

MCA-III Science Benchmark Report — “How To” Quick Guide

The primary purpose of the MDE Benchmark Report is:

- To serve as an additional piece of data to help identify possible gaps in instructional content that educators may find relevant and important.

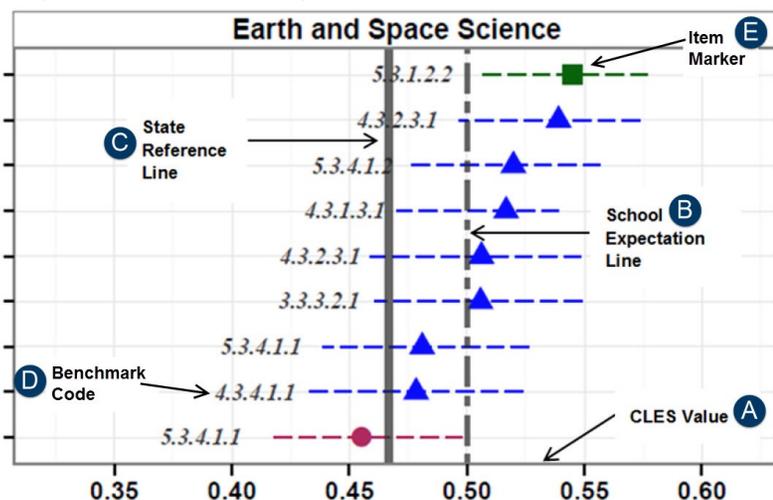
The MCA-III Benchmark Report is a tool that educators can use:

- To visualize school/district performance on each item (and their aligned benchmarks) relative to their overall performance on that year’s Science MCA-III scores.

How to Use the Benchmark Reports

- Use the [Test Specifications](#) — Account for test design and know the content specifications.
- Look for patterns in data — Are red benchmarks from the same [strand or standard](#)? What commonalities or patterns do you see and what might they indicate?
- Start asking questions — Does the data match your expectations based on what is happening on your classroom assessments? Are the red benchmarks included in the curriculum? Using your [Achievement Level Descriptors \(ALDs\)](#), does your instruction include the depth necessary for students to fully master the concept? Are there any benchmarks taught after students test?

Sample Science Benchmark Report



Significance:

- Below Expected School Performance (Red circle)
- Near Expected School Performance (Blue triangle)
- Above Expected School Performance (Green square)

A CLES (Common Language Effect Size) Value — A scale showing the difference between the school performance and the markers.

B School Expectation Line — Since this is a school/district centered report, the calculated expected performance is placed at 0.50.

C State Reference Line — If the school expectation (dashed) line is greater than (to the right of) the state reference (solid) line, it indicates that the school performed higher than the state. The school expectation line is always set at a CLES value of 0.50 and reports are adjusted accordingly.

D Benchmark Code — Code that identifies the benchmarks within each strand being tested, i.e. 5.3.4.1.1 (grade, strand, standard, benchmark), as seen in the Minnesota K-12 Academic Standards in Science.

E Item Marker — The average performance of students, relative to the school’s expected performance, on each item, is represented by a marker.

The length of the marker line indicates the confidence in calculating the exact location of the marker (shape), also known as the 95% confidence interval band. The shorter the line, the greater the confidence in the score due to a larger number of administered items from that benchmark.

Students performed *significantly above expected* based on the school’s overall expected performance on that item.

Students performed *significantly near expectation* based on the school’s overall expected performance on that item.

Students performed *significantly below expected* based on the school’s overall expected performance on that item.

CAUTIONS when Interpreting the Benchmark Report:

- The school and state line may be compared for average performance overall, but individual item comparisons may only be done with the school/district (dashed) line. Do **not** compare the items to the state (solid) line.
- The number of items on each report corresponds to the number of items on the assessment.
- There may be more than one item assessing a particular benchmark.
- The horizontal dashed line may vary in length. The shorter the line, the more precise we can be at indicating that data point for that particular item.
- The color, shape, and position of each item marker does **not** reflect the item difficulty or correspond to the achievement levels.

For more information, please refer to the content specific [Benchmark User Guide](#).