and connected throughout the course. Materials do not include a description for each unit of how process standards are incorporated and connected throughout the unit. Materials do not 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 incorporate content alongside the relevant process standards, as indicated in the "SPA4 TEKS Correlations Chart." For instance, the activity "Stats Applied: Are Fast-Food Drive-Thrus Fast and Accurate?" aligns with the mathematical process standard TEKS 1(A), which involves applying mathematics to real-world problems in everyday life, society, and the workplace. This alignment is documented in the "SPA4 TEKS Correlations Chart."
- Process standards are integrated appropriately into the materials. The materials integrate content and the appropriate process standard(s). For example, in Lesson 5.3 of the *Student's Edition* eBook, "Learning Targets" highlight procedural skills in using two-way tables and Venn diagrams to find probabilities. The "SPA4 TEKS Correlations Chart" matches (Lesson 5.3) with TEKS 1(D), which focuses on communicating mathematical ideas, reasoning, and implications using multiple representations.

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

- The materials provide the "SPA4 TEKS Correlations Chart" which lists relevant page numbers for TEKS. However, materials do not include a description of how process standards are incorporated throughout the course. For example, "SPA4 TEKS Correlations Chart" matches (Lesson 5.3, including the "Teaching Tips") with TEKS 1(D), which focuses on communicating mathematical ideas, reasoning, and implications using multiple representations.

- The materials do not include a description of the connections between process standards throughout the course. For example, the "SPA4 TEKS Correlations Chart" shows that mathematical process standard TEKS 1(E) connects with the content on in Lesson 1.4, "Displaying Quantitative Data: Stemplots," and in Lesson 5.3, "Two-Way Tables and Venn Diagrams." However, materials do not provide an overview and explanation of how the process standards are connected between these two different lessons.

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

- The materials do not include a description for each unit of how process standards are incorporated throughout the unit. For example, while the "SPA4 TEKS Correlations Chart" links the content to mathematical process standards TEKS 1(E) and TEKS 1(G), it does not explain how these standards are related.
- The materials do not include a description for each unit of how process standards are connected throughout the unit. For example, the "SPA4 TEKS Correlations Chart" shows that mathematical process standard TEKS 1(E) connects with the content in Lesson 1.4, "Displaying Quantitative Data: Stemplots," and in Lesson 1.5, "Displaying Quantitative Data: Histograms." However, the materials do not describe how the content in these two lessons is connected.

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

- The materials do not include an overview of the process standards incorporated into each lesson. Materials only provide the "SPA4 TEKS Correlations Chart" that lists relevant page numbers for TEKS. For example, while the "SPA4 TEKS Correlations Chart" links the content to mathematical process standards TEKS 1(E) and TEKS 1(G), it does not explain how these standards are related.
- The materials do not include an overview of the process standards incorporated into each lesson. For example, according to the "SPA4 TEKS Correlation Chart," the materials indicate TEKS 1(E) and for TEKS 1(A). Although these pages correspond to Lesson 1.4 in both the *Teacher's Edition* and *Student's Edition* eBooks, the "SPA4 TEKS Correlation Chart" does not specify this.

Productive Struggle

6.1	Student Self-Efficacy	13/15
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.	**4/6**
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 and explaining that there can be multiple ways to solve problems and complete tasks. Materials do not support students in 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 include opportunities for students to think mathematically. Materials contain segments throughout the course in the textbooks titled "Think About It" to provide opportunities for students to think mathematically. For example, in Lesson 2.2, the materials provide students the opportunity to think about the following: "What happens if we standardize all the values in a distribution of quantitative data?" Other examples can be found in the "Stats Applied" and "Lesson App" sections throughout each unit, which allow opportunities to think about mathematical questions both before and after learning new content.
- Materials include opportunities for students to persevere through solving problems. For example, in Lesson 8.4, students are given a step-by-step process for calculating the sample size given the Margin of Error. Then, they are provided with opportunities to practice in the lesson's exercises. There are also lesson videos available through online resources to assist students in preserving.
- Materials include opportunities to make sense of mathematics throughout every chapter by having students justify or interpret their answers. For example, in "Stats Medic" Lesson 2.1, "Describing Location in a Distribution," materials provide "Lesson App" 2.1, "A House Divided!" which includes a dot plot of the number of representatives from each of the 50 states in 2019, along with summary statistics. Students must then interpret, analyze, and evaluate the dot plot. Lesson 9.1 exercises are another example where students are asked to "explain why the data gives some evidence for Ha" and "Interpret the P-value."

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 that there can be multiple ways to solve problems and complete tasks. For example, in Chapter 1, Lesson 1.8, students can summarize quantitative data using box plots, dot plots, and data. Students are given guidance to help with an explanation of how to solve using multiple ways. In Chapter 6, Lesson 6.1, the examples provided in the textbooks describe how students can use the table or a technology applet to find the solution.
- Materials support students in explaining that there can be multiple ways to solve problems and complete tasks. For example, materials reference the StatsMedic blog post, "Best Friends Forever: Two-Way Tables and Venn Diagrams," relevant to Lesson 5.3. The post describes a scenario where 80 percent of East Kentwood High School students have Instagram, 60 percent have Twitter, and 45 percent have both. It shows students how to solve this problem using a two-way table and a Venn diagram, highlighting that the Venn diagram's four different spaces correspond to the four values in the two-way table.
- Materials do not support students in justifying that there can be multiple ways to solve problems and complete tasks. For example, in Lesson 5.3 of the *Student's Edition* eBook, learning targets emphasize using two-way tables and Venn diagrams to find probabilities. Additionally, teaching tips in the same lesson guide teachers to ask students to demonstrate that problems can often be solved in two different ways, but do not require students to show justification.

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, writing, and discussing math with peers and teachers. In the preface of the *Teacher's Edition* "Preparing to Teach On-Level Statistics" pages, there are multiple sections and bullet points that guide teachers to have "students summarize their knowledge with partners, small groups, the whole class and/or the instructor," tell teachers that "whenever possible, ask your students to talk, write, and think about the statistics they are studying," and advise teachers that "students should always to be encouraged explain their solutions to themselves, their peers, and to you."
- Materials are designed to require students to make sense of mathematics through doing, writing, and discussing math with peers. For example, in StatsMedic.com, all group work activities are completed by completing "Read Discuss Write": "READ: The Reader starts from the top of the page and reads. They stop at the end of the first question. DISCUSS: The group has a short discussion. Be sure to encourage everyone to participate. WRITE: Summarize your discussion by writing down an answer. I don't care if it's wrong or right, I just want to know what your group talked about."

- Materials are designed to require students to make sense of mathematics by discussing math with peers and teachers. For instance, materials feature an "Outliers and Least-Squares Regression Lines" activity in Lesson 3.6 of the *Teacher's Edition* eBook. The teaching advice in the activity overview indicates that the activity can be done in groups or as a class, followed by students working on it at home and discussing it the next day in class.
- Materials are designed to require students to make sense of mathematics through writing math with peers and teachers. For example, Lesson 9.1 on the StatsMedic.com website includes an activity called "Is Mrs. Gallas a Good Free Throw Shooter?" The "Experience First" section explains that students will learn about significance tests using a simulation. This foundation is built upon in Lesson 9.3 as students prepare to write detailed four-step significance tests in Lesson 9.4. The activity suggests discussing question #1 as a class before allowing students to work in groups on the remaining questions. The materials also include guiding questions for use during the activity and debrief.
- The materials are designed to require students to make sense of mathematics through discussing math with peers and teachers. The StatsMedic.com activity for Lesson 6.3 integrates discussions: "Students will work on questions #1–2 in the activity and then STOP. At this point, you should discuss the answers and then introduce the binomial formula. We suggest working through the remaining questions as a whole class."

Productive Struggle

6.2	Facilitating Productive Struggle	4/10
6.2a	Materials support teachers in guiding students to share and reflect on their problem-solving approaches, including explanations, arguments, and justifications.	**0/6**
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 do not 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 do not support teachers in guiding students to share their problem-solving approaches, including explanations, arguments, and justifications. For example, the activity "What's the Mystery Mean?" from Lesson 8.1 in the *Teacher's Edition* eBook includes teaching advice such as "This activity gets students to think about creating an interval of plausible values for an unknown population parameter" and "At the end of the activity, ask each group to explain their method for creating their interval." Additionally, there is a list of key points for discussion. While the materials offer guidance for discussion, they lack clear, well-constructed instructions, questions, and prompts to facilitate student sharing. In Step 7 of this activity, as teams share their results with the class, the teaching advice only states that "groups should compare their intervals."
- Materials do not support teachers in guiding students to reflect on their problem-solving approaches, including explanations, arguments, and justifications. For example, in the "Is Anchored Putting Better?" activity from Lesson 4.1 on the StatsMedic.com website, materials instruct students to brainstorm ideas on how to set up an experiment in class. However, there is no guidance for teachers on how to help students reflect on their experiment setup ideas.

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

- Materials offer guidance to assist teachers in providing explanatory feedback based on anticipated misconceptions. Materials include the "Common Error" section in the *Teacher's Edition* eBook for misconception. For example, in Lesson 9.1 about the idea of a significance test, materials mention that "the null value is the same for both hypotheses. Make sure your students don't write hypotheses like Ho: p=0.85 0 vs. Ha: p ≠ 0.75."

- Materials offer prompts and guidance to assist teachers in providing explanatory feedback based on student responses. For example, in Lesson 3.1, one of the book-based questions titled "Studying Stats?" requires identifying the explanatory variable in the relationship between the time spent studying for a statistics exam and the grade received. For this question, "Teacher Resource Materials (TRMs)" include the solution, examples of student responses—both correct and incorrect—and suggested feedback for each. The feedback on incorrect responses helps teachers interpret student answers by explaining that a student's grade on the exam does not predict how much time they spent studying.