

# HMH Education Company

Supplemental English Mathematics, 5

HMH Math 180 Flex Texas, 5

| MATERIAL TYPE       | ISBN                 | FORMAT         | ADAPTIVE/STATIC |
|---------------------|----------------------|----------------|-----------------|
| <b>Supplemental</b> | <b>9798202140556</b> | <b>Digital</b> | <b>Adaptive</b> |

## Rating Overview

| TEKS SCORE | TEKS BREAKOUTS ATTEMPTED | ERROR CORRECTIONS (IMRA Reviewers) | SUITABILITY NONCOMPLIANCE | SUITABILITY EXCELLENCE | PUBLIC FEEDBACK (COUNT) |
|------------|--------------------------|------------------------------------|---------------------------|------------------------|-------------------------|
| 100%       | 14                       | 0                                  | Flags Addressed           | Not Applicable         | 0                       |

## Quality Rubric Section

| RUBRIC SECTION                                                        | RAW SCORE    | PERCENTAGE |
|-----------------------------------------------------------------------|--------------|------------|
| 1. <a href="#">Intentional Instructional Design</a>                   | 21 out of 21 | 100%       |
| 2. <a href="#">Progress Monitoring</a>                                | 19 out of 19 | 100%       |
| 3. <a href="#">Supports for All Learners</a>                          | 36 out of 37 | 97%        |
| 4. <a href="#">Depth and Coherence of Key Concepts</a>                | 16 out of 16 | 100%       |
| 5. <a href="#">Balance of Conceptual and Procedural Understanding</a> | 38 out of 38 | 100%       |
| 6. <a href="#">Productive Struggle</a>                                | 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                                    | 2              | 0      | 0                                    |
| 2. Alignment with Public Education's Constitutional Goal         | 0              | 0      | 0                                    |
| 3. Parental Rights and Responsibilities                          | 0              | 0      | 0                                    |
| 4. Prohibition on Forced Political Activity                      | 0              | 0      | 0                                    |
| 5. Protecting Children's Innocence                               | 0              | 0      | 0                                    |
| 6. Promoting Sexual Risk Avoidance                               | 0              | 0      | 0                                    |
| 7. Compliance with the Children's Internet Protection Act (CIPA) | 0              | 0      | 0                                    |

| SUITABILITY EXCELLENCE FLAGS BY CATEGORY                          | IMRA REVIEWERS |
|-------------------------------------------------------------------|----------------|
| Category 2: Alignment with Public Education's Constitutional Goal | 0              |
| 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.**

The materials include an *Alignment Guide* in the HMH *Math 180 Flex* program detailing the Texas Essential Knowledge and Skills (TEKS), English Language Proficiency Standards (ELPS), and the concepts covered.

The HMH *Math 180 Flex Program Guide* shows learning paths with vertical alignment, as well as horizontal alignment. Also, the *Program Guide* includes a "Learning Matrix," which details the scope and sequence of the program.

**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.**

The materials include an *Implementation Guide* with usage recommendations and strategies for effective educator use in the HMH *Math 180 Flex Program Alignment Guide*.

The usage recommendations from HMH *Math 180 Flex* are stated, "best results are achieved when students engage in Student Application learning at least 20 minutes a day—in or out of class." The diagnostic assessment places individual students in the program based on those results.

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

The materials provide a *TEKS Correlation Guide* in the *Alignment Guide*. In grade 5, the *Alignment Guide* states the TEKS that is associated with the "Learn Zone" student activities, as well as provides links to show the correlation: "Student Activity: ISBN 9798202136283, *Math 180*: 'Addition, Subtraction, and Place Value'; 'Learn Zone'; Block 1, Topic 2, 'Add Within 20 by Jumping to 10'; 'Master', Problem 4; Screen capture of 'Master', Problem 4 provided via link." To view in *Math 180* interactive software, navigate to 'Addition, Subtraction, and Place Value'; Block 1, Topic 2, 'Add Within 20 by Jumping to 10', Lesson Map; 'Master', Problem 4; link."

This *Alignment Guide* includes recommended skill entry points that are based on diagnostic assessment results through the Baseline Scan assessments. In grade 5, the materials state, "The beginning-of-year Baseline Scan is directly aligned to the content in *Math 180* and provides an accurate portrayal of which *Math 180* concepts and skills a student knows or needs to learn." The two Baseline Scans are implemented as follows: grade 3: Place students in "Addition, Subtraction, and Place Value"; grades 4–6: Use Baseline Scan I to assess placement in "Multiplication and Division," "Fractions," or "Decimals and Integers"; grades 7–8: Use Baseline Scan II to assess placement in "Rates and Ratios," "Proportional and Linear Relationships," or "Linear and Nonlinear Functions."

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

The HMH *Math 180 Flex* program includes protocols with educator guidance for unit and lesson internalization through the "Learning Matrix" in the *Program Guide*. In grade 5, the materials state in the "Add and Subtract within 20" block, "Topic 1 'Add Using Ten Frames'; Conceptual Focus: Understand the meaning of addition; Procedural Focus: Add to make 10. Topic 2 'Use the Make 10 Strategy'; Conceptual Focus: Understand the relationship between addition and making a 10; Procedural Focus: Add within 20 on an open number line. Topic 3 'Subtract within 20'; Conceptual Focus: Model result unknown problems and part/whole part unknown problems with counters and on an open number line to solve; Procedural Focus: Subtract within 20 on an open number line."

The materials provide "Strategies and Visual Models" in the "Teacher's Corner" that supports block, topic, and lesson internalization. In grade 5, the materials include Master Class videos to support educators in their internalization of each unit and lesson. For example, the materials state "Strategies and Visual Models: Hear about common challenges students face in the 'Rates and Ratios Series.' See the *Math 180* tools and instructions that support understanding."

The materials provide a Program Activity Report that supports educators to analyze and use the Student Application data to monitor progress and differentiate instruction.

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

The materials include resources and guidance for instructional leaders to support educators with implementing the program through the administration login, "Leader's Corner." For example, "Visiting a *Math 180* Class: What to Look For" gives administrators ideas on what they can look for in a classroom that uses the materials.

Administrators can log in and observe videos about the materials and download a reflection guide to be able to support and collaborate with educators in implementing the materials as they are designed. When administrators download the "*Math 180 Flex* Look Fors and Reflection Guide," they obtain a list of indicators they can monitor in a *Math 180 Flex* classroom.

## 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.**

The HMH *Math 180 Flex* program includes detailed lesson overviews with learning objectives aligned to the TEKS and ELPS in the *Program Guide*, "Learning Matrix." In the "Fractions" block, the instructional focus is, "Students build a solid foundation in fraction operations by understanding fractions as parts of a whole and representing them visually and mathematically. They then apply this knowledge to solve real-life problems to reinforce their knowledge of concepts and procedures of fractions." Some topics covered include unit fraction multiplication, strategies for multiplying fractions, and strategies for dividing fractions.

The materials include an *Alignment Guide* that aligns to the TEKS and ELPS in the *Program Guide*, which lists student narratives and student activities with the corresponding TEKS or ELPS. For example, in grade 5, one activity that corresponds to , TEKS 1.A.i (Apply Mathematics to Problems Arising in Everyday Life) is the student activity "Use Ratios to Compare Parts." In the ELPS alignment, an example for 1.F.i (derive meaning from a variety of auditory multimedia sources to build concepts) asks students to scaffold language, differentiating by language proficiency. In this activity, students watch a video explaining how students can express whole numbers as fractions.

The materials contain suggested timeframes in the *Program Guide* to guarantee student progress toward the program's goals. The materials state, "Ensure students use the application for at least 20 minutes a day for maximum effectiveness."

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

The materials contain support for families in Spanish and English for each block, with suggestions for supporting the progress of their student through Family Letters. The Family Letters explain the pathway for students to strengthen their mathematical skills for the topic.

The materials contain suggestions for family members to support their student by explaining what lessons the block consists of and tips for what their student can do to be successful. The Family Letters explain the cruciality of each block for the complete understanding of mathematics.

## 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. 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        |
| —        | <b>TOTAL</b>                                                                                                                                                                                                                                                         | 12/12      |

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

The HMH *Math 180 Flex Program Guide* provides the definition and intended purpose of the assessments listed. The materials contain a chart showing the types of assessments (i.e., Baseline Scans and mSkills assessments).

Also located in this chart is the description and purpose of the assessment, what it assesses, and the results.

The materials state, "The *Math 180* instructional application assesses students' math skill acquisition, application, understanding, and overall progress toward algebra and beyond."

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

The HMH *Math 180 Flex Program Guide* provides a section that covers "Assessment," "Progress Monitoring," and "Data" that guides educators in ensuring consistent and accurate administration of the instructional assessments.

There are explanatory pages for each assessment type.

Also included are detailed pages on how educators can use best practices in administering the assessment and ensure the assessments are used in the most effective way.

**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 mSkills assessments in *Math 180 Flex* are accessible in both digital and printable formats.

The "Success Zone" within the Student Application includes a standard calculator feature that can be enabled or disabled to accommodate individual student needs. Teachers have complete control over calculator access and may turn it on or off at the class level or for specific students. By default, the calculator is disabled.

*Math 180 Flex* includes text-to-speech functionality for assessments, but it does not provide built-in content or language supports for digital assessments. However, students have access to read-aloud buttons, which can be used to have questions and/or answer choices read aloud to them in English or Spanish.

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

The HMH *Math 180 Flex* program offers a diagnostic assessment with TEKS-aligned tasks, i.e., Baseline Scan, that correctly places students in the correct series.

The Baseline Scan can also be given as a summative assessment to track overall HMH *Math 180* progress or exit students from the program.

The materials include varying complexity levels based on the students' progress through the Baseline Scan.

The materials include interactive item types on the Baseline Scan.

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

The HMH *Math 180 Flex* program provides a variety of formative assessments with TEKS-aligned tasks in the "Learn Zone." The "Learn Zone" includes formative assessments that gradually release students from guided to independent practice using interactive item types, varying complexity levels, corrective feedback, and support resources.

The HMH *Math 180 Flex* program provides a "Brain Arcade" that comes with a series of interactive math games designed to help students with important skills within and extending beyond HMH *Math 180 Flex* lessons.



All games are divided into chapters, which are grouped by number type, operation, or difficulty. Each chapter is then divided into levels, which progress in difficulty.

## 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 *HMH Math 180 Flex Program Guide* provides scoring information and guidance for interpreting student performance with a variety of performance reports, i.e., Program Activity Reports, Data Tables, Program Activity Report Data, Standards Report, and Growth Report. The program consists of performance measures (benchmarks) into four categories, i.e., "Masters," "On Track," "Developing," and "Not Yet," in the *Program Guide*.

The *Program Guide* provides a percentage of correct answers in the Data Tables and gives a rationale of correct and incorrect answers for the mSkills assessment. The mSkills assessments are given after each block in the program.

The materials also supply students' average results for each topic.

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

The *HMH Math 180 Flex* program provides guidance for the use of included tasks and activities to respond to student trends in performance on assessments by constantly assessing students' advancement and achievement through each of the Student Application zones ("Explore," "Learn," "Success," and "Brain Arcade"), according to the *Program Guide*.

The Student Application zones are broken into three categories: "What Students Do," "What It Assesses," and "Frequency." The materials respond to student trends by allowing students to proceed through each aspect of the zones following the successful completion of each topic.

## **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 HMH *Math 180 Flex* program supplies teachers with reports for each of the assessments provided in the program (i.e., Standards, Growth, and Program Activity) in the *Program Guide*. Teachers can access Class Level reports, which show performance summaries in either a graph or table. Teachers can also see a more detailed table of information for individual student data. The materials also provide pages for each assessment that show teachers how to interpret the reports so they can track student progress in the *Program Guide*.

The program provides a printable student progress tracker, which can assist tracking students' progress through the "Learn Zones" and "Success Zones." This tool allows students to check off the lessons they have completed and the assessment in the "Success Zone" at the end of the topic. The student progress tracker is available in English and Spanish.

The materials give teachers and students the steps to follow in the conferring, reflection, and goal-setting stages, and the rationale for the importance of each.

## **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 HMH *Math 180 Flex* program includes frequent checks for understanding within the "Learn Zone" for each topic within each block. The four sections within the "Learn Zone" (i.e., "Think," "Try," "Practice," and "Master") have procedural strategies to build student understanding ("Think"), models ("Try"), and scaffolded practice problems based on performance ("Practice" and "Master").

These frequent checks for understanding occur two–three times per topic, according to the HMH *Math 180 Flex Program Guide*.

The "Fast Track" within the "Learn Zone" is a pathway that allows students to accelerate through the lesson by answering three complex problems to model their mastery of the topic.

### 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       |
| —        | <b>TOTAL</b>                                                                                                                    | 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.

The *HMH Math 180 Flex Program Guide* provides an overview of Resources for Differentiated Instruction (RDI) with explicit teacher guidance for students who have not reached proficiency in grade-level concepts and skills in the "Learn Zone" content. Students solve scaffolded problems that center on key concepts and are "explicitly taught how to use familiar strategies to solve contextualized problems." The *Program Guide* for *HMH Math 180 Flex* gives educators explicit instructions (e.g., reviewing the data, creating student groups or individual students, and selecting lessons) on how to identify students in need of additional practice in foundational concepts.

The materials include educator guidance on the Boost and Boost Focus lessons for students to "analyze and connect key concepts learned during group instruction to creative, real-world problem situations."

The *HMH Math 180 Flex* program also provides an RDI Index that houses the Boost lessons, "Teacher Display" tools, and RDI student pages for each topic within the block. These Boost lessons are designed to provide differentiated instruction to "target the needs of all students." In grade 5, if students are having difficulty with understanding what numbers make a ten when one addend is given, the use of ten frames in Boost Lesson 1A uses the logical progression of "Set Up," Engage," Explore," and "Extend." Students have additional practice through the Boost student pages with "Engage," "Explore," "Practice," "Challenge," and "Reflect."

### **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 HMH *Math 180 Flex* program includes "Multilingual Learner Supports." Within the "Multilingual Learner Supports," each block has "Language Support at a Glance" documents that give educators explicit guidance for supporting English language learners. The "Language Support at a Glance" documents provide "Focus Language Expectations," "Scaffolding Language to Explain," "Leveraging Linguistic Assets," and "Differentiating by Language Proficiency." The materials include documents that provide explicit educator guidance on the pre-teaching of academic vocabulary.

The materials contain embedded supports for developing academic vocabulary and unfamiliar references in text within the "Think" phase of the "Learn Zone." Students watch a short animated instructional video for the concept, and the video introduces key math vocabulary.

The HMH *Math 180 Flex* program offers a virtual glossary embedded in the program for students to search math content. This support allows students to look up unfamiliar references in the text.

### **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 HMH *Math 180 Flex Program Guide* provides explicit educator guidance for enrichment and extension activities for students who have demonstrated proficiency in grade-level and above-grade-level content and skills in the "Learn Zone."

The materials provide educators Stretch lessons for students who have mastered *Math 180* content but are still not connecting foundational skills to the core classroom. Stretch lessons provide atypical problems that develop students' ability to work across numbers and operations, apply skills flexibly, and use mathematical reasoning strategies. Stretch lessons are designed to extend students' skills.

In the HMH *Math 180 Flex Program Guide*, educators can use Step-Up lessons for students who progress above grade-level proficiency by completing challenging problems that connect to Algebra 1 in the upper series. In grade 5, if students have mastered Block 1, Topic 3, involving "Identifying Patterns in Multiples of 10," they can move to the Stretch Lesson 2A, to apply their critical thinking skills to solve intricate number puzzles with multiples and factors.

### **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 HMH *Math 180 Flex* includes the accommodation of a calculator on digital materials that educators can enable and disable to support individual students within the mSkills assessments.

The materials include accommodations for text-to-speech that educators can enable and disable. The materials do not include content and language supports for students that educators can enable and disable.

### **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.**

HMH *Math 180 Flex* offers RDI to guide educators with options for students to demonstrate understanding of mathematical concepts in various ways.

The "Set Up" portion of the RDI lesson provides a review of prerequisite objectives taught during group instruction. Educators can use the think alouds to guide thinking, lead a discussion, or elicit student thinking. The "Engage" portion of the RDI lesson encourages students to analyze key mathematical concepts using simpler numbers or a different problem structure to help them connect to the lessons in the "Student Application."

The "Explore" portion of the RDI lesson allows students to solve a contextualized problem that uses the Concrete-Pictorial-Abstract (CPA) approach to reveal lesson content. The "Check Understanding" portion of the RDI lesson invites students to make sense of key lesson objectives in context. Educators can use the sample narration to discover student thinking and elicit proper student responses. The "Extend" portion of the RDI lesson includes educators asking intentional questions as students work the "Practice," "Challenge," and "Reflect" sections on the student sheet.

## 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.**

In *HMH Math 180 Flex*, the "Teacher's Corner" displays explicit prompts and guidance through videos for educators to use to anchor prior knowledge and big ideas. The materials provide highlights and connect key concepts through multiple means of representation.

The materials include real-world scenarios that introduce concepts within real-world contexts, helping students connect new information to their existing understanding.

### **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.**

*HMH Math 180 Flex* offers multi-tiered intervention methods for various types of practice in conceptual, procedural, and abstract modeling for students. The materials have students move through different levels of scaffolds as they progress through the lessons. In grade 3, "Multiplication and Division," Block 1, Topic 2, "Multiply 1-Digit Factors," the program gives a scenario for building a website of the school's sports teams. The program walks students through the concept procedurally, and then requires students to think about the problem differently by using an area model to show students how to use the distributive property to break down a large multiplication fact.

*HMH Math 180 Flex* is built to support students on all levels. The program lessons start with a video lesson, and then students can choose the "Fast Track" or "Try It." The program allows students to choose their comfortability with the lesson and how they want to approach their work on the lesson concept. The

HMH *Math 180 Flex* program includes materials for multi-tiered intervention methods for various types of practice and structures through the Lesson Map platform. Students move through different levels of scaffolds as they progress through each lesson within the blocks.

The HMH *Math 180 Flex* program includes educator guidance to support effective implementation through the Program Activity Report of the "Teacher's Corner." *Math 180 Flex* includes reporting features and assessments to help teachers monitor student progress and inform instructional decisions for multi-tiered intervention. Adaptive technology empowers students by identifying their individual needs. The *Program Guide* explains technology-aided instruction and intervention. The adaptive technology supports all learners by targeting and addressing the specific needs of groups and individual students. The program provides students with appropriate instruction and content based on their readiness.

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

HMH *Math 180 Flex* includes the TEKS from below grade level to pre-algebra skills. Students can progress and work above grade level, which provides students a chance to practice enrichment and extension activities. The materials include enrichment and extension methods that support various forms of engagement through interactive and gamified elements. Engaging features like the "Brain Arcade" make math fun while building computational and strategic fluency. The program uses gamification to engage students and further motivation.

The materials include guidance to support educators in effective communication. The program provides resources like the "Resources for Differentiated Instruction and Problem Solving" PDF, which offers additional lessons and mathematical and pedagogical support to help teachers differentiate instruction based on student needs.

The "Success Zone," built as a board with choices, features multiple problem formats that challenge students to apply math skills to non-routine items. As students begin making math content gains, HMH *Math 180 Flex* offers opportunities to accelerate learning and practice applying skills to more complex situations by moving up levels through the "Fast Track."

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

The HMH *Math 180 Flex* program includes immediate corrective feedback for incorrect answers, including responses to common wrong answers.

In the "Practice" portion of the "Learn Zone" of the materials, students are given targeted hints by the platform if they are having difficulty. These targeted hints offer guidance to students who are incorrect, without immediately revealing the correct answer. In grade 3, "Fractions," Block 2, Topic 3, "Subtract



Fractions on a Number Line," if the student subtracts  $12/5 - 4/5$  instead of  $1 \text{ and } 2/5 - 4/5$ , a hint pops up to remind the student that "a mixed number is a whole number and a fraction[.]"

### 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 HMH *Math 180 Flex* program includes embedded linguistic accommodations. Students can use the mTools tutorial videos to understand visual aids, including models, grids, and representations of mathematical concepts. The tutorial videos and visual aids appear in every lesson. These resources make the materials more accessible to emergent bilingual students.

Students use the glossary during lessons to look up unfamiliar terms. The glossary gives definitions, pronunciations, examples, and visual representations. For example, in grade 5, "Multiplication and Division," Block 1, Topic 1, Lesson 1: "Identify Equal Groups," the lesson discusses arrays. If students need to check the definition or hear the term, they click the glossary.

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

The HMH *Math 180 Flex* program provides guidance and support for educators in effectively using the materials for emergent bilingual students by providing "Language Support at a Glance" documents that include "Focus Language Expectations," sentence frames, visuals, and differentiation by language proficiency. In grade 5, "Fractions," Block 1, the materials ask educators to consider suggestions to support students in describing and comparing fractions. One of the suggestions in the materials states, "In Hmong, Korean, Portuguese, Somali, and Spanish, comparative adjectives are formed with separate words. For example, students may use 'more short' instead of 'shorter.'"

The materials provide resources and strategies for differentiating instruction, enabling teachers to tailor their approach to meet the varied needs of students, including English learners. Suggestions for supporting English learners are embedded within the program's materials. In grade 5, the materials give educators suggestions for each category of language proficiency (i.e., Pre-production/Beginning, Intermediate/High Intermediate, Advanced) to help students to answer problems, give solutions, or justify reasoning.

### **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.**

HMH *Math 180 Flex* delivers embedded educator guidance to support emergent bilingual students in developing academic vocabulary by giving explicit vocabulary instruction. The materials recognize the challenges emergent bilingual students face with mathematical academic vocabulary, and provide strategies to teach critical mathematical terms. In grade 5, "Addition, Subtraction, and Place Value," Block 3, teachers are provided with scaffolding language to guide students to describe three-digit numbers using boxes (hundreds), rolls (tens), and singles (ones).

The materials include embedded educator guidance to support emergent bilingual students in increasing comprehension and build background knowledge through oral and written discourse tasks. Scaffolded oral and written tasks in the Student Application reinforce math vocabulary and concepts. In grade 5, "Multiplication and Division," Block 2, "The Distributive Property," students are asked to explain and model, using sentence frames, how students can use conditional conjunctions to state their reasoning for solving a problem using the distributive property.

The materials provide "Language Support at a Glance" documents that give educators examples of Spanish cognates. The materials have suggestions of the ways that some languages use phrasing. In grade 5, the "Language Support at a Glance" document for "Fractions," Block 1, "Fraction Concepts," provides suggestions for oral discourse stating, "partner students that share a home language and encourage them to first compare fractions using their home language."

**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.

In *HMH Math 180 Flex*, each block within the program consists of the "Learn Zone," which has two different pathways where students can use practice opportunities to demonstrate their depth of understanding of the topic.

One of the pathways in the "Learn Zone" is broken into three segments: "Try," "Practice," and "Master." These practice opportunities allow students to work through a pathway to ensure their understanding of the aligned TEKS. In grade 5, students practice composing numbers with boxes, rolls, and singles using real-world applications (i.e., game shop, tokens) and using a hundreds chart to add two-digit numbers using the distributive property.

Students may also enter the "Fast Track," the second pathway within the program, if students feel confident in the topic. Instructional assessments within the program are aligned to the TEKS, and students can demonstrate their depth of understanding within these pathways. In grade 5, students can answer questions for the "Fast Track," which is composed of three questions for the block/topic (i.e., using a hundreds chart to add two-digit numbers using the distributive property). If the student is successful in the "Fast Track," they can move directly to the "Success Zone."

#### 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.

In *HMH Math 180 Flex*, students can gain enrichment or extension in the "Success Zone." Students choose the question they want to answer. The program shows seven question types, including Complete It, Word Play, and Find or Fix.

The program has a Wild Card question students can complete that is more challenging and complex. The Wild Card question is worth more points. The objective in the "Success Zone" is to have students "clear the board" and earn as many points as they can.

The "Success Zone" leads to grade-level proficiency in the block and topic where the student is working.

## 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.

In *HMH Math 180 Flex*, the materials organize the concepts in the "Learning Matrix" into three progressive blocks with instructional focus statements detailing the foundational skills for the three topics.

The materials consist of the big ideas broken into three topics that follow a coherent, logical progression for student learning horizontally within the grade level.

The materials contain the key mathematical concepts to lead students from a conceptual understanding of operations to operating with expressions. The *Program Guide* states, "Each Topic helps students first build understanding of a mathematical idea, and then apply new concepts in rigorous, yet accessible, problem-solving contexts." In grade 5, students learn the conceptual understanding of "Dividing by Taking Out Equal Groups" in "Multiplication and Division," Block 3, Topic 1, Lesson 1, and then move into operating with expressions in the next topic.

### 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 *HMH Math 180 Flex* program shows coherence vertically across concepts and grade levels of the *Program Guide*. The grade levels show the progression of the mathematical concepts from grades K–8.

The chart shows the program's purposeful connections, which allow students to progress in their mathematical understanding.

*HMH Math 180 Flex* demonstrates coherence vertically across grade levels by offering big ideas needed in foundational mathematical skills for students. This includes addition, subtraction, multiplication, division, fractions, and decimals. These concepts all connect to algebra students will encounter in middle school. Within each math concept, the materials can be accessed at different entry points of grade levels and allows students to move within the materials from below grade level to at and above grade level.

#### **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 HMH *Math 180 Flex* 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 level. The materials are designed to accelerate students toward grade level by rebuilding the foundational skills to close skill gaps and successfully transition to algebra. In doing so, the program implements the block series that builds upon previously acquired knowledge and reinforces connections between different areas of math.

The materials demonstrate coherence across lessons or activities by connecting students' prior knowledge of concepts and procedures to the mathematical concepts to be learned in future grade levels. The HMH *Math 180 Flex* program targets students who are below grade level and need to build a strong foundation in core math concepts. The block series is used to progress students at their own pace toward essential skills in areas leading to algebra, like multiplication, division, fractions, decimals, rates, ratios, proportional relationships, and linear and nonlinear functions.

In the HMH *Math 180 Flex Program Guide*, the activities and lessons put students on the progressive path toward algebra readiness, providing time to develop the conceptual understandings, as well as extending and applying the standards for middle school and algebraic reasoning.



## 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.

In *HMH Math 180 Flex*, the "Brain Arcade" is designed to provide students with spaced retrieval opportunities in an intentional place to practice previously learned skills and concepts across the learning pathways.

The "Brain Arcade" is intended to be used once the student completes the assigned topic for additional practice of the topic in a game format.

The "Brain Arcade" provides a collection of engaging games designed to improve procedural fluency and strategic thinking in an engaging way. For example, in grade 3, the "Sea Level" game focuses on whole number addition with various levels of complexity.

The *HMH Math 180 Flex* program includes an intentional design to support spaced retrieval by guiding students through a structured sequence in the "Learn Zone" ("Try," "Practice," "Master"). These components allow students to engage with key skills multiple times across varied contexts, helping students to reinforce and retain learning over time.

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

The *HMH Math 180 Flex* program provides interleaved practice opportunities with previously learned skills and concepts across learning pathways for students in the "Master" segment of the "Learn Zone." Within the "Student Application," the "Learn Zone" offers adaptive practice and instruction so students can demonstrate proficiency while allowing for improvement of retention and understanding. For example, in "Multiplication and Divide," Block 3, Topic 1, Lesson 2: "Use Multiplication to Divide," students are asked the inverse number sentence to leverage their knowledge of multiplication to divide, such as, 18 divided by 9 is 9 times what number to equal 18.

The "Success Zone" in the *HMH Math 180 Flex* program allows students to practice interleaved skills by applying learned skills and procedures to multiple problem formats and different problem-solving situations.

In the "Brain Arcade" of HMH *Math 180 Flex*, students can engage in interleaved opportunities to previous skills and concepts. For example, in grade 5, the "DJ Why" game has students practice their fluency of expressions.

## 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.

HMH *Math 180 Flex* offers questions and tasks for students to interpret models for mathematical concepts and situations. In grade 5, students are tasked with "Identify Equal Groups in Multiplication and Division" in Block 1, Topic 1, Lesson 1: by looking at a representation of an array and analyzing the model with words. For example, "There are \_\_\_\_ groups of tiles shown, and the number of tiles in each group is \_\_\_\_."

In grade 5, "Addition, Subtraction, and Place Value," Block 1, Topic 1, Lesson 2: "Interpret Sums as Ten Plus More," students are given a mathematical expression and ten frames to place the addends (counters) on each ten frame, showing students how you can move counters to make ten.

In grade 5, "Multiplication and Division," Block 1, Topic 1, Lesson 2: "Interpret Products," students are asked to build an array model for a specific multiplication expression to find the product. Students manipulate and move boxes to make \_\_\_\_ rows of \_\_\_\_, using different scenarios.

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

In HMH *Math 180 Flex*, students are provided questions and tasks to create concrete models and pictorial representations in the "Learn Zone."

In grade 5, "Addition, Subtraction, and Place Value," Block 3, Topic 1, Lesson 1: "Package Tokens Using Boxes, Rolls, and Singles," asks students to use base-ten blocks to represent the number given, then to interpret the model using tasks like completing sentence stems about the model. For example, you can pack \_\_\_\_ boxes.

In grade 5, "Fractions," Block 1, Topic 1, Lesson 1: "Model Fractions as Parts of a Whole," students manipulate and use fraction strips with halves, fourths, and eighths to make one whole.

In grade 5, "Multiplication and Division," Block 1, Topic 2, Lesson 3: "Find Missing Factors," students will create a pictorial model of an array to find a missing factor in the equation.

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

In *HMH Math 180 Flex*, questions and tasks provide students occasions to apply conceptual understanding to new scenarios and contexts.

In grade 5, "Addition, Subtraction, and Place Value," Block 1, Topic 1, Lesson 2: "Add to Make 10" supports students in using a ten frame to make a ten. The next lesson, "Solve Join Problems With Ten Frames," uses that conceptual understanding of making a ten to go beyond ten and add numbers within 20.

In grade 5, "Fractions," Block 1, Topic 1, Lesson 2: "Use Fraction Models" uses fraction pieces to conceptually build fractions to add them. After students are comfortable building models, the next lesson, "Use Models to Compare Fractions," gives the opportunity to use the same models in order to now compare different fractions.

In grade 5, "Fractions," Block 1, Topic 1, Lesson 2: "Use Fraction Models," the three activities in the "Fast Track" ask students to compare fractions by building fraction models, and then apply their understanding in a real-life situation using fraction comparison (mailing a package at the post office).

## 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.

HMH *Math 180 Flex*'s structure is designed to build students' fluency by having students practice the same problem type five times and then again in the "Master" section of the materials, repeating with eight to twelve additional problems. In grade 5, students are tasked to show a whole with different fractions using a model. The video explains that you can write many equations using different fractions to equal one whole. These tasks are designed to build student fluency so they can complete grade-level mathematics for different fractions equal to one whole.

The HMH *Math 180 Flex* "Brain Arcade" provides tasks students choose from a variety of games to build computational fluency and strategic thinking in an engaging learning environment. The "Brain Arcade" allows students to continuously practice and become more fluent in their skills. In grade 5, students can play the game "Jelly Drop" to make different fractions into one whole.

The materials provide tasks that are designed to build student automaticity necessary to complete grade-level mathematical tasks by incorporating visual models, multiple strategies, and meaningful practice to support students in mastering concepts and skills, which contributes to automaticity. For example, students have a lesson map that allows them to "Try," "Practice," and "Master" specific tasks.

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

HMH *Math 180 Flex* provides opportunities for students to practice the application of flexible mathematical procedures through multiple means of representation, including videos, print, audio recordings, animations, games, and interactive tools. This diverse engagement promotes understanding and flexible application.

In HMH *Math 180 Flex*, opportunities are provided for students to practice the application of efficient, flexible, and accurate mathematical procedures. In grade 5, "Addition, Subtraction, and Place Value," Block 3, Topic 1, Lesson 3: "Package Tokens in Different Ways" shows students a variety of numbers and asks students to practice flexible mathematical procedures in representing numbers in different ways.

In the materials, "Multiplication and Division," Block 1, Topic 2, Lesson 3: "Find Missing Factors" offers efficient mathematical procedures to support students in using array models to effectively represent multiplication problems.

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

In the HMH *Math 180 Flex* program, the materials provide opportunities for students to evaluate mathematical representations, models, strategies, and solutions for efficiency throughout learning pathways by emphasizing visual models, interactive tools (mTools), and the introduction of mathematical language and symbols to break down concepts. This helps students understand the relationship between different representations and evaluate which is most efficient in a given situation. In grade 5, "Multiplication and Division," Block 1, Topic 3, Lesson 1: "Multiply by 10," students use a table to represent two expressions multiplying by 10. They are then asked to explain the table using sentences and make connections to the math. This allows students to evaluate the mathematical process of multiplying by 10 using an efficient method.

The materials provide opportunities for students to evaluate mathematical representations, models, strategies, and solutions for flexibility throughout learning pathways through the flexible learning paths. The program utilizes adaptive technology and personalized learning pathways, allowing students to progress at their own pace and focus on areas where they need more support.

The materials include formative and summative assessments that help teachers monitor student progress and differentiate instruction, and use data that can be used to assess student understanding and the accuracy of their work.

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

HMH *Math 180 Flex* uses RDI lessons that offer scaffolded lessons, which are designed to help students in developing increasingly efficient problem-solving strategies. The digital platform offers a variety of strategies as a pathway for students to represent remainders as fractions, and the students follow the 12 problems to practice using different tools.

The HMH *Math 180 Flex* program places students on a personalized path of instruction and provides multiple opportunities to demonstrate mastery. Students remain on their specific pathway.

The HMH *Math 180 Flex* program utilizes the students' learning path through multiple sets of questions within the lesson map. Lessons in *Math 180* break down concepts using a concrete approach, aiding students in grasping the underlying principles.

## 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       |
| —        | <b>TOTAL</b>                   | 11/11     |

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

The HMH *Math 180 Flex* program addresses the TEKS in the materials by linking student activities to both conceptual understanding and procedural skills in the "Learning Matrix." Instruction integrates concrete and abstract approaches, targeted practice, and reasoning models. The program provides scaffolded practice to build conceptual fluency and support students in applying reasoning to tasks.

The materials place students on the path toward algebra readiness by providing time to develop the conceptual understandings, extending and applying the standards for middle school and algebraic reasoning. The materials include a "Scope and Sequence" that is built around a focused and coherent curriculum that enables students to progress quickly and effectively toward grade-level standards and algebra readiness.

The materials include an *Alignment Guide* that identifies the TEKS in each lesson, including annotations to how the lesson supports conceptual development.

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

The materials use questions and tasks that provide opportunities to use concrete models and pictorial representations as required by the TEKS. For concrete models, such as in grade 5, in the "Addition, Subtraction, and Place Value" block, students use digital manipulatives (base-ten blocks) to break apart numbers. Pictorial representations in math use visual elements to represent numerical data or mathematical concepts, making them easier to understand and solve problems. In grade 5, in the "Fractions" block, students utilize fraction bars and number lines to decompose fractions to represent a sum of fractions.

The HMH *Math 180 Flex* program uses questions and tasks that provide opportunities to use abstract models as required by the TEKS. Abstract models in mathematics are generalized representations of concepts or systems, using symbols and relationships to capture essential features without specific details. In grade 5, in the "Multiplication and Division" block, students learn to use the distributive

property of multiplication. This moves students from concrete to pictorial, and then to abstract, which gives them a better understanding of the relationship.

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

The HMH *Math 180 Flex* program is designed to move from concrete understanding (using manipulatives and visual aids) to representational understanding (using visual models and diagrams), and then to abstract concepts (using mathematical language and symbols). In grade 5, in the "Multiplication and Division" block, students learn to divide by taking out equal groups using the array model. Tiles are introduced at the beginning of the lesson and prompt students to create equal groups by sorting the tiles. As the lesson progresses to more abstract concepts, students are able to explain and interpret using number sentences.

In grade 5 of the materials, students use fraction pieces to demonstrate equivalent fractions and compare fractions. As the lessons progress, students connect that learning to locate fractions on a number line using digital fraction pieces and also number representations. The lesson ends with students creating and plotting fractions on a number line and using an open number line to add and subtract. Students are able to explain why they place the fractions in the spots on the number line. These student activities move students through the learning progression of concrete and representations to abstract.



## 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        |
| —        | <b>TOTAL</b>                   | <b>8/8</b> |

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

The HMH *Math 180 Flex* program provides opportunities for students to develop mathematical language using visuals, manipulatives, or other language development strategies by using visuals and virtual manipulatives, such as base-ten blocks and fraction bars. These visuals and manipulatives help students connect mathematical terms and ideas to concrete objects and representations. This approach enhances student comprehension, allowing students to develop fluency in both the language of mathematics and mathematical concepts.

In grade 5, the materials include visual fraction models to introduce the mathematical language of *numerator*, *denominator*, and *equivalent* fractions. The equivalent fractions are presented in standard form, written form, and visual representations. The lesson models the proper usage of academic vocabulary.

### 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.

HMH *Math 180 Flex* includes "Professional Learning" pages in the *Program Guide* that are dedicated to each topic within the "Student Application." These pages highlight key vocabulary words relevant to each topic by bolding them to inform educators. However, the guide does not provide guidance on how to scaffold or support students in using these academic vocabulary terms for effective communication with peers and educators.

The materials include an embedded glossary for students to utilize to look up unfamiliar mathematical vocabulary.

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

In *HMH Math 180 Flex*, the materials include embedded guidance to support student application of appropriate mathematical language and academic vocabulary in discourse. For multilingual learners, all mathematical terms are provided in Spanish and English, and many instructions within the student software are translated and read aloud. The Student Application allows multilingual students to toggle between English and Spanish for full translations, which directly supports their language development and comprehension of mathematical concepts.

The materials include embedded guidance to support student application of appropriate mathematical language and academic vocabulary in discourse through the glossary. The *HMH Math 180 Flex* program includes an embedded glossary that helps support students by providing mathematical vocabulary and definitions that further guide their understanding of math concepts. In grade 5, in the "Multiplication and Division" block, students are to identify equal groups using an array model. The embedded glossary allows students to click on the glossary and look up the word *array*. The glossary provides a definition, as well as an example.

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

*HMH Math 180 Flex* provides prompts for educators that allow students to converse with their peers in mathematical discussions, allowing them to articulate their reasoning through the mathematics. Some suggestions from the materials include, "Have students collaborate on solving these problems."

The materials include guidance for educators to have one-on-one conferences or discussions about math content and goals.

#### **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 *HMH Math 180 Flex* program includes mSkills assessments for each topic. The program gives rationales for incorrect problems within these assessments. These rationales enable educators to understand the reasoning behind student errors.

The *Program Guide* includes a section of "Professional Learning" that explains struggles learners might have within the topic. In grade 5, "Addition and Subtraction," Block 2, Topic 1, the materials state, "Learners often struggle to master abstract algorithms," then relates how the program supports students. This evidence is not embedded in the program, but is printable for educators.

In the materials, the RDI lessons offer teachers exemplar responses to questions. However, the materials do not include guidance on addressing or redirecting incorrect student responses effectively.

## 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       |
| —        | <b>TOTAL</b>                   | 4/4       |

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

HMH *Math 180 Flex* incorporates the process standards within the lessons in the program's *Alignment Guide*. For example, in the *Alignment Guide*, it shows the following: "1.A.i 'Apply Mathematics to Problems Arising in Everyday Life'; Student Activity: ISBN 9798202136283, *Math 180*: 'Addition, Subtraction, and Place Value'; 'Learn Zone'; Block 1, Topic 2, 'Add Within 20 by Jumping to 10'; 'Master', Problem 4; Screen capture of 'Master', Problem 4 provided via link. To view in *Math 180* interactive software, navigate to 'Addition, Subtraction, and Place Value'; Block 1, Topic 2, 'Add Within 20 by Jumping to 10', Lesson Map; 'Master', Problem 4."

The HMH *Math 180 Flex* program integrates the TEKS process standards into instructional materials by providing opportunities throughout the learning pathways for students to select appropriate tools (such as manipulatives) to solve problems. The materials also provide opportunities throughout the learning pathways for students to select appropriate techniques (such as estimation) to solve problems.

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

The HMH *Math 180 Flex* program offers an *Alignment Guide* that provides an overview of examples on how the standards are incorporated into the lessons. Also, in the *Program Guide*, there is a section titled "Mathematical Thinking" that gives descriptions of how the process standards are incorporated and connected throughout the learning pathways.

In grades 3–5, the *Alignment Guide* provides process standards correlations to HMH *Math 180 Flex* activities. For example, in grade 5, 1.A.i "Apply Mathematics to Problems Arising in Everyday Life," the materials include a student narrative and a student activity list. The materials do not describe where the process standards are incorporated or connected throughout the learning pathways. The materials only show how the "Learn Zone" lessons are aligned to grade-level TEKS.

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

The HMH *Math 180 Flex* program includes an overview of the TEKS process standards incorporated into each of the lessons. The *Alignment Guide* to the grade 5 TEKS and ELPS provides a document that

indicates where each process standard is included in the lesson materials. For example, if an educator wanted to locate lessons that incorporate 5.4.D.i, the *Alignment Guide* provides where this is located, along with a link to an example problem.

In the HMH *Math 180 Flex Program Alignment Guide*, grade 3, it states, "1.E.i 'Create Representations to Organize Mathematical Ideas'; Student Activity: ISBN 9798202136283, *Math 180*: 'Addition, Subtraction, and Place Value'; 'Learn Zone'; Block 3, Topic 3, 'Add and Then Regroup'; Practice, Problem 3; Screen capture of Practice, Problem 3 provided via link. To view in *Math 180* interactive software, navigate to 'Addition, Subtraction, and Place Value'; Block 3, Topic 3, 'Add and Then Regroup', Lesson Map; Practice, Problem 3."

## 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       |
| —        | <b>TOTAL</b>                   | 9/9       |

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

The materials provide opportunities for students to think mathematically and to make sense of mathematics by focusing on real-world understanding. Anchor lesson videos are provided to connect real-world scenarios and careers, helping students see the relevance and application of mathematics in the lessons. In grade 5, "Multiplication and Division," Block 1, "Explore Zone: Simulation, Hype up the Fair," students think mathematically by creating a social media account to attract community members to a town fair.

The materials provide opportunities for students to persevere through solving problems in the "Success Zone." The materials prompt students to review their work, identify errors, and retry problems with new strategies.

The materials provide opportunities for students to make sense of mathematics by providing instructional videos in every lesson, modeling the specific skills and thinking targeted. Following these structured activities regularly helps students make sense of mathematical patterns and reasoning.

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

The materials include RDI lessons that will "reinforce skills to move to the next lesson." Boost and Boost Focus lessons are targeted questions to assess students' understanding and guide students to explain their mathematical reasoning. The "Extend" portion of the Boost lessons provide prompts for educators to use for students to explain and justify the multiple ways to solve problems.

The materials allow students to demonstrate their understanding by showcasing their learning on the "Success Zone" board after each topic. The program does not prompt students to choose a strategy to solve the problems, and it does not specify or prescribe particular strategies. The materials also do not

currently provide guidance or prompts to assist students in explaining or justifying multiple approaches to solving the problems.

**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.**

The materials provide opportunities for students to do, write about, and discuss math with peers and/or educators in the RDI lessons (Boost or Stretch). In the "Set Up" portion of the Boost lessons, the materials provide think alouds for educators to facilitate the mathematical discussion around the topics. In grade 5, "Use Models to Compare Fractions," the materials suggest for educators to state, "We know how to write equations for fractions that have a sum of 1." This introduction will help activate students' prior learning to the skill they are currently working.

The materials provide opportunities for students to do, write about, and discuss math with peers and/or educators in the RDI lessons (Boost or Stretch). In the Engage section of the Boost lessons, the materials provide students a way to "analyze the mathematical concept using simpler numbers or a different problem structure to help them connect to the lessons in the "Student Application."

## 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.**

The materials include RDI lessons (Boost or Stretch) that support educators in guiding students to share and reflect on their problem-solving approaches, including explanations. In the "Check for Understanding" portion of the Boost lessons, educators are given a "sample narration to elicit proper student responses and discover student thinking." This allows educators to discuss with students the mathematical thinking behind their response. In grade 3, the materials direct educators to "Point out to students they used fraction pieces to represent and solve the problem."

The materials include RDI lessons that assist educators in facilitating student sharing and reflection on their problem-solving strategies through explanation. Additionally, these resources guide teachers on how to support students in justifying their approaches.

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

The materials include Boost and Stretch lessons that educators can facilitate with students. In the "Extend" portion of the Boost or Stretch lessons, students are able to "Practice," "Challenge," or "Reflect" with peers about their mathematical understanding. In grade 3, "Use Models to Compare Fractions," the students are asked to discuss with peers and/or educators, "How do you use the fractions pieces to compare the fraction sizes?"

The materials indicate when the answer is incorrect by providing students hints. For example, "Remember to break apart the numbers into tens and ones and then multiply all the parts. Try using the area model to find the missing products," is an example in the grade 3 "Multiplication and Division" block.

In grade 3, "Multiplication and Division," Block 1, Topic 1, Lesson 1: "Practice" section of "Identify Equal Groups," if a student counts by ones instead of twos to solve  $6 \times 2$ , the automated hint says, "Count one row at a time to find the number of tiles in all rows."