

Where Do Scales Scores Come From? Help Document

What is a scale score?

A scale score is created when a raw score, based on questions answered correctly, is translated into a different scale. The reason scale scores are needed is because they allow for comparisons on the same assessment (i.e., same test, grade, and subject) across multiple years. Because students take different items which vary in difficulty levels across years, the common metric of a scale score across years allows the scores that are reported to have the same interpretation. For the MCAs, the scale score is a translation of the ability level estimated based on the difficulty of items correctly answered onto a common scale for all students tested. For the MCAs, a scale score always begins with the grade of the assessment (G) followed by a score that can range from one to 99.

How are scale scores assigned?

A scale score of G40 always corresponds with the minimum score for the achievement level of partially meeting standards. A scale score of G50 always corresponds with the minimum score for the achievement level of meeting standards. Please refer to our [Understanding Scale Scores Document](#) for a visual representation of this information.

The minimum scale score which corresponds to the achievement level of exceeds the standards differs by grade and subject. This is because of the underlying ability scales for each grade and subject are independent of one another, but the same method is used for creating scale scores for all MCAs. For any given grade and subject, the underlying ability scale is translated onto the MCA score scale. This means that once two points have been selected on the ability scale and mapped onto the scale score, the relationship between the ability scale and scale score becomes known. For the MCA scales, the two points that are used to determine this translation are the ability levels that correspond to partially meets standards (G40) and meets standards (G50). The difference in ability that represents one scale score point for that grade and subject's scale is then determined by dividing up the difference in ability between partially meeting and meeting standards into equal parts for each scale score between G40 and G50.

The MCA scale scores were designed to have absolute maximum and minimum values so that no scale score could exceed G99 or fall below G01. If the translation of the underlying ability scale to the scale score results in a scale score that would fall outside of these limits, the absolute maximum or minimum scale score value is used. However, for some grades and subjects the actual observable highest score may be less than that grade's absolute maximum. Likewise, the observable lowest score for some grades and subjects may be greater than the

absolute minimum. For example, in grade five mathematics, all reported scale scores fall within a range of 515 to 586. The reason for this is based on the difference in ability that represents one scale score point. As described previously, the meaning of one scale score point in terms of ability varies by grade. Depending on how big an ability jump one scale score point represents, some grades require the entire G01 to G99 scale to cover the full range of ability measured by the test. For other grades, like grade five mathematics, a smaller scale score range can cover the full ability range and thus different scale maximums or minimums are used. For more information, please refer to our help document, [What Are Appropriate Uses of Scale Scores?](#)

Why is the scale score for Exceeds the Standards different by grade and subject?

It is important to note that the difference in ability representing one scale score point varies across grade and subjects. That is, a difference of one scale point in grade five does not imply the same ability difference as a difference of one scale point in grade eight. Because the partially meets and meets values were chosen as the constants to define the difference in ability level which corresponds with one scale score point, the exceeds the standards cut score varies across grades and subjects. The ability difference between the meets and exceeds standards are determined by the standard setting panel. Because scale scores are created by using the partially meets and meets cut scores, the exceeds cut score is determined by finding the scale score which corresponds to the difference in ability levels determined during standard setting.