

Math Inventory 3.0

Answers to Common Questions

When will *Math Inventory 3.0 Opt-In* be available?

Math Inventory 3.0 Opt-In will be available on August 27, 2018 and customers will have the option to move to the new version. **PLEASE NOTE:** Updating to the new version is completely optional, please notify your Account Executive if you would like to opt-in.

Will there be incremental updates, or will all enhancements be available at once?

There will be one major release targeted for August 27, 2018.

What are the key benefits of the *Math Inventory 3.0 Opt-In*?

Over the last year, our Learning Sciences and Assessment Research teams have identified several enhancements that improve upon the *Math Inventory*'s ability to assess student learning and academic growth across all grades.

More specifically the update includes the following:

- All assessment items will be specific to the grade level pool in which they are administered with the ability to go up one grade level and down two grade levels. In addition, the assessment will use more accurate item difficulty estimates when administering an above/below grade level item to a student. This will help alleviate the issue of serving overly difficult or overly easy items to students.
- The items at the beginning of the assessment are designed to specifically identify a student's general math ability, resulting in a more accurate starting point and appropriate items for students as they navigate through the assessment.
- We have continued to refine assessment design so that it constructs more accurate ability measures, placing students with greater precision, especially at the high and low ends of the achievement spectrum.
- Capped assessment length of 30 items will decrease the amount of time needed to complete the assessment, addressing concerns with longer administration times that can sometimes exceed one hour with up to 45-55 items administered per assessment.

How can we access the *Math Inventory 3.0* update?

Math Inventory web based subscription customers will have the option to update to the 3.0 version or stay with their current version. Locally hosted/perpetual customers will need to convert to web based subscription in order to access *Math Inventory 3.0*. If interested in moving to *Math Inventory 3.0*, please contact your Account Executive.

Will Spring 2018 administrations of *Math Inventory* be comparable to Fall 2018?

The release of *Math Inventory 3.0* Opt-In will result in a more accurate starting point for students at the beginning of the school year, with more consistency than previous versions, and more stability in the measurement of growth going forward especially on the high and low ends.

With the initial release of *Math Inventory 3.0* Opt-In, comparisons should only be made to future data and comparisons to prior data should be avoided. Best practices will be to use the Fall 2018 score and make comparisons to future scores. Scores that are inconsistent with the teacher's knowledge of a student's abilities and progress should always be closely examined.

HMH also strongly recommends using *Math Inventory* scores as one of multiple data points when making decisions about instruction, high stakes testing, and teacher evaluation.

Should we still target students in SAM prior to administration?

With *Math Inventory 3.0* Opt-In, the items at the beginning of the assessment are designed to specifically identify a student's general math ability and targeting a student's ability in SAM is no longer necessary.

How will this update impact *MATH 180* students?

Math Inventory will continue to serve districts' intervention identification needs by providing an accurate level of math understanding for *MATH 180* students in the first administration of the assessment. *Math Inventory 3.0* data in SAM Central will not be available for *MATH 180* until BTS 2019. However, *MATH 180* users can access their student's *Math Inventory 3.0* results using *Math Inventory 3.0* reports.

Can we still use custom performance bands?

Math Inventory 3.0 will allow customers who currently use custom performance bands to reset the bands.

Will these updates also be available for *Reading Inventory*?

These updates are only applicable to *Math Inventory*.

How does *Math Inventory* work?

- The first part of the *Math Inventory* assessment is the Math FACT SCREENER to identify students who may need work on math fact fluency.
 - Exception is that K-1 students see the Early Numeracy Screener in place of the Math Fact Screener.
- Students will take a PRACTICE TEST, listening to directions as they are read aloud. They will answer the 3 -5 practice questions one at a time.
- The *Math Inventory* assessment is then administered to the students. The assessment can be administered within a class period in approximately 20-30 minutes, and students need to answer 30 questions in order to complete the assessment. When completed the system automatically determines a score for reporting.
- The assessment is a computer adaptive assessment which automatically adjusts to the student's math level based on the student's correct and incorrect responses, until the right level of difficulty is determined for the student. With an adaptive assessment like *Math Inventory*, some students will encounter questions that may be more difficult, and should be encouraged as it means they are doing well. Students that are lingering on a certain question for too long should do their best to answer the question and then move on to the next question.

What are Computer-adaptive tests?

Computer-adaptive tests (CATs) are tests that continually adjust the difficulty of each student's test by choosing each question based on the student's previous response. If the student answers a question correctly, the difficulty of the next item will increase. If the student answers a question incorrectly, the difficulty of the next item will decrease. Adaptive tests generally provide a better-targeted assessment experience for students by filtering out the questions that are too difficult or too easy, providing a more precise selection of items appropriate for the student's ability level.

It is also important to note that students who are accustomed to achieving high success rates on tests can feel somewhat discouraged when presented with challenging test questions on adaptive tests like *Math Inventory*.

Educators should remind those students that when an adaptive test gives them a hard question, it is most likely because they are performing well. They should also encourage students to work hard throughout the entire test experience and not get stuck for too long on any one question.

Can we use *Math Inventory* for progress monitoring on a monthly or bi-weekly basis?

Math Inventory is designed as a universal screening and growth monitoring tool. Because it is an adaptive assessment, it is good at efficiently and affordably assessing an entire population of varying ability levels across a broad range of skills.

When a student is identified by *Math Inventory* as needing additional instructional services, it can be administered up to 3-5 times per year to examine growth, but if students need to be monitored at the standard-level on a monthly or weekly basis, then an additional tool should be utilized. These tools often have standards-based mini-assessments built-in that are designed for very frequent testing and provide normative data on a more granular level.

Using *Math Inventory* in conjunction with another tool of this type provides the district with the right assessment fit and the best price for all of these needs.

Having one tool to do both tasks, often results in too much testing for students and too much expense for districts, or inversely, too little data for students in need.

What types of reports does *Math Inventory* generate?

SAM is the management and reporting system that gathers usage and performance data for many HMH software programs, including the *Math Inventory*. Educators immediately have access to nine actionable reports. *Math Inventory* generates reports for progress monitoring, instructional planning, school-to-home communication, and program management.

Classroom- and student-level reports allow teachers to monitor progress, plan for instruction, set goals, and communicate with parents or caregivers. Scalable administrator reports provide performance data and usage information across classrooms and buildings.

Is *Math Inventory* a Diagnostic assessment?

Math Inventory is designed to be used diagnostically to report on which skills and concepts a student is ready to learn, but is not diagnostic by each strand of mathematics. *Math Inventory* utilizes the Quantile Framework to determine a single measure of student achievement across the 5 interwoven strands of mathematics as identified by the NCTM content standards.

Does *Math Inventory* provide expected grade level performance information?

Yes, *Math Inventory* provides proficient performance levels for each grade level. Students that fall in the Advanced Proficiency level have trajectory of being ready for Algebra by 8th grade.

What math skills are assessed by *Math Inventory*?

Math Inventory reports student growth in a single measure. The Quantile measure is a single unit that represents overall growth.

To support the measurement of skills and concepts from kindergarten through high school, items are organized around the following five strands:

- Numbers & Operations
- Algebraic Thinking, Patterns, and Proportional Reasoning
- Geometry, Measurement, and Data
- Statistics & Probability (Grades 6 and above only)
- Expressions & Equations, Algebra, and Functions (Grades 6 and above only)

In Grades K–5, emphasis is on:

- Numbers & Operations
- Algebraic Thinking, Patterns, and Proportional Reasoning
- Geometry, Measurement, and Data

Beginning in Grade 6, emphasis shifts to:

- Algebraic Thinking, Patterns, and Proportional Reasoning
- Expressions & Equations, Algebra, and Functions

Please Note: Math Inventory does not assess each individual skill.

How can we use *Math Inventory* Data for Instruction?

With Quantile measures for students and explicit instructional recommendations, *Math Inventory* provides clear information about the math skills and concepts students are ready to learn. It also identifies the foundational skills that teachers may need to rebuild. By providing a score directly on the Quantile Framework, *Math Inventory* becomes a tool for differentiation in the math classroom because it also provides a lesson-by-lesson Quantile alignment to math basal series and to math intervention programs.

Classroom and student reports allow teachers to monitor progress, plan for instruction, set goals, and communicate with parents or caregivers. Scalable administrator reports provide performance data and usage information across classrooms and buildings.

Students' Quantile measures indicate their readiness for instruction on skills and concepts within a range of 50 Quantiles above and below their Quantile measure. Students should be successful at independent practice with skills and concepts that are about 150 to 250 Quantiles below their Quantile measure.

If *Math Inventory* is a readiness measure (as opposed to an achievement measure) how can we report using the language of readiness?

Scores represent where students are in the framework and they can grow just like in a more traditional achievement test. However, instead of using language like mastered division of fractions the score in the Quantile framework now indicates they are able to learn division of fractions. You still need to exhibit some level of performance so the assumption about what you are ready to learn can be made. The students' scores are still markers to content based on some demonstrated performance but the label associated with that score/content pairing is now readiness to learn and not mastery.

How can we align our Math Text books to the Quantile Framework?

You can visit Quantiles.com - Find Your Textbook (<https://quantiles.com/tools/math-skills-database/>)