

## HOUGHTON MIFFLIN HARCOURT MATH EXPRESSIONS COMMON CORE © 2013 GRADES K-5

### I. Materials align to PA Core Standards for Mathematics

*Math Expressions Common Core © 2013* for Kindergarten through Grade 5 from **Houghton Mifflin Harcourt™ (HMH®)** focuses on the critical areas of instruction for the Common Core State Standards (CCSS), which have been adopted by Pennsylvania. With this focus, students using *Math Expressions* dive deeply into the mathematical concepts, build procedural skills and fluency, and take time to develop in-depth understanding of major mathematical ideas.

In *Math Expressions*, teachers create an inquiry-based environment and encourage constructive discussion. Students invent, question, model, represent, and explore, and also learn and practice important math strategies. Through daily *Math Talk*, students explain their methods and, in turn, become more fluent in them. Mathematics content and models connect and build across the grade levels to provide a progression of teaching and learning that aligns precisely with the Common Core State Standards for Mathematics.

*Math Expressions* follows an Inquiry Learning Path Model, in which students are led through a series of learning phases that encompass conceptual understanding (phases 1 and 2), fluency (phase 3), and application (phases 3 and 4). This model provides a well-integrated approach that embodies the instructional shifts of the Common Core State Standards. Each *Math Expressions* lesson works with Five Core Structures: Building Concepts, Quick Practice, Math Talk, Student Leaders, and Helping Community. Robust teacher support for scaffolding and differentiation is provided throughout every phase of the Inquiry Learning Path Model. This ensures that Philadelphia's teachers and students are comprehensively engaged in the rigor of the math standards in the most effective ways possible. The table below shows the ways the *Math Expressions* program's Inquiry Learning Path delivers optimal learning experiences with standards-based content.



## Teaching Model: An Inquiry Learning Path

### Phase 1: Guided Introducing

The teacher elicits and the class works with prior knowledge that students bring to a topic.

- Teacher and students discuss student ideas and methods.
- Teacher identifies different solution methods used by students as well as typical errors, and ensures that these are seen and discussed by the class.

### Phase 2: Learning Unfolding

The teacher helps students form emergent conceptual networks and use mathematically desirable and accessible methods.

- Explanations of methods and mathematical issues include math drawings and other pedagogical supports to stimulate correct relating of concepts and symbols.
- Teacher focuses on or introduces mathematically desirable and accessible methods.
- Erroneous methods are analyzed and repaired with explanations.
- Advantages and disadvantages of various methods, including the current common method, are discussed so that central mathematical aspects of the topic become explicit.

### Phase 3: Kneading Knowledge

The teacher helps students gain fluency with desired methods.

- Students may choose a method.
- Fluency includes being able to explain the method.
- Some reflection and explaining still continue (kneading the individual conceptual networks).

### Phase 4: Maintaining Fluency and Relating to Later Topics

The students demonstrate their mathematical understanding with the teacher giving occasional problems, initiating discussions, and assisting with connections to prior knowledge.

A correlation of the Common Core State Standards to the lessons in **Math Expressions** is in the front matter of the Teacher Edition. Each unit begins with *Learning Progressions for the Common Core State Standards* and *Content Standards Across the Grades*. Both tables summarize the current concepts, the related concepts from the previous grade, and the related



concepts in the next grade. The *Putting Research into Practice* feature, by **Math Expressions** author Karen Fuson, focuses on the mathematical and cognitive research that shapes the program's pedagogy and enhances the interconnectedness of concepts and skills.

The Mathematical Practices are explicit and central to the lessons in **Math Expressions**. Lesson activities are labeled with their corresponding Mathematical Practice. In each unit, a *Focus on Mathematical Practices* lesson integrates all of the eight Mathematical Practices in a variety of real-world problem-solving situations. A *Getting Ready to Teach the Unit* feature concisely highlights the best ways to convey the Mathematical Practices, and continuous teacher support is provided throughout the lesson at point-of-instruction.

At the lesson level, each *Activity* lists its targeted Mathematical Practices in the Teacher and Student Editions. This feature highlights how thoroughly the Mathematical Practices are integrated in the teaching of the Content Standards throughout the program. Throughout each *Activity* page in the Teacher Edition, instructional guidance supports the continued integration of Mathematical Practices and the use of best practices.

*Professional Development Videos* and in-depth, author-led Brainshark videos provide comprehensive guidance for **Math Expressions** standards-based instruction.

## II. Material

### A. Foundational Skills

#### **Standards: Coherence**

The learning path throughout the entire **Math Expressions** program is based on the grade-by-grade progressions in the Common Core State Standards. To show the coherence of **Math Expressions** content, each unit begins with a *Learning Progressions for the Common Core* table and a *Get Ready to Teach* section. These features provide a detailed look at the relevant content/standards covered previously, the relevant content standards covered in the current unit, and the relevant content/standards covered in the future.

In **Math Expressions**, students relate grade-level concepts to prior knowledge within the



context of the core activities in each lesson, often after the first activity. Additionally, *Ask for Ideas* prompts and *Sharing Methods* related activities facilitate a discussion of prior knowledge. Through the use of math models, step-by-step instruction, and real-world problem-solving, students are continually provided with increasingly complex problems across a variety of contexts.

**Math Expressions** content builds upon itself as the levels progress. Within lessons, students are reminded of representations of concepts learned in earlier grades. *Math Background*, prior knowledge discussions and activities, and other instructional notes provide information about the lessons' connections to foundational concepts and skills, as well as discussions and exercises that refresh students' knowledge.

The **Math Expressions** Scope and Sequence brochure is available for your review at <https://hnhco.box.com/MathExpressionsSS>. Planning and pacing resources are provided, and they offer the flexibility that teachers prefer.

## B. Text Complexity

### **Standards: Focus**

**Math Expressions** focuses on the critical areas of instruction for the Common Core State Standards for Mathematics, and students spend the majority of their time on the major domains and standards of the grade-level.

Correlations of the CCSS to the lessons in **Math Expressions** are in the front matter of the Teacher Edition, the *Learning Progressions* and *Content Standards Across the Grades* table, the *Unit Planning* sections, and the *Research and Math Background* sections. The content and practice standard correlations also appear throughout the lesson pages. Teacher support for best way to convey the Common Core State Standards for Mathematical Practice is provided on the *Getting Ready to Teach the Unit* pages and throughout the lessons.

Standards correlations are also provided for print and digital assessment items, and standards-based reports can be generated by the *Online Assessment System* and the *ExamView Assessment Suite*.



<p><b>Kindergarten Critical Areas:</b></p> <ul style="list-style-type: none"> <li>• Numbers</li> <li>• Shapes</li> </ul>	<p><b>Grade 3 Critical Areas:</b></p> <ul style="list-style-type: none"> <li>• Multiplication and Division</li> <li>• Fractions</li> <li>• Rectangular Arrays and Area</li> <li>• Two-Dimensional Shapes</li> </ul>
<p><b>Grade 1 Critical Areas:</b></p> <ul style="list-style-type: none"> <li>• Addition and Subtraction</li> <li>• Place Value</li> <li>• Measurement</li> <li>• Geometric Shapes</li> </ul>	<p><b>Grade 4 Critical Areas:</b></p> <ul style="list-style-type: none"> <li>• Multi-Digit Multiplication and Division</li> <li>• Fractions</li> <li>• Geometric Figures</li> </ul>
<p><b>Grade 2 Critical Areas:</b></p> <ul style="list-style-type: none"> <li>• Base-Ten Notation</li> <li>• Addition and Subtraction</li> <li>• Measurement</li> <li>• Shapes</li> </ul>	<p><b>Grade 5 Critical Areas:</b></p> <ul style="list-style-type: none"> <li>• Fractions</li> <li>• Operations</li> <li>• Volume</li> </ul>

**Standards: Rigor - Application**

**Math Expressions** provides opportunities for students to independently apply mathematical concepts in real-world situations. The program’s print and digital components engage students in the rigor of the lessons and assessments, with problem-solving, critical thinking, and reasoning exercises. **Math Expressions** regularly provides students opportunities to apply their learning, particularly in real-world scenarios and through word problems. The *Home or School Activity* at the end of each lesson provides opportunities to apply understanding to a real-world problem or scenario, often in an engaging cross-curricular context.

Math practice in **Math Expressions** is rigorous, incorporating multi-step problem-solving, problems with more than one correct answer, and problems that require analysis and explanation. The central tenet of **Math Expressions** is the importance of communicating about problem analysis and reasoning. This is embodied in the *Math Talk Community* and *Math Talk* activities. These conversations take several forms (*Solve and Discuss*, *Small-Group Solve and Discuss*, *Student Pairs*, *Scenarios*, and *Small Groups*), and are found in each lesson.

**Math Expressions** provides opportunities for students to develop their problem-solving skills and gain experience with multi-step problems. Students work with problems that spark rigorous critical thinking with scenarios, like the *Puzzled Penguin* prompts that ask students to identify extra, missing, or hidden information and find solutions. These thinking activities promote deep analysis and productive struggle.



Real-world problem-solving, a **Math Expressions** hallmark, allows project-based learning to be an integrated part of the classroom, invites students to see the value of mathematics and mathematical thinking, and connects students and the mathematics to the world around them.

### **Standards: Rigor - Conceptual Understanding**

The **Math Expressions** program's Inquiry Learning Path Model develops and strengthens conceptual understanding by starting at the students' level and continually eliciting their thinking. Throughout the learning path, visual and linguistic supports are provided to move students rapidly to understanding. The path moves on to extended fluency practice and application, with continued emphases on understanding and explaining.

Every lesson in **Math Expressions** features *Math Talk*. There are various forms of *Math Talk* (e.g., Solve and Discuss whole-group and small-group discussions), and they serve several purposes. *Math Talks* support sense-making by having students share and discuss conceptual reasoning, as well as the multiple approaches to solving problems. In addition, each lesson closes with an open-ended comprehension/reasoning question, rather than a procedural question.

**Math Expressions** provides multiple means of representation of content, student engagement, and action and expression. Through multiple models, presented in print, digitally, and authentically, teachers and students can create multiple representations of the content. Many of the questions and problems in the program apply concepts to the real world, thus giving students a strong connection to the material.

With a vibrant print pieces, fun hands-on materials, and engaging, interactive digital components, **Math Expressions** makes math enjoyable and accessible to learners. The program combines the most powerful elements of standards-based instruction with the most effective methods of traditional approaches. The instruction addresses techniques of math drawing and *Math Talk* that empower students to construct secure and accurate mathematical understandings. Students are encouraged to use math drawings to represent and make sense of a situation or quantity and relate the strategy to a written numerical method and explain the reasoning used.



Students have opportunities for action and expression that include individual work, collaborative tasks, hands-on exercises, writing prompts and journal entries, the use of virtual tools, and more.

### **Standards: Rigor – Procedural Skill and Fluency**

The program supports students' development of procedural skill, starting with the use of concrete representations. Unique, powerful, and engaging math models are presented with embedded manipulatives such as *Math Mountain Cards*, *Secret Code Cards*, coins, and other important hands-on activity materials. Open space on the pages allow students to work in their consumable *Student Activity Book* (also available online) to keep manipulatives active, record their activity, reflect, and share their new learning. The online Student Edition allows for the *iTools* virtual manipulatives to be used without having to navigate off the page.

Multiple approaches to problem-solving are often provided, and students have opportunities to compare solution methods. *HMH Mega Math* engages students in a fun, personalized learning environment that delivers game-like, interactive instruction and application. *Ready-Made Math Centers* provide further procedural and fluency practice, as students work in pairs or small groups on unit-related challenges. At the end of every lesson, a *Remembering* page is provided to review previously-learned grade-level content. *Watch For!* and *Common Error Teaching Notes* throughout the Teacher Edition highlight where students might struggle and where teachers may need to highlight prior content, reinforce key concepts, or correct mathematical procedures within the current lesson.

Attention is given throughout the year to the individual standards that set an expectation for fluency. **Math Expressions** includes a *Path to Fluency Plan* with specific grade-level fluency activities and progress-tracking tools. At the beginning of each chapter, a *Quick Practice* enables teachers to review relevant grade-level content and continue the ongoing *Path to Fluency*. With the *Path to Fluency* teacher resources, teachers can then highlight particular areas where the class or individuals are struggling and make instructional decisions. *Practice Charts* and a *Daily Study Plan* help to keep students moving forward with their math goals. *Fluency Checks* in the *Assessment Guide* help teachers monitor progress in procedural fluency.



## C. Quality Questioning

Students actively engage in writing and speaking throughout every lesson in **Math Expressions**. Opportunities that encourage writing about math to learn, reflect on, and refine mathematical ideas, are also incorporated throughout the program. In every lesson, students are asked to engage in cognitive challenges like persevering in problem-solving, communicating mathematical ideas, giving counterexamples, drawing conclusions, and making conjectures, and communicate those verbally and in writing. In *Journal* entries and various lesson and assessment questions, students communicate their understanding, analysis, and reasoning in writing. *Watch For!* and *Common Error Teaching Notes* throughout the Teacher Edition highlight where students might struggle and where teachers may need to highlight prior content, reinforce key concepts, or correct mathematical procedures within the current lesson.

Woven throughout the lessons are thought-provoking question prompts that spark strategic, analytical, and critical thinking. The differentiation suggestions at point-of-instruction in the Teacher Edition help teachers deliver varied prompts to optimize challenge for different cognitive levels. Possible answers to all prompts are provided. The *Learning Community – Best Practices* professional development notes and other forms of instructional support are provided in the Teacher Edition so student collaboration is an organized, effective, and meaningful practice.

Every lesson in **Math Expressions** features *Math Talk* and collaborative learning opportunities. There are various forms of *Math Talk* (e.g., Solve and Discuss whole-group and small-group discussions), and they serve several purposes. *Math Talks* support sense-making by having students share and discuss conceptual reasoning, as well as the multiple approaches to solving problems. The instruction addresses techniques of *Math Talk* and math drawing that empower students to construct secure and accurate mathematical understandings. Students are encouraged to use math drawings to represent and make sense of a situation or quantity and relate the strategy to a written numerical method and explain the reasoning used. In addition, each lesson closes with an open-ended comprehension/reasoning question, rather than a procedural question.

*Math Talk* is a significant part of the collaborative classroom culture. The Teacher Edition also includes modeled dialogue for *Math Talk*. There are multiple benefits of *Math Talk*, including:





- Describing one's methods to another person can clarify one's own thinking as well as clarify the matter for others.
- Another person's approach can supply a new perspective, and frequent exposure to different approaches tends to engender flexible thinking.
- In the collaborative *Math Talk* classroom, students can ask for and receive help, and errors can be identified, discussed, and corrected.
- Student math drawings accompany early explanations in all domains, so that all students can understand and participate in the discussion.
- *Math Talk* permits teachers to assess students' understanding on an ongoing basis. It encourages students to develop their mathematical, academic, and general language skills.
- *Math Talk* enables students to become active helpers and questioners, creating student-to-student talk that stimulates engagement and community.

The most common *Math Talk* flexible participant structures are: Solve and Discuss (Solve, Explain, Question, and Justify) at the Board; Small-Group Version of Solve and Discuss; Student Pairs; Scenarios; Small Groups.

**Math Expressions** provides opportunities for students to develop their problem-solving skills and gain experience with multi-step problems. Students work with problems that spark rigorous critical thinking with scenarios, like the *Puzzled Penguin* prompts that ask students to identify extra, missing, or hidden information and find solutions. These thinking activities promote deep analysis and productive struggle.

Real-world problem-solving, a **Math Expressions** hallmark, allows project-based learning to be an integrated part of the classroom, invites students to see the value of mathematics and mathematical thinking, and connects students and the mathematics to the world around them.

The **Math Expressions** program features questions, activities, and tasks that generate higher-level thinking and problem-solving. Direct, explicit, systematic instruction and strong support build students' skills and confidence to actively engage in the productive struggle of problem-solving. **Math Expressions** creates an active learning environment that continuously engages students in critical and analytical thinking.



The **Math Expressions** program also actively engages students in unique and memorable project-based learning opportunities. *Performance Tasks* ask students to analyze a task, apply concepts, connect their learning, design solutions to real-world projects, and present their work to classmates or others. In the *Performance Tasks* and cross-curricular projects, students make connections across disciplines, and may pull from multiple sources to investigate, synthesize, develop solutions, and present their work. The **Math Expressions** program's tasks and projects require students to engage in critical thinking, analysis, and reasoning. The projects in **Math Expressions** mix fun and challenge with multiple steps that stimulate critical thinking skills.

## D. Writing

**Math Expressions** includes questions and activities which require students to reason abstractly and quantitatively, defend their findings, critique the reasoning of others, and express reasoning verbally and in writing. In **Math Expressions**, students use writing to communicate their problem-solving methods, observations, and reasoning during, collaborative activities, in Student Edition exercises, and in the *Journal* writing entries. Within each lesson, students are asked to write open-ended responses and compose their own math problems, thus exercising literacy skills in the writing strand. Reading and writing are also fully integrated in the various projects and cross-curricular tasks in **Math Expressions**.

## E. Speaking and Listening

In **Math Expressions**, students develop speaking and listening skills as they actively participate in discussions about mathematical processes as well as present mathematical concepts and their conclusions. This is accomplished through the program's communication and collaboration experiences in every lesson. Teacher notes and other forms of instructional support are provided in the Teacher Edition so student collaboration is an organized, effective, and meaningful practice. *Math Talk* is a significant part of the collaborative classroom culture. There are multiple benefits of *Math Talk*, including:

- Describing one's methods to another person can clarify one's own thinking as well as clarify the matter for others.
- Another person's approach can supply a new perspective, and frequent exposure to different approaches tends to engender flexible thinking.



- In the collaborative *Math Talk* classroom, students can ask for and receive help, and errors can be identified, discussed, and corrected.
- Student math drawings accompany early explanations in all domains, so that all students can understand and participate in the discussion.
- *Math Talk* permits teachers to assess students' understanding on an ongoing basis. It encourages students to develop their language skills, both in math and in everyday English.
- *Math Talk* enables students to become active helpers and questioners, creating student-to-student talk that stimulates engagement and community.

Additionally, throughout ***Math Expressions***, students are engaged in conversations about the *Essential Questions*, their problem-solving methods, their reasoning, and the reasoning of others. The Teacher Edition contains lesson-specific question prompts that spark critical and analytical thinking skills.

### III. Differentiation of instruction offers opportunities for all to participate

***Math Expressions*** is designed to accommodate a wide range of student ability levels and learning styles. A variety of lesson features and program resources incorporate strategies and opportunities for differentiated instruction. Differentiated instruction guidelines and pathways are referenced in every unit and lesson of ***Math Expressions***. Print and online materials support intervention/remediation, language learning, and enrichment.

#### ***Differentiation that Benefits All Learners:***

- Continuous support and strategies for differentiated instruction in the Teacher Edition
- Comprehension-boosting text-to-speech audio capability in online Student Edition
- *Differentiated Instruction Cards*
- *Math Expressions Literature Library Collection and Activity Guide*
- *Anno's Counting Book* (K only)
- Family engagement letters (English and Spanish)
- *MathBoards* and manipulatives kits
- *iTools* digital manipulatives



- Math writing prompts
- Collaborative activities
- Technology and interactive formats
- *HMH Mega Math*

#### ***Response to Intervention Students:***

- Audio text reader paired with text in the online Student Edition boosts comprehension and increases focus
- *Response to Intervention Teacher Edition* (print and digital) with teaching notes and instructional strategies
- Alternate instruction for Tier 1
- Prerequisite skills lessons for Tier 2
- Foundational skills lessons with scaffolded examples for Tier 3
- *Soar to Success Math*: engaging research-based digital intervention for Tiers 1, 2, and 3; diagnostic assessment; progress monitoring; reporting

#### ***English Language Learners:***

- The ***Math Expressions*** program is available in Spanish.
- ELL activities and strategies labeled as Emerging, Expanding, and Bridging
- Family engagement letters in English and Spanish
- Text-to-speech audio features paired with the text help comprehension and language acquisition
- Multilingual eGlossary includes an audio text reader in English and Spanish
- *HMH Mega Math*

#### ***Advanced Learners:***

- *Challenge* activities
- *Math Center Challenge Easel*
- *H.O.T.* and *Critical Thinking* questions

## **IV. Technology for Instructional Supports**



In addition to the print Teacher and Student Editions, resource books, and assessment books, **Math Expressions** includes high-quality resources and technology that boost students' engagement and learning and enhance teachers' efficiency and instruction. The **Math Expressions** digital pathway includes interactive Student and Teacher Editions and components that are user-friendly, engaging, and motivating. Planning and pacing resources map out a seamless integration of the print and technology components in the program.

### Technology Components

- **Math Expressions** Teacher Edition eBook is the online version of the print Teacher Edition
  - *Teacher Dashboard*: access, plan, assign, and share through this all-in-one hub
  - Planning charts, lesson plans, and instructional routines
  - Student pages with answers in color
  - *Interactive Whiteboard Lessons* for every **Math Expressions** lesson
  - *Professional Development Podcasts*
  - *iTools*, *Math Mountains*, resource pages (all printable)
- **Math Expressions** Student Edition eBook is a tech-enhanced version with write-in style in Flash and HTML5 formats.
  - Flash version is downloadable and can be used online and offline
  - Bookmarking and note-taking; full audio capabilities
  - Live links to lesson resources, interactive enhancements, and digital assessment
  - Embedded *iTools*, notebook, *Journal*, bookmarking, and highlighting
  - Multilingual eGlossary
- *iTools* virtual manipulatives deliver visuals that boost conceptual understanding and aid in problem-solving. The *iTools* also provide practice exercises.
  - Counters
  - *Math Mountains*
  - Base-Ten Blocks
  - Number Lines
  - Number Charts
  - Bar Models
  - Number Tiles
  - *Secret Code Cards*
  - Interactive Graphs
  - Fraction Bars
  - Algebra Tools
  - Probability Tools
  - Place-Value Simulations
  - Geometry Sketcher
  - Measurement Simulations



- **HMH Mega Math**
  - Exciting online leveled math adventures provide practice and application of skills and concepts.
  - *HMH Mega Math*'s game format is fun and motivating to learners.
- **Soar to Success Math**
  - Online intervention system linked to lessons in the Student Edition
  - *Diagnostic Assessment* identifies student gaps
  - Targeted Tier 1, Tier 2, and Tier 3 intervention lessons
  - Animated and voiced
- **Online Assessment System**
  - Editable, customizable assessments
  - Standards-based assessments and tests
  - Instant results, progress, and prescriptive reports
- **ExamView Assessment Suite**
  - Robust test banks, organized and aligned to the lessons and the Common Core State Standards
  - Create unlimited customized assessments and practice sets
  - Multiple question formats to reflect the language and rigor of standardized tests
  - Scoring options for assessments taken online
  - Reports can be run for a variety of criteria

The digital components of **Math Expressions** are compatible with desktops, laptops, and iOS and Android devices. **HMH** maintains an updated Product Technology Snapshot that provides technical specifications for **HMH** programs, platforms, and mobile applications. Please visit the Product Technology Snapshot at <https://customercare.hmhco.com/csrportalnew/pts/home/>.

## V. Assessment

**Math Expressions** includes a variety of diagnostic, formative, and summative assessments to



best allow students to demonstrate their knowledge and skills, produce answers and solutions, arguments and explanations, diagrams, mathematical models, and more.

The comprehension checks and assessments in **Math Expressions** provide teachers with information to drive their plans to reteach, correct, and reinforce critical concepts. *Prescriptive Roadmaps* for addressing results including common errors, re-teaching, and additional practice are provided for each assessment.

The **Math Expressions** program's assessments can be taken in print and online. The technology of the *ExamView Assessment Suite* increases the ease of planning, administering, scoring, and reporting. The *ExamView Assessment Suite* lets teachers create and customize assessments in various ways to fit their needs. With *ExamView Assessment Suite*, teachers are able to access pre-made assessments, create their own assessments from the robust test bank, and make edits and customizations to any assessment. Assessments may be customized in a number of ways, such as reducing the number of test items, making linguistic accommodations, or recasting test items so that they are more strongly connected to students' experiences and familiarities. Teachers are able to view the degree of difficulty/Depth of Knowledge level and the standard correlation for the items on pre-loaded tests and test bank items. Students can take the assessments online or in print, and online scoring is available. Teachers can run reports with a variety of filters for progress monitoring for classes and individuals.

**Math Expressions** assessments include:

- *Fluency Checks*
- *Quick Quiz*
- *Performance Tasks/Assessments* with rubrics
- *Unit Assessments*
- *Free-Response Test*
- *Multiple Choice Test*
- *End-of-Year Test*
- *Math Talk* and math drawings
- *Check Understanding*
- *Unit Review and Test*
- Journal entries



- Portfolio suggestions
- Progress data and reports from interactive technology programs
- Cross-curricular projects
- *Soar to Success Math* intervention progress monitoring
- *Online Assessment System*
- *ExamView Assessment Suite* (editable test item bank with scoring and reporting options)

The **Math Expressions** print and tech-based assessment systems that allow for various response types. The assessments include selected, constructed, and extended response items; self-assessments; and performance-based tasks. Assessments feature a variety of question types and response formats, including multiple choice, drag-and-drop, numeric, graphing, and open-response. Various Depth of Knowledge levels are included in the program's paper-based, digital, and performance-based assessments. Activities and projects give students opportunities to work collaboratively.

The program's assessments present authentic opportunities that evaluate students' knowledge of the standards-based content. The assessments directly align to the content, and modified and customizable options are included. *Performance Tasks* and projects require students to analyze tasks, apply concepts, connect their learning, design solutions, and present their work to classmates or others. In the *Performance Tasks* and cross-curricular projects, students make connections across disciplines, and may pull from multiple sources to investigate, synthesize, develop solutions, and present their work.

**Math Expressions** provides aligned rubrics, answer keys, sample solutions, and scoring guidelines that give sufficient guidance for interpreting student performance. Teacher materials include the student pages with answers in color.

The information in the Teacher Edition and the reports generated by the *ExamView Assessment Suite* and *Soar to Success Math* provide standards-based progress reports that identify strengths and weaknesses and assist teachers with instructional decision-making that is based on student responses and performance.





## VI. Parent Connections

**Math Expressions** encourages students and families to extend learning into the home and community. Many extension activities and cross-curricular tasks involve interaction with the community, and *Home Connections* letters included in the program—available in English and Spanish—invite caretakers to become a part of their child’s learning through fun activities. The family communication letters also provide an overview of the chapter’s content, as well as an invitation to view the *Math on the Spot* videos and other resources. The letters engage students’ family members and extend their real-world math experiences.

**HMH** recognizes the importance of family connections in students’ educational journey. **HMH** offers the *Making the School-Home Connection* workshop that helps spark lasting partnerships that boost students’ success. The 90-minute *Making the School-Home Connection* workshop for parents/guardians and educators strengthens the teamwork approach and enhances learning opportunities at home. The workshop builds a common language and understanding of students’ experiences with **Math Expressions**, initiates a system of open communication, and explores some of the best ways to support learning at home and on-the-go.

