

MCA MATHEMATICS BENCHMARK REPORT "HOW TO" QUICK GUIDE

Since March 2020, educators and students experienced significant and profound changes in teaching and learning, as well as social and emotional well-being. It is important to keep this in mind when interpreting assessment results, as these changes are reflected in student scores but are difficult to account for accurately.

The MCA Benchmark Report is a guidance tool educators can use to learn about school- or district-level performance on each benchmark from the Minnesota Academic Standards. The Minnesota Academic Standards identify the knowledge and skills that all students are expected to learn in each content area by the end of a grade or grade band. These standards are divided into one or more benchmarks which provide details about what students are taught in that content area.

Benchmark performance is calculated by comparing students' **observed performance** on test content aligned to a benchmark to the **expected performance** of the "Meets" achievement level cut score for a benchmark at the school or district.

Report Considerations

Benchmark reports are created by grade and subject for Reading, Mathematics, and Science MCA.

The **Mathematics MCA** is an adaptive assessment at the "item" level, meaning test questions (items) are chosen based on the student's responses to the previous items.

- All tests meet the "blueprints" or requirements in the test specifications, which describe how the standards are assessed on the test and in what proportions. However, not all students see items for each benchmark, and other students may see more than one item for the same benchmark.
- Benchmarks not assessed on the MCA are noted on the report.

Due to COVID-19, there was very limited testing in 2020 and no benchmark reports were produced for 2020. Benchmark reports from 2019, 2021 and 2022 are available.



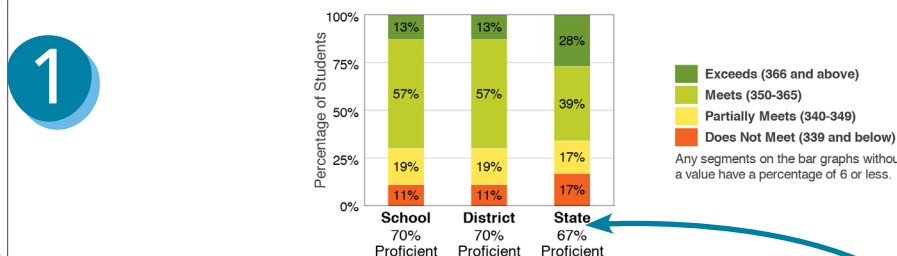
For more information about benchmark reports, refer to the [MCA Benchmark Report Interpretive Guide](#) or [Understanding the MCA Benchmark Report Video](#), available on PearsonAccess Next (PearsonAccess Next > Reporting Resources > Additional Reporting Resources).

Sections of the Benchmark Report

GRADE 3 MATHEMATICS PERFORMANCE

Number of grade 3 students in Mathematics with valid scores for your school: 9,999

The graph shows the percentage of students in each achievement level for your school, district, and the state for the grade 3 Mathematics MCA-III. The percent proficient under each bar in the graph is the percentage of students in the "Meets" and "Exceeds" achievement levels.



1. Overall performance, including:

The **number of students** with a valid, reportable score at the organization level for the grade and subject combination of the report.

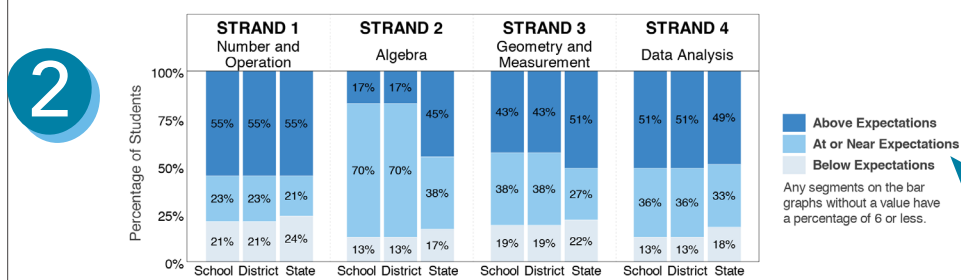
An **achievement level bar graph** at the school, district, and state level, with the percentage of students at each achievement level.

The **percent proficient**, shown under each bar graph, is the combined percent of students at the "Meets" and "Exceeds" achievement levels.

GRADE 3 MATHEMATICS PERFORMANCE BY STRAND

For the grade 3 Mathematics MCA-III, the strand performance levels are reported as: Below Expectations, At or Near Expectations, or Above Expectations. The strand performance level is determined by comparing the school performance to the state expectation at the "Meets" achievement level.

The graphs below show the percentage of students in each performance level for each strand calculated by aggregating the individual student strand performance levels at your school, at your district, and at the state level.



2. Strand performance, including:

Content area **strand names** and **performance level percentages** at the school, district, and state level.

Performance level categories include:

Below Expectations, At or Near Expectations, and Above Expectations.

Expectation is defined as the school's performance on each strand compared to the "Meets" performance level cut score.

GRADE 3 MATHEMATICS PERFORMANCE BY BENCHMARK

School performance on each benchmark is compared at the "Meets" achievement level score. Performance on each benchmark is calculated by comparing school performance on a benchmark to the expected performance on a benchmark that would be achieved at the "Meets" achievement level cut score.

- School performance on this benchmark is **less than** the "Meets" achievement level.
- School performance on this benchmark is **similar to** the "Meets" achievement level.
- School performance on this benchmark is **greater than** the "Meets" achievement level.
- less than 20 student responses on a benchmark

STRAND 1: NUMBER AND OPERATION

Compared to "Meets" Achievement Level	Benchmark
	Standard 3.1.1 Compare and represent whole numbers up to 100,000 with an emphasis on place value and equality.
	3.1.1.1 Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.
	3.1.1.2 Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones. For example: Writing 54,873 is a shorter way of writing the following sums: 5 ten thousands + 4 thousands + 8 hundreds + 7 tens + 3 ones 54 thousands + 8 hundreds + 7 tens + 3 ones.
	3.1.1.3 Find 10,000 more or 10,000 less than a given five-digit number. Find 1000 more or 1000 less than a given four- or five-digit number. Find 100 more or 100 less than a given four- or five-digit number.
	3.1.1.4 Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences. For example: 8726 rounded to the nearest 1000 is 9000, rounded to the nearest 100 is 8700, and rounded to the nearest 10 is 8730. Another example: 473 - 291 is between 400 - 300 and 500 - 200, or between 100 and 300.
	3.1.1.5 Compare and order whole numbers up to 100,000.

3. Benchmark performance description

4. **Three performance symbols** specific to the benchmark report used to represent school or district performance on each benchmark, including **less than**, **similar to**, or **greater than** the "Meets" achievement level.

An asterisk (*) indicates there were less than 20 student responses for that benchmark and results are not available.

5. Strand number and title.

6. **Minnesota Academic Standards code reference and description.**

7. **Benchmark performance, benchmark code reference, and description.**

For mathematics, the four-digit code (i.e., 3.1.1.3) lists, in order, the grade (3), strand (1), standard (1), and benchmark (3).

Note: Refer to the Minnesota Academic Standards for exact formatting of the math benchmarks and examples, as slight adjustments were made to fit the report.

Cautions When Interpreting the Benchmark Report

- For Mathematics MCA, the number of items for each benchmark will vary because the test is adaptive at the "item" level.
- The data displayed on the report are based on the student responses to the items from a particular benchmark that were administered to students in a school or district.
- Benchmark performance symbols **do not** correspond to overall achievement levels for Mathematics MCA (i.e., Does Not Meet, Partially Meets, Meets, or Exceeds the Standards), and the color/shape of each symbol does not reflect benchmark difficulty.

Frame any interpretation within the context of the school or district environment. Additional information about the curriculum, instructional practices, and data from other classroom assessments is critical to making appropriate inferences from the data in this report.

Using the Benchmark Report in Your Classroom, School, or District

The MCA Benchmark Reports are an additional resource educators can use to evaluate and compare performance on benchmarks at the school, district, and state levels on the current year's test. Teachers and district staff can use benchmark report data as a starting point for discussions about strengths and gaps in curriculum.

Guiding questions when reviewing and discussing benchmark reports:

- Are the students that completed the assessment representative of the total student population at your school or district?
- Where and how are specific benchmarks taught in a course's scope and sequence?
- What do you notice about the benchmark data? What surprises you?
- How does the data compare with what you saw in the classroom?
- What additional information do you have about student mastery of the benchmarks?
- What may be some reasons for the benchmarks that have symbols indicating performance above the "Meets" achievement levels?
- What may be some underlying causes for benchmarks below the "Meets" achievement level?
- Are there additional emerging themes in all the information?
- What are your next steps after reviewing your benchmark data?

Additional Benchmark Resources

View the [Minnesota Academic Standards](#) (MDE website > Districts, Schools and Educators > Teaching and Learning > Academic Standards (K-12))

View the [MCA test specifications](#) (MDE website > Districts, Schools and Educators > Teaching and Learning > Statewide Testing > Test Specifications)

View the [Frameworks for the Minnesota Science & Math Standards](#)

View the [Benchmark Achievement Level Descriptors](#) on the Testing 1, 2, 3 website. (Testing 1, 2, 3 site > Plan and Teach > Success Criteria)

View the [Testing 1, 2, 3](#) educator website (<https://testing123.education.mn.gov>)

View the [Minnesota Questions Tool](#) for released items from MCA test. (MDE Testing 1, 2, 3 > Assess > Minnesota Questions Tool)

View Appendix A: Benchmark Report Calculations Resource in the [Technical Manual for Minnesota's MCA and MTAS Assessments](#) (MDE website > Districts, Schools and Educators > Teaching and Learning > Statewide Testing > Technical Reports).