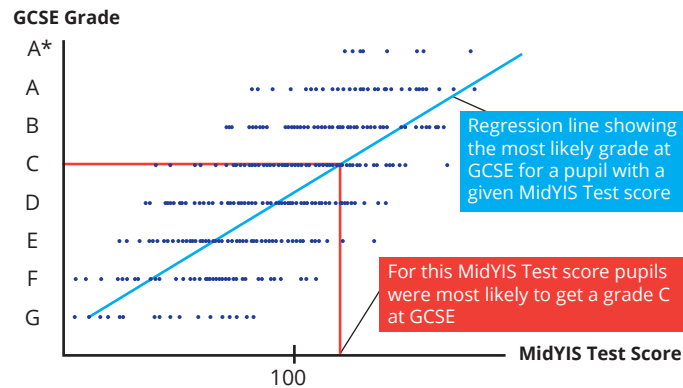


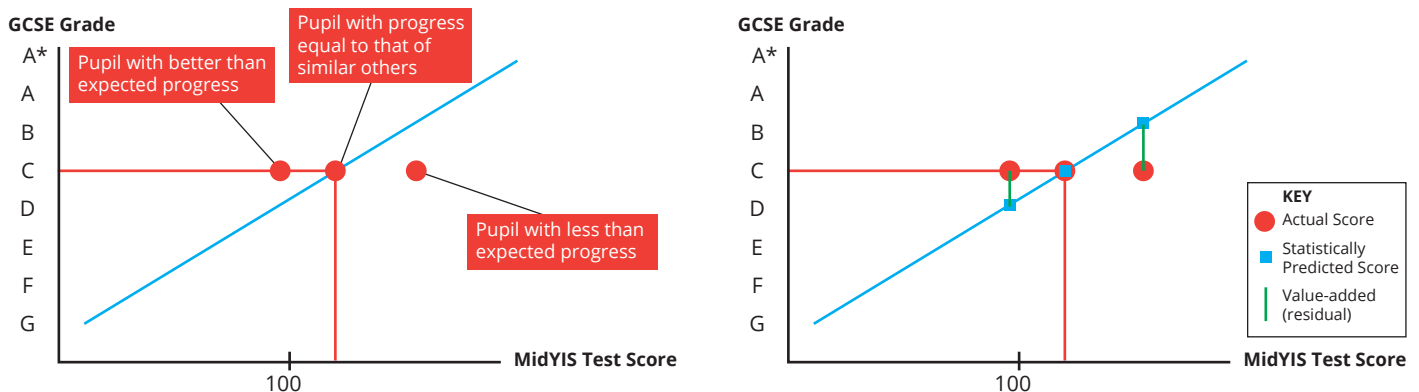
# The Concept of Value Added

(The same discussion can apply to calculating Value Added to Key Stage 3)

Imagine we have a nationally representative sample of pupils who have taken both a MidYIS Test and a GCSE examination. For each subject a graph is produced. We plot the MidYIS Test score against the achieved GCSE grade. The graph generally looks something like this:



As you can see, in general a pupil that did well in their MidYIS Test did well at GCSE. A simple statistical technique called linear regression will produce a straight line that can be thought of as passing through the middle of the cloud of data points. **This regression line indicates the average GCSE grade attained by a pupil for any given MidYIS Test score.** It can be used to give the statistically expected grade – often called the predicted grade. The vertical distance between a pupil's actual grade and the regression line is termed the residual. If a pupil has done better than expected and is above the regression line, a positive residual has been achieved, often called **positive Value Added**. A result below the regression line is a negative residual, or **negative Value Added**.



If the majority of pupils in a subject group attain positive Value Added, perhaps that subject is being well taught. If the majority attain negative Value Added, perhaps something is going wrong. "Perhaps" is the key word here: there are numerous reasons for fluctuations in Value Added results, some of them beyond a school's control. The results should be interpreted carefully: negative Value Added could be due to staff illness, for instance, or – in a subject taken by few pupils – to one disappointing result. Decisions should not be made on one year's Value Added results; trends should be looked at over time. The CEM software will assist in interpreting the data using statistical process control charts.

Note that making average or typical progress gives a Value Added score of zero – quite in line with what might be expected. The statistically correct term for Value Added is residual, but perhaps a more meaningful term would be relative progress.

Using Value Added allows fair comparisons to be made. Your pupils' Maths results, for example, are compared with other pupils' Maths results, so subject difficulty does not affect the outcome. Low ability pupils are compared with other low ability pupils, so a low ability intake is no disadvantage, while similarly a high ability intake is no advantage.