

## Scoring the ASPECT-MC Tests

This document describes how to score the ASPECT tests and convert the raw score into a Rasch scale score. Because there are three different versions of the instrument that contain different test questions (items), a raw score on one version is not comparable to a raw score on another version. In other words, scoring 30 out of 35 on the advanced test is not equivalent to scoring 30 out of 35 on the basic test. Therefore, the raw score must be converted into a scale score before comparing it to scores from other versions or using the score with the resources on the website. Scale scores are comparable across versions of the test, so a scale score of 450 from the advanced test is equivalent to a scale score of 450 from the basic test.

The scale scores used in this project were obtained using Rasch Modeling (see the Technical Reports section for more information). The scale scores range from 200 to 800. Using Rasch allows us to obtain item difficulties and student scale scores that are on the same interval scale. The difficulties for the items in the ASPECT item bank can be found under the Performance tab on the item pages. When a student's scale score is equal to an item's difficulty, the student has a 50% chance of answering that item correctly. When the student's scale score is lower than the item's difficulty, the student has a less than 50% chance of answering correctly. When the student's scale score is greater than the item's difficulty, the student has a greater than 50% chance of answering correctly.

The following list of steps guides you through the scoring process.

- 1) Use the ASPECT Answer Keys under the How to Score section to obtain the number of test questions to which the student responded correctly. This is the student's raw score.
- 2) Open the Raw Score to Scale Score file under the How to Score section. Find the raw score under the raw score column for the version of the instrument the student took and note the corresponding scale score in the neighboring column. For example, a student whose raw score on the Basic test is 20 gets a scale score of 485.
- 3) Use the scale scores when viewing the idea maps and option probability curves in the How to Interpret Results section. On the idea maps, the scale scores are on the left side of the map and go from lowest scale score (less knowledgeable) on the bottom to highest scale score (more knowledgeable) on the top. On the option probability curves, the scale scores are on the x-axis.