

HMH Education Company

Supplemental English Mathematics, 4

HMH Math 180 Texas Grade 4

MATERIAL TYPE	ISBN	FORMAT	ADAPTIVE/STATIC
Supplemental	9798202139475	Digital	Adaptive

Rating Overview

TEKS SCORE	TEKS BREAKOUTS ATTEMPTED	ERROR CORRECTIONS (IMRA Reviewers)	SUITABILITY NONCOMPLIANCE	SUITABILITY EXCELLENCE	PUBLIC FEEDBACK (COUNT)
100%	22	16	Flags Addressed	Flags in Report	0

Quality Rubric Section

RUBRIC SECTION	RAW SCORE	PERCENTAGE
1. Intentional Instructional Design	21 out of 21	100%
2. Progress Monitoring	19 out of 19	100%
3. Supports for All Learners	36 out of 37	97%
4. Depth and Coherence of Key Concepts	16 out of 16	100%
5. Balance of Conceptual and Procedural Understanding	38 out of 38	100%
6. Productive Struggle	19 out of 19	100%

Breakdown by Suitability Noncompliance and Excellence Categories

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

SUITABILITY EXCELLENCE FLAGS BY CATEGORY	IMRA REVIEWERS
Category 2: Alignment with Public Education's Constitutional Goal	1
Category 6: Promoting Sexual Risk Avoidance	0

IMRA Quality Report

1. Intentional Instructional Design

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

1.1 Course-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.1a	All criteria for guidance met.	5/5
1.1b	All criteria for guidance met.	3/3
1.1c	All criteria for guidance met.	2/2
1.1d	All criteria for guidance met.	2/2
1.1e	All criteria for guidance met.	2/2
—	TOTAL	14/14

1.1a – Materials include an alignment guide outlining the TEKS, ELPS, and concepts covered, with a rationale for learning paths across grade levels (vertical alignment) and within the same grade level (horizontal alignment) as designed in the materials.

HMH *Math 180* includes an *Alignment Guide* for grade 4, outlining the Texas Essential Knowledge and Skills (TEKS), English Language Proficiency Standards (ELPS), and concepts covered with a path toward algebra readiness. Under a given TEKS or ELPS in the *Math 180 Alignment Guide* for grades 4 TEKS and ELPS, activities for a given TEKS or ELPS can be found by clicking a link.

1.1b – Materials include an implementation guide with usage recommendations and strategies for effective educator use in various contexts, such as just-in-time supports, advanced learning, or as a course.

180 Math Grades 3–5 includes a *Program Guide* presented at the beginning of the teacher-facing materials. This guide includes an implementation guide providing various structures for implementing the materials. Examples include rotations, whole-group lessons, and shortened periods.

Using adaptive learning technology, the program is designed to provide every student, each time they log into their Dashboard, with a personalized learning experience that includes situated instruction, problem solving, and skill-centered digital games. One activity, "Brain Arcade," continuously adjusts the learning path based on student progress and includes differentiated real-world application tasks for students at different stages of learning.

Each series contains a "Teaching Guide" that provides the educator with instructional strategies or optional lessons for small-group practice. For example, within the "Teaching Guide" for the "Decimals"

Block for fourth grade, there are "High-Level Patterns of Practice" within each lesson for just-in-time support for personalizing instruction in small groups based on students' proficiency.

1.1c – Materials include a TEKS correlation guide with recommended skill entry points based on diagnostic assessment results.

HMH Ed has an Assessment and Standards Report dashboard that gives results from the mSkills assessments for each of the blocks in a series. The results are correlated to the TEKS. Educators can look at the TEKS and obtain a report on students who are below level, on level, and above level for a TEKS in the "Mathematics Domain" covered in *Math 180*. These diagnostic results offer recommendations for skill entry points for TEKS covered in the materials.

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

Math 180 Grades 3–5 includes protocols with corresponding guidance for lesson and unit implementation. The "Teaching Guides" provide unit internalization by previewing the unit with key standards, unit objectives, vocabulary, materials, and assessments, as well as providing the learning progression. Also included are activities for the student to complete within the learning progression, denoted as the Do Now, Guided Practice, Practice in Pairs, Exit Ticket, and High-Leverage Practices to challenge all levels with the teacher in small groups.

The "Teaching Guides" also have a process for educators to thoroughly understand and prepare to teach lessons with annotations, check for understanding, and success criteria. "Professional Learning" sections are provided in each series, explaining the learning progression and giving explanations and examples of strategies taught.

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

An "All About *HMH Math 180*" document is available in the "Program Support" section on the HMH Ed Dashboard that provides an overview of the program and instructions on how to use it in different classroom settings. The *Program Guide* offers suggested instructional time frames that educators and coaches can choose to best fit the mathematical instructional day for their students and campus. It also includes multiple data analysis tools, such as mSpace Progress Monitoring and the mSkills assessment. The guide also explains how to read and interpret testing data. Instructional leaders can use these resources to support team meetings and coach educators on how to continue using the materials as intended.

1.2 Lesson-Level Design

GUIDANCE	SCORE SUMMARY	RAW SCORE
1.2a	This guidance is not applicable to the program.	N/A
1.2b	All criteria for guidance met.	5/5
1.2c	All criteria for guidance met.	2/2
—	TOTAL	7/7

1.2a – If designed to be static, materials include detailed lesson plans with learning objectives, teacher and student materials, lesson components with suggested timeframes, and assessment resources aligned with the TEKS and ELPS.

This guidance is not applicable because the program is not designed to be static.

1.2b – If designed to be adaptive, materials include detailed lesson overviews with learning objectives, lesson components with suggested timeframes, and assessment resources aligned with the TEKS and ELPS.

Each lesson in *Math 180* contains objectives that are not explicitly stated in the language of the TEKS in the "Teaching Guide"; however, the *Alignment Guide* gives the TEKS and ELPs for lessons within the content for all grade levels 3–5. Every lesson within a block of a series begins with a ten-minute introductory video, followed by segments such as discussion, group lesson, guided group practice, partner practice, and an independent exit ticket aligned with the lesson's objective. The *Program Guide* offers a "Flexible Implementation Model" for different times and days for math lesson blocks that explain the "Blended Learning Experience." By searching the *Math 180* "Dashboard for Teacher Resources," educators can browse materials by TEKS number.

Materials do include guidance on the ELPS expectations for assessments. The assessments align with the TEKS and ELPS within the scope of the HMH *Math 180* program. The *Math 180 Alignment Guide for Grades 3–5* TEKS and ELPS lists the ELPS and TEKS numbers for lessons in a series. The "Teaching Guides" for each series include a language goal with mathematical thinking that is aligned to the ELPS. Some lessons in a series feature a "Language Support at a Glance" to assist multilingual learners. This document details the ELPS language expectations and offers strategies that leverage linguistic assets and differentiate by language for all proficiency levels included in the ELPS.

1.2c – Materials contain support for families in Spanish and English for each unit, with suggestions on supporting the progress of their student(s).

Materials include strategies for supporting students and providing progress updates for families in English, and in Spanish. *Math 180* for grades 3–5 communicates with families through letters in English that contain detailed suggestions on how they can support their students' understanding of the concept

focus and procedural skills in each block of a series. In the letter from the "Multiplication Series," the teacher outlines instructional goals for both the teacher and students related to the procedural skill of multiplication. A list of strategies is provided, such as learning to use the factors of a number, with detailed graphics and mathematical language to describe the procedure being used.

Math 180 provides a "Math 180 Progress Update" to support families in English and Spanish for each lesson in a topic within a series regarding their student's progress.

2. Progress Monitoring

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

2.1 Instructional Assessments

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.1a	All criteria for guidance met.	2/2
2.1b	All criteria for guidance met.	2/2
2.1c	Materials include assessments. Assessments are not designed to be digital assessments or digital assessments are not designed for print. The materials do not include content and language supports that educators can enable or disable to support individual students.	Not Scored
2.1d	All criteria for guidance met.	4/4
2.1e	All criteria for guidance met.	4/4
—	TOTAL	12/12

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

Math 180 provides a "Roadmap" that gives the assessment tool's name, description, and purpose, and informs the teacher about what is being assessed.

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

The *Math 180 Program Guide* provides clear steps for administering mSkills assessments at the end of each instructional block. It reminds teachers to review related lessons before testing and gives instructions for assigning the assessments. Each mSkills assessment has 20 mixed-format questions, which students can complete in one class or during a designated testing window at their own pace.

Though the time it takes to complete the assessment will vary, most students complete the test in 45–60 minutes. These clear guidelines will allow educators to receive their assessments with the same instructions and testing environments, leading to more reliable and comparable results.

2.1c – Digital assessments include printable versions and accommodations, including text-to-speech, content and language supports, and calculators, that educators can enable or disable to support individual students.

The materials do not include accommodations for content and language supports to be enabled or disabled to support individual students.

Text-to-speech and calculator accommodations will be available in all program assessments. Each of the stated accommodations will be able to be delivered to individual students or the entire class in all program assessments.

There are PDFs available for the Baseline 1 and Baseline 2 "Digital Assessments" that are printable. The mSkills assessments are provided in a printable version and are identical to the digital assessment. For example, the "Multiplication and Division Series" contains a printable version of the mSkills "Digital Assessment" available to students online. The mSkills "Digital Assessment" can also be viewed on the Teacher website by clicking on categories and then clicking on assessments.

By going to class settings on HMH Ed, the teacher can enable or disable the calculator for an individual student or the class to use with all digital material.

2.1d – Materials include diagnostic assessments with TEKS-aligned tasks or questions, including interactive item types with varying complexity levels.

Math 180 includes diagnostic assessments with TEKS-aligned tasks or questions, including interactive item types with varying levels of complexity. In grade 5, items classified under Depth of Knowledge (DOK) 1: "Recall" focus on basic recall of mathematical facts or procedures. The example "Which fraction is equivalent to $\frac{6}{8}$?" requires students to recognize equivalent fractions. The example "Which is another way of writing $3 \div 2$?" asks students to identify a fraction that represents division. The example "Which temperature is the lowest?" involves a simple comparison of numerical values.

Items labeled Shape DOK 2: "Skills and Concepts" ask students to apply models or procedures in familiar contexts. The example "Pedro planted 6 rows of flowers. Each row had 18 flowers. Which shows how many flowers did Pedro plant?" applies multiplication in a real-world scenario. The example "Jamila had 12 pencils. She lost 9. What fraction of her pencils did she lose?" combines subtraction with an understanding of fractions. The example "Which model represents the sum of $0.5 + 0.29$?" requires students to interpret a visual model that represents a decimal sum.

Items under "Shape DOK 3: Strategic Thinking" require reasoning across multiple steps or concepts. The example "A car wash collected \$320 to wash 25 cars and some trucks. Cars cost \$8 and trucks \$10. How many trucks were washed?" involves setting up and solving a multi-step word problem using reasoning about operations. The example "A bakery made 140 buns. A restaurant bought 80. The rest were bagged in groups of 4. How many bags?" combines subtraction and division, requiring reasoning about quantities.

Math 180 mSkills Interactive Assessments offers multiple interactive item types, such as text entry, drag-and-drop, multi-select, and multiple-choice questions.

2.1e – Materials include a variety of formative assessments with TEKS-aligned tasks or questions, including interactive item types with varying complexity levels.

Math 180 formative assessments have more than two levels of complexity, from DOK 1 to DOK 3, and have more than two unique interactive item types of questions, such as ordering, select all that apply, and fill-in-the-blank.

Block 3, Topic 1, Lesson 3 ("Interpret Remainders") of the "Multiplication and Division Series" provides multiple, scaffolded opportunities for students to practice division with remainders through various models and representations. Students model division problems using array representations, which supports conceptual understanding. Students solve the same division problem by writing equations and using multiplication (inverse operations) to check their results, reinforcing mathematical connections and deepening understanding. Students are also tasked with identifying and correcting a division error, requiring them to reason mathematically and justify their thinking. These tasks go beyond procedural fluency and encourage students to explore the meaning of division and remainders, aligning with TEKS 4.4H.

Throughout the *Math 180* learning pathways, students are provided with multiple, scaffolded practice and assessment opportunities that are purposefully aligned to the TEKS. These activities progress in complexity, encouraging students to apply, analyze, and synthesize knowledge in ways that demonstrate deep understanding. Formative checks, Performance Tasks, and real-world problem-solving scenarios ensure students engage meaningfully with TEKS-aligned content.

2.2 Data Analysis and Progress Monitoring

GUIDANCE	SCORE SUMMARY	RAW SCORE
2.2a	All criteria for guidance met.	3/3
2.2b	All criteria for guidance met.	1/1
2.2c	All criteria for guidance met.	2/2
2.2d	This guidance is not applicable to the program.	N/A
2.2e	All criteria for guidance met.	1/1
—	TOTAL	7/7

2.2a – Instructional assessments include scoring information and guidance for interpreting student performance, including rationale for each correct and incorrect response.

The *Program Guide*, under the "Assessment, Progress Monitoring & Data" section, instructs educators on how to interpret student performance on assessments, reflect on levels of understanding and/or proficiency, and provide direction on what students need next.

The "Assessment Report" displays results from the mSkills assessments for the blocks assessed in a class. Results from this report are used to monitor student learning and provide ongoing feedback. Scoring provides a detailed breakdown of class and individual performance for the teacher. The "Assessment Report" displays mSkills scores for all students. mSkills assessment results can be used to determine instructional pacing and to identify topics and objectives where students experienced challenges. Teachers may confer results with students, adjusting goals as needed. However, materials do not include a customization to view results using the TEKS.

Results from the "Standards Reports" evaluate student performance against the TEKS to help inform small-group instruction. The "Standards Report" can be customized to provide guidance on determining students' strengths, weaknesses, gaps, and common misconceptions and setting performance goals in an IEP.

Math 180 has Performance Tasks that assess the application of learned skills, reasoning, planning, analysis, judgment, and creative thought. A scoring rubric provides clear guidelines for interpreting student performance and responses.

Each mSkills assessment has an answer key that provides the "Assessment Rationales." These answer keys include a brief explanation of why each answer is correct or incorrect.

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

The *Math180* materials provide guidance for using student applications to respond to student trends in performance on assessments. The "Teacher's Corner" tab has a section under "Program Support." Within this area, there is an article named "Program Activity Report (PAR) for Math 180." This article instructs teachers how to analyze the data to inform instruction. The teacher can customize the "Program Activity Report (PAR)" to monitor class or individual student performance in the student application. The materials include instructional guidance for tasks and activities to target various skills, as determined by assessment data. For example, the teacher follows guidelines to group students based on assessment results and provides targeted activities to address specific skills.

The *Math 180* has a pathway for students to use based on performance data. Once students are placed in a series based on assessment data, they proceed to the "Zone" menu, which displays the three zones, and the "Brain Arcade" students will work in as they progress through a block. Students must complete specific activities within a particular zone to unlock access to other zones. Students go from the "Explore Zone," where they view the anchor video and complete a simulation before they can go to the "Learn Zone" to complete tasks, before finally moving to the "Success Zone." Once in the "Success Zone," students use their problem-solving abilities to apply learned concepts and skills.

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

The *Math 180 Program Guide* explains how teachers can track class and student progress and growth data over time in a data table. For Performance lessons, teachers can track class needs and ensure that students' needs are being met. When evaluating the data from the student's view, the *Program Guide* states the goal is to meet each student's unique needs and track their progress over time.

HMH Ed is the educator dashboard that provides reports on student performance data on different types of assessments, such as mSkills and other student tasks. These dashboards have a "Class Overview" that tells educators how many students are considered "Not Yet" or "On Track." There is also a way to view individual student data to see how to specifically help students.

Students can view their learning progress when they have a conference with their teacher, as the teacher shares with them the "Summary," "Performance," and "Brain Arcade" reports at the student level. Students do not have access to data trackers unless one is provided by their teacher. The *Program Guide* stated, "Compare these results with a teacher-created student log that students use to track their work (optional)." However, the materials do include a student progress tracker, both in English and Spanish, for each series and topic for students to check off if they are in the "Learn Zone" and can make it to the "Success Board Zone." Each series has a certificate that is to be provided to students upon completion of the specific series.

Math 180 does provide a student-friendly data tracker called "The Student Goal-Setting-Template," which is a reflection sheet that can be used with each assessment, allowing students to make note of their strengths and learning opportunities. The program encourages teachers to use the student-completed reflection sheets during one-on-one conferences with students to facilitate goal setting.

2.2d – If designed to be static, materials provide prompts and guidance to support educators in conducting frequent checks for understanding at key points throughout each lesson or activity.

This guidance is not applicable because the program is not designed to be static.

2.2e – If designed to be adaptive, materials provide frequent checks for understanding at key points throughout each lesson or activity.

The student application features adaptive assessments in each lesson that track understanding and adjust pacing and complexity, and it offers differentiated practice to support skill development. "Fast Track" lets students move quickly through a *Math 180* lesson by solving three challenging problems; if unsuccessful, they return to the "Learn Zone" for more practice. In the "Learn Zone," students receive guidance to independent practice with visual aids and tailored feedback, working through 3–20 problems based on their performance.

In each series in *Math 180*, the lessons are laid out so that students complete a Do Now related to the lesson each time. Then, they see a worked example before having Guided Practice and a handful of practice problems before completing an Exit Ticket. These frequent checks for understanding allow the teacher to continuously have feedback to adjust the difficulty of tasks as the student progresses through the material.

Three CheckPoint days are built within each block, one after each topic is covered. Teachers can use the data to determine a student's need for a Boost or Stretch lesson. This system provides teachers with frequent checks for understanding throughout the lesson or activity, ensuring misunderstandings are addressed before they become barriers to learning, and allowing for adjustments in the difficulty of the task as students progress.

3. Supports for All Learners

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

3.1 Differentiation and Scaffolds

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.1a	All criteria for guidance met.	1/1
3.1b	All criteria for guidance met.	4/4
3.1c	All criteria for guidance met.	2/2
3.1d	The materials do not include content and language supports that educators can enable or disable to support individual students.	2/3
3.1e	All criteria for guidance met.	2/2
—	TOTAL	11/12

3.1a – Materials include explicit educator guidance for lessons or activities scaffolded for students who have not yet reached proficiency in prerequisite or grade-level concepts and skills.

Math 180 offers a video in the "Teacher Success Pathway" that provides clear guidance for teachers on lessons. The video guides teachers through the program, showing where (resources for differentiation), what (RDI Index and "RDI Lesson"), and how (teacher pathway video) to use the curriculum to support students who have not yet achieved proficiency.

In *Math 180* grade 4 material, a Boost lesson includes reteaching opportunities that explicitly review and reinforce concepts for students who have not yet mastered using fraction manipulatives and models to develop number sense to compare fractions and find equivalent fractions. Suppose students struggle with comparing $\frac{3}{4}$ and $\frac{7}{8}$; in that case, the lesson provides a reteaching activity where educators guide students in using fraction pieces or drawing fraction bars to visually represent the problem before transitioning to solving a similar problem using multiplication and equations.

The "Learn Zone" is part of *Math 180's* online program with built-in algorithms that provide students with content, practice problems, and feedback based on their current level of understanding. The application gradually transitions students from guided to independent practice using visual models, corrective feedback, and support resources. The "Learn Zone" has four sections: "Think," "Try," Practice, and "Master."

3.1b – Materials include explicit educator guidance for language supports, including pre-teaching and embedded supports for developing academic vocabulary and unfamiliar references in text.

The *Program Guide* includes a section that provides pre-teaching support educators should implement in each lesson in the Vocabulary Routine (VR). The VR explicitly provides teachers with consistent directions to introduce new math vocabulary during the teacher-facilitated instruction. The *Program Guide* includes implementation tips, including reminders to pre-teach the vocabulary and definition on the teacher display using the routine button on the whiteboard, encouraging the students to use the term in discussions, and the teacher to use the terms consistently for repeated exposure. An online glossary is available in mSpace for teachers and students to use when needed.

To address educator guidance for supporting unfamiliar references in text, *Math 180* has created a "Language at a Glance" and a "Spanish Academic Language" document exists for each series. The "At a Glance" document provides sentence stems and offers differentiation based on students' varying levels of language proficiency.

Within each Series, lessons include "Language Goals" to be met, and the teachers are provided specific scripts to teach academic vocabulary. Students are then given the opportunity to use the words in a variety of ways. For example, in the "Fractions Series," Block 2, Topic 2, Lesson 2, the language goal states, "Use the term *rename* when generating equivalent fractions." The teacher is guided to explain this as, "The fractions do not have common numerators or common denominators, so I cannot use those strategies. I will use a new strategy to compare. This strategy is called renaming fractions with a common denominator."

3.1c – Materials include explicit educator guidance for enrichment and extension activities for students who have demonstrated proficiency in grade-level and above grade-level content and skills.

The Performance Tasks include explicit educator guidance for enrichment activities for students who have demonstrated proficiency in grade-level content and skills. Extensions to these activities are provided for students who have demonstrated proficiency in above-grade-level content skills.

Math 180 material includes Stretch lessons to be used for students who have demonstrated mastery, as evidenced by the "Program Activity Report." Students not identified as "Developing" or "Not Yet" are intended to use the Stretch lessons. For example, the Fractions Series: "Stretch Lesson 3A" requires students to analyze multiple statements based on a contextualized problem. Students then identify true statements and discuss their reasoning. This lesson allows students to solve problems in multiple ways and explain their thinking.

Math 180 adaptive online applications, including the "Fast Track" and the "Success Zone," are extensions and enrichments for students on and above grade level. "The Fast Track" automatically provides advanced learning paths for students who can answer three Master-level questions consecutively to skip to the next lesson. When students have mastered all of the "Learn Zone," they will unlock the "Success Zone," where they review the previous topic with a game board of choices.

Math 180 provides a video in the "Teacher Success Pathway" that provides explicit teacher guidance for enrichment and extension activities. Teachers are given explicit guidance as to where enrichment and extension activities are located (resources for differentiation), unfold the meaning of the Resources for Differentiated Instruction (RDI) Index and RDI Lessons, and how (teacher pathway video) to use the *Math 180* material to help students who have demonstrated proficiency in grade-level and above-grade-level content and skills.

3.1d – Digital materials include accommodations, including text-to-speech, content and language supports, and calculators that educators can enable or disable to support individual students.

The materials do not include accommodations for content and language supports to be enabled or disabled to support individual students.

Text-to-speech and calculator accommodations will be available in all program assessments. Each of the stated accommodations will be able to be delivered to individual students or the entire class in all program assessments.

Math 180 digital materials guide educators through the "My Classes" tab and selecting "Class Settings" to enable or disable the calculator for the entire class and individual students, which allows the calculator to be used throughout the material.

3.1e – Materials include educator guidance on offering options and supports for students to demonstrate understanding of mathematical concepts in various ways, such as perform, express, and represent.

The *Math 180* "Teaching Guide" for the "Fractions Series" Block 1, Topic 1, Lesson 5 includes educator guidance to offer varied options and support for students to demonstrate their understanding of solving fraction problems using equivalence. The lesson plan has students use manipulatives ("mTool Fraction Pieces") and representations (pan balance models) to build models and express their understanding in writing using equations and justification using "greater than, less than, and equivalent." The lesson plan also guides teachers during discussions, allowing students to express their understanding orally and through written reasoning by providing questions to drive the discussion. The language support section guides teachers to connect math terms with representations and equations explicitly. Other support

gives guidance in allowing students to work individually or in pairs, and a section called "Modify Tasks" has suggestions on how to simplify or extend problems if needed.

Math 180 materials contain rubrics for the Performance Tasks within each series for students to showcase their thinking. For example, in the "Fraction Series," Block 1 Performance Task, students must use various amounts of ingredients to make a recipe. Students must write their recipe, with each recipe serving two people. Students then use their fraction knowledge to extend their recipe to serve four people. The rubric is used to determine the accuracy of the students' recipes, as well as the students' ability to follow the directions and include the correct number of ingredients.

Math 180 provides a Performance Task where students apply math skills and concepts to solve real-world, career-related tasks involving more abstract reasoning, completed at the end of each block in a series. The materials include educator guidance in both the "Teaching Guide" and the mSpace annotated on how to allow students to demonstrate understanding by drawing models and using written explanations.

3.2 Instructional Methods

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.2a	All criteria for guidance met.	5/5
3.2b	This guidance is not applicable to the program.	N/A
3.2c	All criteria for guidance met.	3/3
3.2d	All criteria for guidance met.	2/2
3.2e	All criteria for guidance met.	2/2
—	TOTAL	12/12

3.2a – Materials include explicit (direct) prompts and guidance for educators to build knowledge by activating prior knowledge, anchoring big ideas, and highlighting and connecting key patterns, features, and relationships through multiple means of representation.

Math 180 provides educators with direct prompts and guidance for teaching students and activating students' prior knowledge in the Connect portion of every lesson. Block 3 of the "Fractions Series," Connect section, explicitly instructs teachers on what to say to students and references learnings from Block 1, Topic 1, Lesson 1.

The Teacher Display Tools include the Connect feature, which prompts the teacher to discuss a specific example from the previous concept lesson. The pictorial representation allows the teacher and students to highlight and connect key patterns, features, and relationships. It contains visual models to support students in visualizing concepts and understanding how they relate to other mathematical concepts and skills.

3.2b – If designed to be static, materials include educator guidance for effective lesson delivery and facilitation using various instructional approaches.

This guidance is not applicable because the program is not designed to be static.

3.2c – Materials include multi-tiered intervention methods for various types of practice and structures and educator guidance to support effective implementation.

Materials include a variety of methods and structures for intervention practice. For example, in the "Fraction Series," Block 1, Topic 3, Lesson 1, the class presents a brain teaser and then teaches the whole group before moving into partner work and an independent exit ticket. Each section is clearly labeled so the teacher can determine which structure to use within that portion of the lesson.

The RDI Index provides explicit instructions and recommendations for teachers to effectively implement multi-tiered intervention on CheckPoint days (after the fifth lesson in Topics 1 and 2 and after the mSkills

assessment in Topic 3). After reviewing "Program Activity Report" (PAR) data, teachers can create groups and choose assignments according to the students' learning needs. Stretch lessons are designed for Tier 1 students, and Boost lessons are designed for Tier 2 and Tier 3 students. The index also guides which lessons are intended for individuals, pairs, or small groups.

3.2d – Materials include enrichment and extension methods that support various forms of engagement, and guidance to support educators in effective implementation.

Math 180 includes a Performance Task at the end of each block. These activities are higher-level thinking tasks where students take on real-world roles, fostering high engagement. The "Teaching Guide" provides instructions with clear prompts to support effective implementation of enrichment and extension methods. For example, Block 1 of the "Fraction Series" has students acting as chefs, using fractions to write recipes for a three-course meal. The educator receives multiple prompts to help activate students' thinking. Students are given tasks to complete, and the educator has guidance to support, direct, and suggest, as the task is primarily student-led.

The *RDI Guide* provides explicit instructions and recommendations for teachers to effectively implement interventions on checkpoint days, including how to choose enrichment (Stretch) and extension (Boost Focus) activities. "CheckPoint Days" occur after the fifth lesson in Topics 1 and 2, and after the mSkills assessment in Topic 3. After reviewing "Program Activity Report (PAR)" data, teachers can create groups and choose assignments according to the students' learning needs. An example is provided to show teachers one approach.

3.2e – Materials include prompts and guidance to support educators in providing timely feedback during lesson delivery.

In the "Teaching Guide," teachers are provided with prompts to give when students may still have gaps. "If students add numerators and denominators, they may rely on misconceptions or old habits." Show students $\frac{1}{3}$ and $\frac{1}{2}$ fraction pieces. Compare two $\frac{1}{5}$ pieces to show that $\frac{1}{3} + \frac{1}{2}$ is not equal to $\frac{2}{5}$." Teachers are also prompted to "Modify Tasks." These structured prompts enhance the educator's ability to deliver timely feedback, improve student engagement, and refine instructional practices, leading to more responsive teaching.

The *Program Guide* includes guidance on implementing instructional routines as informal assessments during discussions to adjust instruction and provide timely feedback after a task. Think-Pair-Share, Turn and Talk, Question Chains, Show of Thumbs, and Answers Up encourage active participation by all students, provide low-risk opportunities to engage in discussion and clarify misconceptions, give teachers insight into students' thought processes to gauge understanding, provide teachers an opportunity to adjust instruction at any point during the lesson, and provide immediate feedback.

3.3 Support for Emergent Bilingual Students

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

GUIDANCE	SCORE SUMMARY	RAW SCORE
3.3a	This guidance is not applicable to the program.	N/A
3.3b	All criteria for guidance met.	4/4
3.3c	All criteria for guidance met.	1/1
3.3d	All criteria for guidance met.	8/8
3.3e	This guidance is not applicable to the program.	N/A
—	TOTAL	13/13

3.3a – If designed to be static, materials include educator guidance on providing and incorporating linguistic accommodations for all 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.

This guidance is not applicable because the program is not designed to be static.

3.3b – If designed to be adaptive, materials include embedded linguistic accommodations for all 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 "Fractions Series," Block 3, "Language Support at a Glance" features embedded linguistic accommodations for all language proficiency levels. For Pre-production and Beginning levels, students receive explicit sentence frames for teachers to display, review, and rehearse with gestures and visuals. The materials recommend increasing the complexity for Intermediate and High-Intermediate students by incorporating helping verbs and adding details from the problem with the base verb.

Tasks include guided partner discussions and evaluating solutions, encouraging justifiable reasoning with academic language. Advanced students use precise math language in complete sentences and are prompted to evaluate and revise incorrect solutions orally and in writing.

Each series includes a "Topic at a Glance" document outlining language objectives and key academic terms. This resource supports academic language development across all levels, focusing on developing speaking skills and terminology. In "Fraction Series" Block 1, educators gain strategies to support

students at the Pre-production and Beginning levels. Students grasp equivalent fractions, such as using gestures for terms like *shorter than* and *longer than*, and encouraging vocabulary drawings. Materials also provide targeted support for speakers of Hmong, Korean, Portuguese, and Somali.

In the "Learn Zone," students can toggle between English and Spanish, and lesson videos in Spanish are included. This supports students at all proficiency levels, from Pre-production to Advanced.

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

The "Teacher's Corner" in *Math 180* includes a "Discourse" section featuring video explanations of the "Language Development" materials and modeled lessons that demonstrate strategies like leading discussions, vocabulary building, and Think-Pair-Share. Each block within a series provides a "Language Support at a Glance" document to help educators implement the state-approved ELPS effectively, offering practical tips for scaffolding content and language development differentiated by language proficiency.

3.3d – Materials include embedded guidance 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 *Math 180* "Integrating Language Routines Into Instruction" material provides educators with guidance on supporting emergent bilingual students (EB) with structured opportunities to develop content-specific vocabulary, increase comprehension, build background knowledge, and make cross-linguistic connections through oral and written academic discourse. The "Compare and Connect" routine helps EB students find similarities and differences between math strategies or representations. "Critique, Correct, and Clarify" provide students with opportunities to analyze and revise flawed math explanations and encourage deeper comprehension with both content and language. "Stronger and Clearer Each Time" guides students through structured conversations in which they articulate and revise their mathematical ideas orally. The repeated verbal rehearsal supports language development and fosters academic vocabulary use and oral and written discourse fluency. "The Three Reads" strategy scaffolds students' reading comprehension and interpretation of math word problems through repeated readings with distinct purposes.

"The Three Reads" strategy can be utilized with the EB student to make cross-linguistic connections through oral discourse. This allows EB students to make sense of the everyday and mathematical language used in the problems, which they can relate to equivalent structures in their home language through oral discourse.

Math 180 provides a document, "Language Support at a Glance," that gives educators guidance in partnering students who share a home language and encourages them to first introduce concepts to each other by oral discourse using their home language and a variety of language structures, such as

connecting words (ELPS 2C). The materials give guidance for cross-linguistic connections through written discourse in "Language Support at a Glance."

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

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

4. Depth and Coherence of Key Concepts

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

4.1 Depth of Key Concepts

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.1a	All criteria for guidance met.	2/2
4.1b	All criteria for guidance met.	4/4
—	TOTAL	6/6

4.1a – Practice opportunities throughout learning pathways (including instructional assessments) require students to demonstrate depth of understanding aligned to the TEKS.

Practice opportunities throughout learning pathways require students to demonstrate a depth of understanding aligned to the TEKS. Each series builds complexity in the materials presented, as well as practice opportunities. For example, the "Fraction Series" Block 1, Topic 1, begins with students representing parts of a whole using fraction tiles. Students label the parts, such as $\frac{1}{8}$ or $\frac{1}{2}$. In Block 2, Topic 1, students use models, unit fractions, and non-unit fractions to write addition sentences to make a whole. The Series continues to build until students multiply and divide fractions.

The mSkills assessment, found in The *Math 180* "Fraction Series," Block 2, requires students to order fractions using a drag-and-drop question, create comparisons, and determine equivalent fractions.

4.1b – Questions and tasks, including enrichment and extension materials, increase in rigor and complexity, leading to grade-level and above grade-level proficiency in the mathematics TEKS.

Throughout the *Math 180* learning pathways, students are provided with multiple, scaffolded practice and assessment opportunities that are purposefully aligned to the TEKS. These activities progress in complexity, encouraging students to apply, analyze, and synthesize knowledge in ways that demonstrate deep understanding. Formative checks, Performance Tasks, and real-world problem-solving scenarios ensure students engage meaningfully with TEKS-aligned content. RDI are provided for teachers to use during interventions: Boost lessons to reinforce foundational skills with routine problems or as an extension, and Stretch lessons to challenge students with non-routine problems to extend skills.

The Stretch lesson "Solve Complex Division Problems," demonstrates a clear increase in rigor and complexity, supporting both grade-level and above-grade-level proficiency in alignment with the TEKS. The Stretch lesson allows students to solve balance scale problems where they must write and solve equations to find the value of a variable representing a fractional weight. Reinforcement of foundational

algebraic thinking is achieved by visualizing equivalent expressions in the context of real-world situations. The lesson extends the rigor with some problems that require interpreting and solving multi-step balance scenarios involving multiple fractional components and units. Students are asked to reflect on how to solve balance problems and provide justification to support mathematical communication and to choose a strategy to solve a problem that will improve their learning.

4.2 Coherence of Key Concepts

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.2a	All criteria for guidance met.	1/1
4.2b	All criteria for guidance met.	1/1
4.2c	All criteria for guidance met.	4/4
—	TOTAL	6/6

4.2a – Materials demonstrate coherence across concepts horizontally within the grade level by connecting patterns, big ideas, and relationships.

The "Fractions series Teaching Guide" lists the learning progression and connections to other concepts in each lesson within a grade level. The Block 1, Topic 1 overview highlights the connections to prior and future lessons. For example, in grade four, the learning progressions list the current objectives (represent equal parts of a whole as fractions, compose non-unit fractions, compare fractions using models, and solve problems with fractions) that will lead to connections with other grade-level standards (solve multi-step real-life and mathematical problems posed with positive rational numbers).

Within teacher- and student-facing materials, a "Why This Matters" section is included to provide context and relevance to the lesson being taught for the day. The "Fraction Series," Block 2, Topic 2, Lesson 2, contains the "Why This Matters Statement" of "knowing how to rename fractions with equivalent fractions enables students to compare any fractions."

4.2b – Materials demonstrate coherence vertically across concepts and grade bands, including connections from grade K–6, by connecting patterns, big ideas, and relationships.

The *Math 180* scope and sequence is built around a curriculum that enables students to progress toward grade-level standards and algebra readiness. The "Program Overview" has a concept map that demonstrates coherence vertically across concepts and grade bands, including connections from grades K–6, by connecting patterns, big ideas, and relationships. For example, in grade 4 in the "Fraction Series," the learning progression begins with the grade 3 prerequisites of multiplication and developing an understanding of fractions as numbers and leads to applying and extending understandings of multiplication and division to divide fractions by fractions in grade 6.

Alignment guides are available for each grade level within the "Teacher Materials." Using these guides, the teacher can determine connections made within the materials across grade levels.

Throughout the *Program Guide*, teachers are presented with how the materials are designed to prepare students for the algebra 1 course. As an adaptive program, students are able to move in and out of the series they are placed in, with a predictable series structure to ensure their success.

4.2c – Materials demonstrate coherence across lessons or activities by connecting students' prior knowledge of concepts and procedures to the mathematical concepts to be learned in the current grade level and future grade levels.

The *Math 180 "Fractions Series Teaching Guide"* lists the learning progression and connections to other concepts in each lesson within a grade level. The Block 1, Topic 1 overview highlights the connections to prior and future lessons. For example, in fourth grade, the learning progressions list the current objectives (represent equal parts of a whole as fractions, compose non-unit fractions, compare fractions using models, and solve problems with fractions) that will lead to connections with other grade-level standards (solve multi-step real-life and mathematical problems posed with positive rational numbers).

The learning progressions provided at the beginning of each block within a series create coherence across lessons and activities. Students must build upon prior knowledge to continue to move through the Series and succeed. For example, students begin the lesson by reviewing basic division with a simple problem of splitting 15 squares into three groups. Students are then presented with a video and asked to determine how to share two pieces with three people equally. Students use a division algorithm and pictorial models, as previously used at the grade level, to make connections and solve problems.

In the *Math 180 "Fractions Series Teaching Guide,"* there is a "Block at a Glance" that overviews how each lesson builds upon the last one. For example, Block 2, Topic 1 is "Strategies for Comparing Fractions." Within this topic, students must first compare fractions with common features, then identify fractions equivalent to $\frac{1}{2}$, and then use benchmarks to compare fractions before students use reasoning to compare fractions with a game and build their mastery with problem solving. At the end of each Block, students tie together all of their learning with a Performance Task that utilizes all of the skills learned within the Block.

4.3 Coherence and Variety of Practice

GUIDANCE	SCORE SUMMARY	RAW SCORE
4.3a	All criteria for guidance met.	2/2
4.3b	All criteria for guidance met.	2/2
—	TOTAL	4/4

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

The *Math 180* mSkills assessment fraction assessment visits skills learned at the beginning, those learned in the middle, and skills at the end of the Lesson. This provides students with a spaced retrieval opportunity to revisit skills previously taught in a more timely manner.

Within each lesson, a Do Now Section contains a practice/retrieval activity connected to the concept and learning for the day. In the "Fractions Series," the Do Now section requires students to determine the trends of fractions provided, and the guiding question provided states, "What strategy did you use to find the fraction that did not belong?"

Students are to play the "Brain Arcade" daily. In the "Brain Arcade," students have the opportunity to practice facts, perform quick multi-digit operations, and more. These opportunities provide continuous assessment of student progress, helping educators adjust their teaching strategies as they review the report. As students finish a topic, they have access to the "Success Zone," where they solve problems that review previous Topics.

Multiple components of the student application provide spaced retrieval opportunities with previously learned skills and concepts across learning pathways. In the Master portion of the "Learn Zone," students demonstrate mastery of a new concept, skill, or strategy and review problems from prior lessons. After students master the lessons in a topic in the "Learn Zone," the "Success Zone" unlocks a game board that students can use to review the Topic. The Brain Arcade helps students practice their fluency with procedural math skills.

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

The "Fraction Series Teaching Guide" provides a "Block at a Glance" for each block in a series. The "Block at a Glance" is a visual map of the lessons within the three Topics, with an example of the strategy students are introduced to in each lesson. In grade 4, the mSpace lessons provide various strategies for equivalent fractions, including fraction pieces, equations, and inequalities. Through the learning progression, students learn more than one strategy to solve equivalent fraction problems and engage in problem sets that require understanding word problems to plan whether to use an appropriate strategy.

In the *Math 180* "Fraction Series," the exit ticket provides students with a visual of fraction bars used to create equivalent fractions to 1. As part of the dice game, the teacher asks students, "What do you hope you roll next?" The activity draws on previously learned knowledge of fraction bars and how a whole can be decomposed in different ways.

In each series, students can complete a Card Sort, which provides interleaved practice. For example, in Card Sort: "Fraction Relationships," students sort fractions based on their common denominators, and then must identify the category.

The *Program Guide* explains the purpose behind each segment of the *Math 180* materials. These explanations explicitly identify the use of previously taught concepts. The Do Now is designed to engage students at the start of each lesson. These activities involve quick, focused tasks that help students review previous concepts and prepare for new learning. Concept lessons are where students connect previously learned concepts, build new understandings, and acquire skills. Lessons are designed to build students' conceptual understanding of math. Problem-Solving lessons are in all blocks. Students apply conceptual knowledge to new problems through multi-step and contextualized problems, allowing them to interpret, analyze, and evaluate mathematical concepts and complex, real-world situations. Game lessons, with two or three games per block, students engage in collaborative practice to help build fluency and flexibility with learning objectives from Concept lessons.

5. Balance of Conceptual and Procedural Understanding

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

5.1 Development of Conceptual Understanding

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.1a	All criteria for guidance met.	3/3
5.1b	All criteria for guidance met.	2/2
5.1c	All criteria for guidance met.	1/1
—	TOTAL	6/6

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

Math 180 "Fraction Series" offers students multiple chances to interpret, analyze, and evaluate visual models of fractions as parts of a set. Students explore sets divided into fractional parts through array models and examine relationships between quantities and their fractional components. Reflective questions such as "What do you notice when you find fractions of a set?" encourage deeper insight across examples. The lesson's "Model Reasoning" segments guide students through step-by-step thinking, such as finding $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of 16, prompting critical evaluation of representation and application.

The *Math 180* program provides opportunities for students to interpret, analyze, and evaluate mathematical concepts within a Performance Task to solve real-world, career-related tasks involving more abstract reasoning to complete at the end of each block in a series. The materials include educator guidance in both the "Teaching Guide" and the mSpace, annotated on how to allow students to demonstrate understanding by drawing models and using written explanations.

The *Math 180* material provides students with problems such as how two different people use fraction pieces to model one whole. Students must then determine who is correct and how they would correct the error. This Do Now requires students to interpret, analyze, and evaluate a model.

5.1b – Questions and tasks provide opportunities for students to create concrete models and pictorial representations to represent mathematical situations.

In the *Math 180* "Fraction Series," Block 1, Topic 2, Lesson 3, students are provided opportunities to communicate thinking through tangible representation as they roll dice, which denote a fraction denominator; then, they must decide which fractional pieces in the pile are equivalent to one whole. The game continues until all fractional pieces are moved. When students roll the dice, they must interpret the rolled number as the denominator and evaluate the pieces left in order to determine if there are pieces left that can make one whole.

In the *Math 180* "Fraction Series," Block 3, Topic 1, Lesson 1 provides multiple opportunities for students to create models or representations of fractions as parts of a set. Using mTools, students are asked to drag tiles into array models representing sets divided into fractional parts.

In the *Math 180* "Fraction Series," Block 1, Topic 2, Lesson 2, students use models to add fractions. The teacher first represents a problem using fraction pieces to show how to complete the task when adding fractions with different denominators. Students use their fraction pieces to solve $\frac{1}{3} + \frac{2}{4}$. Students share their thinking as they create their model.

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

The *Math 180* "Explore Zone" has simulations where students make choices in real-world scenarios and determine how their choices influence the math. Students are aquarium architects who design exhibits to attract tourism to the city with various species, given their habitat and characteristics (size as a fraction of the tank, preferences, and popularity). Students must pick species for the surface, reef, and floor of the tank in combinations that will make one whole, using their skills of addition with unlike denominators. Feedback is given at the end.

In the *Math 180* "Fraction Series," students are given a list of numbers and parameters they must use to create as many fractions as possible. The parameters in fractions must be greater than one, and students may only use the numbers.

The *Math 180* Performance Task at the end of each block of a series provides a direct correlation for students to see math at work in real-life situations. In the "Fraction Series," students are asked to add fractions to determine the travel time required to receive a transplant organ. They are given a "From" location and have to choose a "To" location and utilize the map provided for the amount of time required for transport. Students can add their fractions in any way they were taught, but must understand the importance of patience; receiving an organ on time can mean life or death.

5.2 Development of Fluency

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

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

The "Brain Arcade" provides many games designed to help students become fluid, fluent, and flexible. All games are divided into chapters that are divided into levels, which progress in difficulty. "Brain Arcade Recommendations by Topic" gives game recommendations by series, block, and topic, and can be used by teachers and students to focus on specific skills that align with daily lessons. For example, the game "Fair Share Chapters 1 and 2" would align with the "Fractions Series" and involves building fluency and automaticity by using interactive fraction models to help students connect parts of a whole to a fraction's part.

In the *Math 180* "Fraction Series," students connect fractions to division. Using pictorial models and a standard fill-in-the-blank algorithm, students repeatedly answer questions such as, "Four pies are shared equally among six people. How much pie does each person get?" The teacher asks students, "Which makes more sense, six divided by four or four divided by six? Why?" This type of questioning supports fluency by helping students flexibly reason that fractions being split into equal pieces is the same as division in future problems.

5.2b – Materials provide opportunities for students to practice the application of efficient, flexible, and accurate mathematical procedures throughout learning pathways.

The "Block at a Glance" section in the "Fractions Series Teaching Guide" provides a visual map of the lessons within the three Topics, with an example of the strategy students are introduced to in each lesson. In grade 4, the mSpace lessons provide various strategies for equivalent fractions, including fraction pieces, equations, and inequalities. Through the learning pathway, students learn more than one strategy to solve equivalent fraction problems and engage in problem sets that require understanding word problems to plan whether to use an appropriate strategy.

5.2c – Materials provide opportunities for students to evaluate mathematical representations, models, strategies, and solutions for efficiency, flexibility, and accuracy throughout learning pathways.

The *Math 180 Program Guide* explains how the curriculum offers "Comprehensive Support for Students." This information is listed under "Program Overview" and details student opportunities to evaluate mathematical representations, models, strategies, and solutions for efficiency, flexibility, and accuracy through the use of the following sections: "Learn Zone," "Instructional Videos," "My Examples," "Think Aloud," "Targeted Suggestions," "Answer Reveal," and the "Success Zone."

The "Brain Arcade" offers adaptive math games that support students in developing and evaluating efficient, flexible, and accurate computational strategies. Games are organized by number type, operation, and level of complexity, allowing students to explore various mathematical representations and procedures across chapters. Within each chapter, games increase in difficulty, guiding students to apply prior knowledge in new contexts. As students demonstrate procedural fluency, they unlock higher levels of the game, encouraging reflection on the accuracy and efficiency of their problem-solving approaches.

5.2d – Materials contain guidance to support students in selecting increasingly efficient approaches to solve mathematics problems.

The *Math 180* "Fractions Series," lessons in the "Learn Zone" guide students to identify equal groups. The online guide enables students to use tiles to build equivalent fractions and then write equality equations for the fractions built. As they become proficient in this strategy, students are introduced to other strategies. The application progresses from guided to independent practice using visual models, corrective feedback, and support resources. As students progress through the program, support is given to recognize patterns and select more efficient approaches to solve problems fluently in different contexts.

The RDI Index has a Strategy Bank that suggests one strategy per lesson for application in a contextualized problem. This encourages teachers to help students compare strategies and choose more efficient ones during Boost or Stretch lessons.

5.3 Balance of Conceptual Understanding and Procedural Fluency

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

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

The *Math 180 Program Guide* and "Learning Matrix" clearly specify the program's focus on both conceptual understanding and procedural skills. Additionally, the *Math 180 Alignment Guide* includes direct links to example lessons where TEKS are addressed, with annotations explaining how each lesson supports conceptual growth and procedural practice.

In the *Math 180* "Teaching Guide" Block 3, Topic 1, Lesson 1 explicitly provides educators with guidance in "Why This Matters" at the start of each lesson. "Understanding how to name the fractional part of a set prepares learners to multiply whole numbers and fractions." Clear guidance on how naming fractional parts relates to multiplying whole numbers and fractions helps build conceptual understanding. "The Block at a Glance" emphasizes procedures for how a TEKS will be addressed. The progression of understanding fraction multiplication and division begins with modeling parts of a set, such as figuring out how many tiles make up $\frac{1}{5}$ of 20 tiles, then $\frac{2}{5}$ of 20, leading into the process of multiplying a fraction by a whole number.

5.3b – Questions and tasks provide opportunities for students to use concrete models, pictorial representations, and abstract models as required by the TEKS.

Materials provide opportunities for students to use concrete, pictorial, and abstract models. In the *Math 180* "Fraction Series," Block 1, Topic 1, Lesson 1, the materials listed explicitly state that students need fraction pieces to complete the lesson. The teacher begins by identifying one whole and showing this with a digital model, while students identify with a concrete model. The teacher continues naming fractions such as $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$. Students determine how many of each are needed to make a whole and write the fractions as an expression, such as $\frac{1}{2} + \frac{1}{2}$ or $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$.

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

In the "Fraction Series," students engage in activities where they use fraction pieces to represent equivalent fractions, reinforcing the use of concrete objects. They then draw fraction bars to model the fractions and write equivalent numeric expressions, reinforcing the connection between visual models

and abstract operations as required by the TEKS. The lesson explicitly encourages students to explain how the model represents the problem, using sentence frames and discussion prompts throughout, along with modeling and guided practice.

5.4 Development of Academic Mathematical Language

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.4a	All criteria for guidance met.	1/1
5.4b	All criteria for guidance met.	2/2
5.4c	All criteria for guidance met.	1/1
5.4d	All criteria for guidance met.	2/2
5.4e	All criteria for guidance met.	2/2
—	TOTAL	8/8

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

In the "Fraction Series," students use fraction pieces to model and represent addition with fractions. To develop their understanding of the term simplest form, the teacher states, "Let's try building a row using fewer fraction pieces so that our sum is in simplest form. You can tell that a fraction is in its simplest form when you cannot use any fewer fraction pieces of one type to build the same fraction. What fraction piece should we try that will give us the sum in simplest form?" Students then use their fraction pieces to model the additional sentence again, using the simplest form, and explain their thinking.

The *Math 180* material includes integrated opportunities to develop academic math language through lesson plans with specific language goals and an interactive "Teaching Guide" with practical tips for scaffolding content and language development (sentence frames, partner talk, and vocabulary routines), and using visual representations and manipulatives.

5.4b – Materials include embedded educator guidance to scaffold, support, and extend students' use of academic mathematical vocabulary in context when communicating with peers and educators.

In the Math 180 "Fraction Series," Block 1, Topic 2, Lesson 1, the High-Leverage Practices give guidance for educators to support students who are struggling to compare fractions. "If students think that $\frac{1}{3} < \frac{1}{6}$ because $3 < 6$, give them a scenario to help them connect the visual models to the fractions." Ask, "If you love pizza, would you rather eat a pizza shared equally among 3 or 6 people? Why?" Guidance for the educator to use as an extension is given for students to do in mSpace with virtual manipulatives. "Could you use $\frac{1}{6}$ fraction pieces to model a larger fraction like $\frac{1}{4}$ or $\frac{3}{4}$? Why or why not?"

The *Math 180 Program Guide* includes a section that provides pre-teaching support educators should implement in each VR lesson. The VR explicitly provides teachers with consistent directions to introduce new math vocabulary during the teacher-facilitated instruction. The *Program Guide* includes implementation tips, including reminders to pre-teach the vocabulary and definition on the teacher display using the routine button on the whiteboard, encouraging the students to use the term in.

5.4c – Materials include embedded guidance to support student application of appropriate mathematical language and academic vocabulary in discourse.

Appropriate mathematical discourse is encouraged with embedded guidance in Block 2, Topic 1, Lesson 1 of the *Math 180* "Multiplication and Division Series" when the instructor is prompted to have students use Answers Up to communicate their answers to $60 \div 24$ and 14×6 . Then the teacher is prompted to "Lead a Discussion," where students can connect the visual array model to their mathematics when asked the question, "Why is a rectangle a good model for multiplication?"

All lessons in *Math 180* include a scripted think-aloud where the educator models how to use academic vocabulary. After the think-aloud, the materials provide questioning strategies to engage students in academic discourse, such as "So, which symbol should we write in the box? (greater than) ."

5.4d – Materials include embedded guidance to facilitate mathematical conversations allowing students to hear, refine, and use math language with peers.

In the *Math 180* "Fraction Series," students compare fractions with common denominators. The educator asks students, "What strategy can we use to compare the fractions?" Students are guided to Turn and Talk with peers to discuss. Once students have their answer, they verify it with their fraction pieces and record it.

The *Math 180* materials provide explicit guidance for educators to use the embedded prompts in each lesson for math class discussions. Through video demonstrations, educators model effective instructional strategies (leading a discussion, vocabulary, language development, Think-Pair-Share, and Turn and Talk) with their students. The discourse strategies allow students to hear, refine, and use math language with peers and educators.

5.4e – Materials include embedded guidance to anticipate a variety of student answers including exemplar responses to questions and tasks, including guidance to support and/or redirect inaccurate student responses.

The "Learn Zone" in the *Math 180* material includes automated feedback on student responses. If a student provides an incorrect answer, the digital platform will provide the correct answer and then give the students the opportunity to correct their answer. If students continue to make mistakes, step-by-step "Example Problems" will pop up to support and/or redirect student responses to the correct ones. Exemplar responses are available in the "Example Problem."

The *Math 180* includes an option called "Modify Tasks" within the High-Leverage Practices box that redirects students after inaccurate responses. The "Modify Task" in the "Fractions Series" Block 3, Topic 2, Lesson 1 says: "If students have difficulty renaming products, then have them simplify the fraction before they rename it."

5.5 Process Standards Connection

GUIDANCE	SCORE SUMMARY	RAW SCORE
5.5a	All criteria for guidance met.	1/1
5.5b	All criteria for guidance met.	2/2
5.5c	All criteria for guidance met.	1/1
—	TOTAL	4/4

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

The *Math 180*, "Fraction Series" focuses on modeling fractions as part of a whole (content). The material highlights how students apply TEKS 4.1Cii by using fraction pieces (process) to divide a whole into equal fractions (content). The "Teaching Guide" then explains how this connects to TEKS 4.1Giii by having students explain why fractions are equal (process) by modeling equal groups to find the product (content). TEKS 4.1Aiii is represented at the beginning of the lesson with the video showing where chefs use fractions in their profession (process).

Students solve pan balance problems (content) using fraction pieces (process), and are prompted to explain and compare strategies using tools strategically (process). This embeds TEKS process standards, such as using appropriate tools and modeling with mathematics.

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

The lessons in each block of an *Math 180* series are organized similarly to how process standards are integrated throughout the learning pathway. Each lesson begins with a Do Now section that requires students to analyze information and explain their reasoning in different ways. A whole group lesson is provided, usually with models or concrete representations, where students use various tools to demonstrate their understanding. For example, in the "Fraction Series," Block 1, Topic 2, Lesson 1, students start by evaluating potential solutions to equivalent fractions using fraction pieces and a pictorial model provided. They explain their reasoning about who is wrong and how they can correct the error. The teacher's guide explains how the models used in this lesson will be applied in future lessons to understand equivalent fractions.

In *Math 180*, the fifth lesson of each topic focuses on a problem-solving model that is consistent with content and vocabulary objectives in that Topic. Educators are provided with guidance, including prompts and strategies for using mathematical tools. Students are prompted to explore multiple approaches and justify their solutions. Problem-solving activities in every fifth lesson of a topic are designed to connect process standards across the learning pathways.

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

The *Math 180* program includes an *Alignment Guide* that lists all TEKS process standards by grade level covered in the program. There are direct links to each lesson where the TEKS and ELPS are addressed.

Materials provide relevant activities for the process standards. Each process standard has two to four resources linked to parts of the program, including mSpace, Exit Tickets, Performance Tasks, Do Nows, or Guided Practice.

The "Teaching Guides" have "Mathematical Thinking" skills, which correlate to the TEKS "Process Standards," listed in each lesson.

6. Productive Struggle

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

6.1 Student Self-Efficacy

GUIDANCE	SCORE SUMMARY	RAW SCORE
6.1a	All criteria for guidance met.	3/3
6.1b	All criteria for guidance met.	3/3
6.1c	All criteria for guidance met.	3/3
—	TOTAL	9/9

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

The Do Now segment at the start of each topic gives students the chance to think mathematically. In the "Fractions Series," students analyze a set of fractions with mixed numbers to determine which one does not belong. While students view this information in mSpace, the teacher is prompted to 1) ask students to share their solutions, and 2) encourage them to extend their reasoning by analyzing the problem further. The educator guides students with questions to Turn and Talk to determine what type of question they are working on and instructs them to use the "Problem Types Chart." Students work through similar questions in pairs before solving the exit ticket independently.

Materials provide students with meaningful opportunities to think mathematically, make sense of fractions, and persevere through problem solving. Students interpret and analyze visual fraction models using fraction pieces and unit fraction representations to understand and compare fractions like $\frac{3}{12}$ and $\frac{5}{12}$. Students reason about the size of the fraction parts and the number of equal parts in a whole, applying concepts such as common denominators, common numerators, and unit fractions. Students are expected to evaluate different strategies and justify which comparison is most valid, using mathematical language and structure to support their reasoning.

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

In a "Fraction Series Performance Task," students add fractions to calculate travel times for transplant patients. The materials state, "To complete the tables in Part B, students may use any method of adding fractions that they practiced in class." Students solve the problem with a partner, discuss strategies, and justify solutions in conversation with the educator.

Through Do Now activities, students understand, explain, and justify multiple ways to solve problems and complete tasks. They analyze numerical patterns and relationships among fractions to identify which fraction does not belong. Students use strategies introduced by the educator, such as identifying

equivalent fractions, comparing the relationships between numerators and denominators, or recognizing benchmark fractions, to support their reasoning. This task encourages flexible thinking and fosters discussions about different solution methods, enabling reasoning that does not rely solely on visual models.

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

Think-Pair-Share is a structured discussion method used throughout a series. It involves students independently reflecting on a question, problem, or task using sentence stems. Then, students pair up to share and discuss their ideas. Think-Pair-Share helps students to do, discuss, and write about math with peers and allows them to justify their solutions with educators.

The materials help students understand mathematics by doing and discussing math with classmates and educators. For example, in the "Fraction Series," the Do Now section asks students to identify which one does not belong in a list of fractions ($\frac{1}{2}$, $\frac{3}{6}$, $1\frac{1}{4}$). Students work independently to make their decisions, then share their solutions with peers and teachers. Guidance is provided to the educator to ask a follow-up question: "Would your answer be the same if we added $\frac{5}{4}$ to the list? Why or why not?" Students respond independently in mSpace, allowing them to write about their solutions.

6.2 Facilitating Productive Struggle

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

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

Turn and Talks are embedded throughout the series. Teachers are prompted to have students share their problem-solving approaches, including explanations, arguments, and justifications.

The materials support educators in guiding students to share and reflect on their problem-solving strategies by integrating High-Leverage Practices that encourage explanation, justification, and mathematical discussion. Educators receive support through scaffolded questions, real-life scenarios, and prompts like, "Walk me through your steps," or "What patterns do you notice?" to help uncover and discuss reasoning. These practices offer differentiated supports that prompt students to verbalize their thought processes and participate in meaningful discussions using explanations, arguments, and justifications.

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

The materials prompt the teachers through a view of the student pages. They give generic prompts for when to intervene if students are struggling, such as, "If they are confusing this, try this."

The materials include answer keys for all assessments given in the mSpace. The answer keys include rationales for all multiple-choice problems. An example of a given rationale on one incorrect answer about whether a table is proportional is: "The student may not understand how to get a ratio from an x/y table."

The materials include a "High-Leverage Practice" section in each lesson that provides guidance to teachers on how to redirect students if students are answering questions incorrectly. Examples from this "High-Leverage Practice" box include: "If students have difficulty expressing their answers, then help them draw a diagram for each object." The "High-Leverage Practice" also includes prompts for students who are struggling to understand, and also to challenge further student thinking. Prompt examples include: "How many intervals do you need to represent the time?" and "If both objects are moving at a constant speed, will the slower object ever catch up?"

The "Decimals and Integers Series" Stretch Lesson 3B provides guidance on how to address student responses. The guidance states, "if students struggle with subtracting integers, use an open number line,"

and provides a script on how to model using the number line. The guidance also provides scaffolded questions for teachers to ask throughout the lesson but does not provide prompts or guidance to provide feedback on common misconceptions, only if students struggle with subtracting integers.

The Practice portion of the "Learn Zone" offers targeted hints and guidance if students encounter difficulties. The hints are based on possible student misconceptions. The educator can also experience the feedback by going to the "Teacher View" of the Student Application.