

Progress measures and relationships between ability and attainment

GL Assessment's tests feature information such as indicators of future performance, measures of progress between test points and correlations of attainment with ability that make the testing process highly relevant and extremely useful for a range of practitioners. This short paper describes how these additional data are generated and, hopefully, provides some background information for commonly occurring inquiries.

Measuring progress

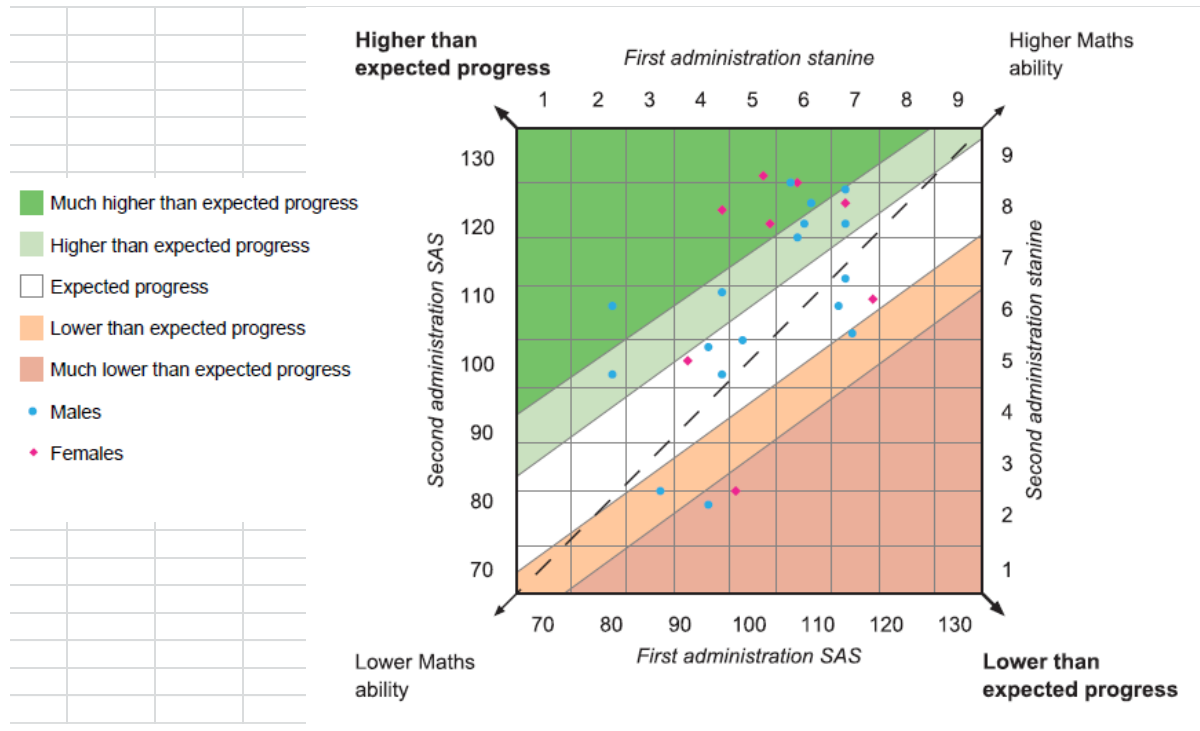
Several assessment reports include a measure of a student's progress from an initial test point to a subsequent test point. As with the calculation of Indicators, the process by which progress is measured and categorised is modelled on the statistical relationship between the two sets of scores and based on a large, nationally representative data set. These data are used to determine whether progress is as expected (that is the relationship between the scores is typical) or is above or below what is predicted by the national data. It is important to consider the overall score level as well as progress. A measure of progress based on national data is available for the following assessments:

- Progress Test Series (English, maths and science)
- New Group Reading Test
- Baseline/Baseline Progress

It must be emphasised that progress is defined by what was assessed in the first test and then re-assessed in the second test which is representative of the wider skills and knowledge a student should have acquired but still *relatively* narrow. The teacher's knowledge of the student in all aspects of development will be paramount the assessment data will offer additional insights. Test series like the *Progress Test Series* consist of a series of age-appropriate tests that are closely linked to the UK curricula at appropriate levels of difficulty to test most children in the target year group. The tests are designed to represent a continuum but are standardised separately: the overall standard age scores¹ from the first test are compared with the overall standard age scores from the second test and correlated with the national data.

¹ PTE and NGRT provide stanine scores for different part of the test but the overall SAS is used as the basis for measuring progress.

The following is an example report for a class that has taken PTM 6 in one year followed by PTM7 a year later.



Each of the dots represents a student in the class. For the national study a similar chart was created which showed results from a large, nationally representative data set of students. The analysis from the national study showed high correlations between year on year scores for PTE, PTM and PTS scores. The correlations were high at around 0.7 or above. The four shaded diagonal lines above shows the relationship between the PTM6 and PTM7 scores from the national study and define the five categories. The lines and categories have been created so as to represent the following national distribution.

Category	National distribution
Much lower than expected progress	10%
Lower than expected progress	15%
Expected progress	50%
Higher than expected progress	15%
Much higher than expected progress	10%

In the example above, students with a PTM 6 score of 90; around 10% nationally had PTM 7 scores less than 80 (i.e. in the pink shading) but around 10% nationally had higher PTM 7 scores of 110 or more (i.e. in the green shading). Around 50% of students had PTM scores between 87 and 100.

The table below shows the ranges of PTM 7 scores for PTM 6 score of 90.

Category	For PTM 6 score of 90
Much lower than expected attainment	PTM 7 scores <80
Lower than expected attainment	PTM 7 scores 80 to 86
Expected attainment	PTM 7 scores 87 to 100
Higher than expected attainment	PTM 7 scores 101 to 109
Much higher than expected attainment	PTM 7 scores > 109

The above is an illustration for the PTM6 and 7 test combination. The relationships vary by test combination.

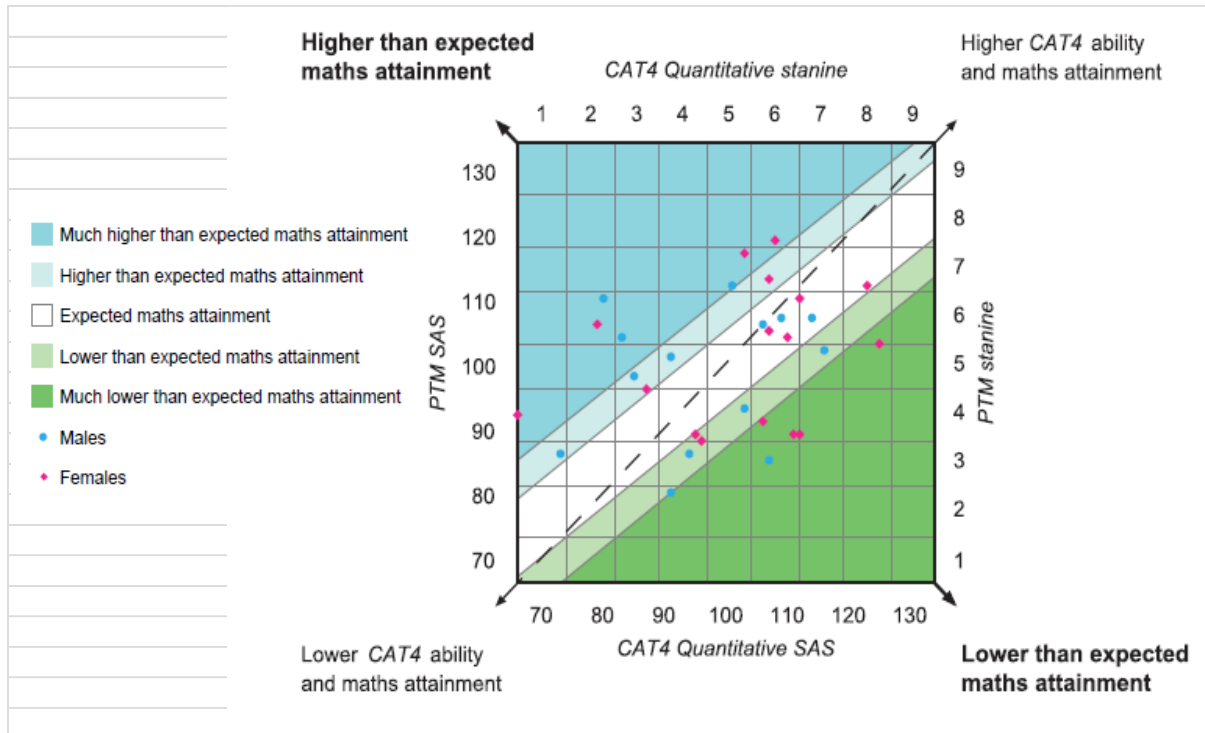
Measuring achievement in the context of ability

One of the many strengths of the *Cognitive Abilities Test* is the measure of an individual's potential it provides. The tests are as free from effects of prior learning as possible; in the fourth edition the subtests for sentence completion and equation building were removed from the Verbal and Quantitative batteries respectively as it was considered that these were too dependent on reading and maths knowledge.

This measure of potential is enhanced further by comparing *CAT4* scores with scores from the following:

- *Progress Test in Maths* where *CAT4* Quantitative Standard Age Score is correlated with the maths Standard Age Score to compare numerical reasoning and maths attainment;
- *Progress Test in English* where *CAT4* Verbal Standard Age Score is correlated with the overall English Standard Age Score to compare verbal reasoning with English attainment;
- *New Group Reading Test* where the *CAT4* Verbal Standard Age Score is correlated with the overall reading Standard Age Score to compare verbal reasoning with reading attainment.

The following is an example report a class that has taken CAT and one of the PTM tests.



Each of the dots represents a student in the class. For the national study a similar chart was created which showed results from based on a large, nationally representative data set of students. The analysis from the national study showed high correlations between CAT scores and PTE,PTM and PTS scores. The correlations were around 0.7 or above. The four shaded diagonal lines above shows the relationship between the CAT score and the PTM score from the national study and define the five categories. The lines and categories have been created so as to represent the following national distribution.

Category	National distribution
Much lower than expected attainment	10%
Lower than expected attainment	15%
Expected attainment	50%
Higher than expected attainment	15%
Much higher than expected attainment	10%

In the example above, students with a CAT Quantitative score of 90; around 10% nationally had PTM scores less than 80 (i.e. in the green shading) but around 10% nationally had higher PTM scores of 105 or more (i.e. in the blue shading). Around 50% of students had PTM scores between 86 and 98.

The table below shows the ranges of PTM scores for CAT Quantitative score of 90.

Category	For Quantitative score of 90
Much lower than expected attainment	PTM score <80
Lower than expected attainment	PTM score 80 to 85
Expected attainment	PTM score 86 to 98
Higher than expected attainment	PTM score 99 to 105
Much higher than expected attainment	PTM score > 105

The above is an illustration for one of the CAT and PTM tests. The relationships vary by CAT level and PTM test.

Technical information about these and other tests and assessments is updated regularly and can be found at gl-assessment.co.uk