

Scale Scores and Mean Scale Scores



COLORADO
Department of Education

What is a Scale Score?

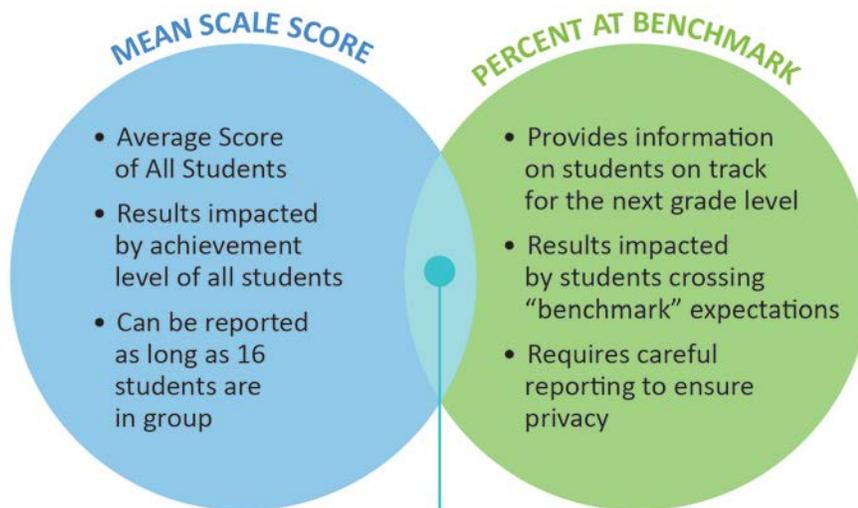
Students earn a scale score on each Colorado Measures of Academic Success assessment they take. For English language arts, the scale scores range between 650 and 850 and for science the range is 300 to 900. Performance levels will show whether a student's score is meeting expectations. (See sidebar). Here is an example of scale scores from an English language assessment:

650	700	725	750	790	850
Level 1	Level 2	Level 3	Level 4	Level 5	
May need additional support to be ready for the next grade level.			On track for next grade level.		

What is a Mean Scale Score?

A mean scale score is the average performance of a group of students on an assessment. Specifically, a mean scale score is calculated by adding all individual student scores and dividing by the number of total scores. It can also be referred to as an average.

What is the Difference between a Mean Scale Score and Percentage of Students at Benchmark?



What is performance level?

Performance levels help students, families, educators and school officials understand how students are performing against the content standards for college and career readiness.

The performance levels indicate what a typical student at each level should know based on their command of grade-level standards.

There are five performance levels:

- **Level 5:** Exceeded expectations
- **Level 4:** Met expectations
- **Level 3:** Approached expectations
- **Level 2:** Partially met expectations
- **Level 1:** Did not yet meet expectations

How do I Interpret the Score?

The mean scale score can best be understood by comparing it to the assessment performance bands. These bands identify if groups of students, on average, are meeting or not meeting grade-level expectations. Table 1 shows the scale scores that are associated with each performance level by assessment and grade.

For example, if the mean scale score for a group of students is 558 on the eighth-grade science assessment it could be said that on average, the students “Approached Expectations.” The mean scale score doesn’t tell you the percentage of students that fall within each of the performance bands.

Table 1. Assessment Scale Scores and Corresponding Performance Levels

CMAS Assessment	Performance Levels with Score Ranges				
	Level 1: Did not yet Meet Expectations	Level 2: Partially Met Expectations	Level 3: Approached Expectations	Level 4: Met Expectations	Level 5: Exceeded Expectations
English language arts and math (all grades)	650-699	700-724	725-749	750 to exceeds cut score	Variable based on assessment-850
Science (Grade 5)	--	300-545	546-649	650-770	771-900
Science (Grade 8)	--	300-555	556-651	652-784	785-900
Science (High School)	--	300-542	543-672	673-773	774-900

How are Mean Scale Scores Used?

Mean scale scores are used to measure achievement for school and district accountability. The scores can be calculated for students at the district, school, and group levels. Mean scale scores can be used as part of the Unified Improvement Planning process too. Remember, achievement on state assessments is combined with growth on assessments, as well as postsecondary measures for high schools and districts, to determine overall school and district performance.

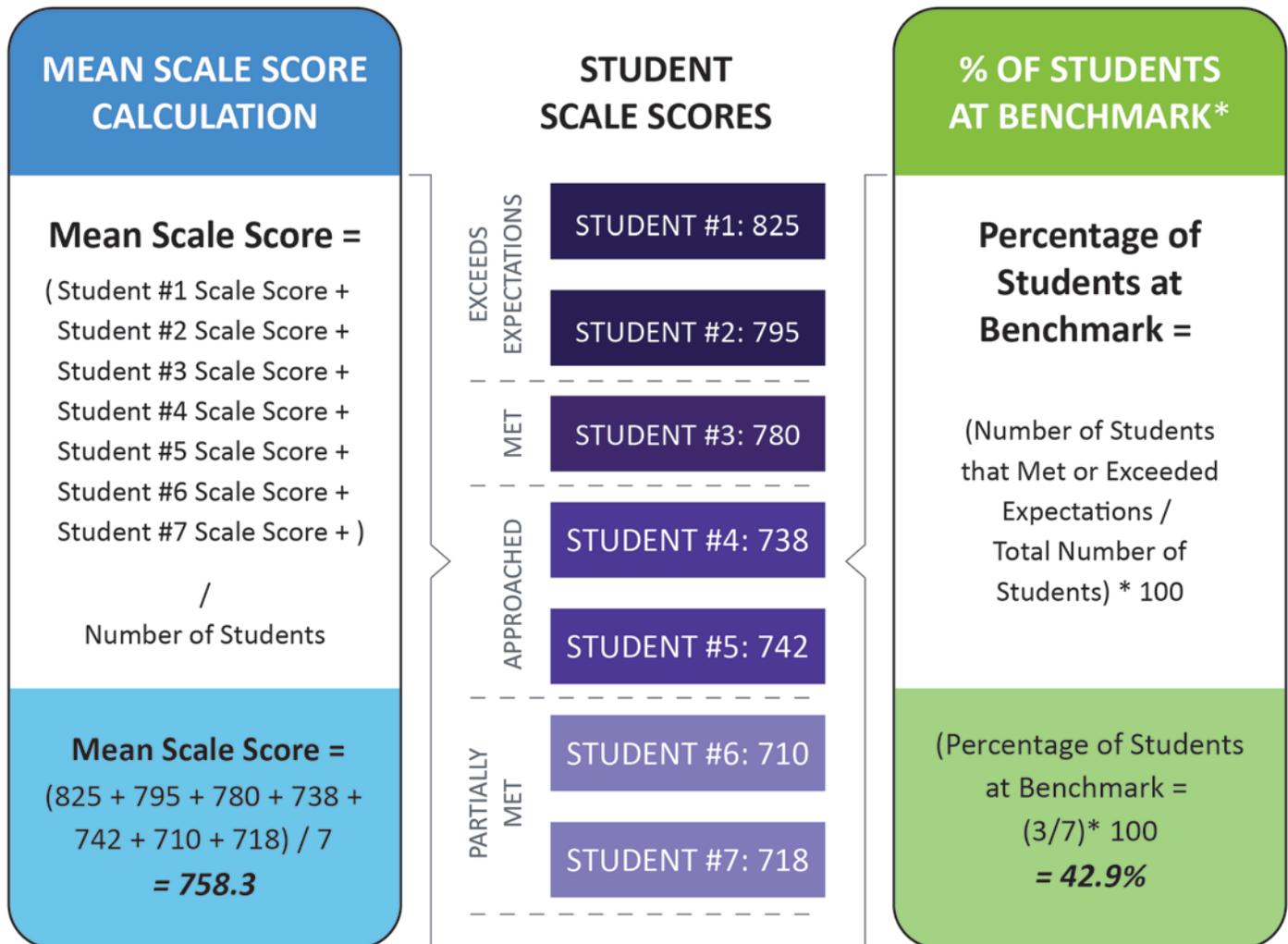
Why use Mean Scale Scores for Accountability?

With the mean scale score, all student results count. No matter the achievement level of students, all of their scores influence the mean score; and changes in scores for all students impact the mean scale score as well. In contrast, the percent of students meeting expectations is not impacted unless students move above or below the cut score for “Met Expectations.” Changes for students within Levels 1-3 or Level 5 will not impact the percentage of students meeting expectations, meaning there is not an incentive within the accountability system to focus on students who are scoring at the highest or lowest levels.

There is greater opportunity for transparency in reporting mean scale score results, because the smaller numbers associated with meeting expectations are more likely to require suppression to protect individual student privacy.

FIGURE 1:

Calculation of Mean Scale Sores and Percent of Students at Benchmark on the English language arts/math assessment.



WHERE CAN I LEARN MORE?

For additional information concerning the use of Mean Scale Scores for accountability and improvement, please contact Dan Jorgensen at Jorgensen_d@cde.state.co.us

Accountability fact sheets: <http://www.cde.state.co.us/communications/factsheetsandfaqs-accountability>