Cognitive Ability Tests from GL Assessment

The CAT generates a number of different scores that build a profile of the strengths of students problem solving and thinking skills. The data generated is based on the concept of a **Standard Age Score**. An average result for a child of a particular age is 100 with scores above and below this indicating above average or below average outcomes.

Each of these scores is placed into one of nine stanines, which allows us to see easily where a student's strength lie and where they might find tasks a touch more difficult. The diagram below shows how the SAS relates to the stanines and what this tells us about the relative strengths of students' outcomes in these areas.

	Below Average			Average		Above Average			
Stanine	1	2	3	4	5	6	7	8	9
Standard Age Score (SAS)	70	80	90	100	110	120	130			

The sorts of questions used to generate each score are shown below.

Verbal Reasoning Battery – thinking with words

Verbal Classification

Three words are presented which are similar in some way or ways. From a selection of five possible answers, the student must identify a fourth word with similar properties.

The answer is snow because rain, fog and sunshine are all types of weather and snow is also a type of weather.

Verbal Analogies

A pair of connected words is presented alongside a single word. From a selection of five possible answers, the student must select a word to complete the second pair in the same way.

The answer is window, because a carpet goes on a floor and a curtain hangs at a window.

Quantitative (or Numerical) Reasoning Battery – thinking with numbers

Number Analogies

Two pairs of related numbers are presented. From a selection of five possible answers, the student must select a number to complete a third pair.

The answer is 8. Here 1 add 1 makes 2, but that doesn't work for the second pair because 5 add 1 is 6, not 10. Instead, you have to multiply by 2 to get the second part of each pair, so 4 times 2 is 8.

Number Series

A sequence of numbers created by a transformation rule is presented. From a selection of five possible answers, the student must identify the rule and continue the sequence.

The answer is 15. There are two number patterns in this series. The first, third and fifth numbers go down by 1 at a time – 18, 17 then 16. The numbers in between them go up by two at a time – 5, 7 then 9. This means the next number must be 16 minus 1, giving 15.

Non-verbal Reasoning Battery – thinking with shapes

Figure Classification

Three designs are presented which are similar in some way or ways. From a selection of five possible answers, the student must identify a fourth design with similar properties.

The answer is E because it is the only answer choice that is a striped semi-circle, like the first three figures.
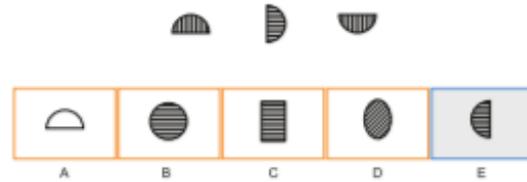
Figure Matrices

Designs are presented in a grid with one empty square and, from a selection of five possible answers, the student must identify the missing design.

The answer is C because in the top pair 'one arrow up' goes to 'two arrows up', so in the second pair 'one arrow down' must go to 'two arrows down'.
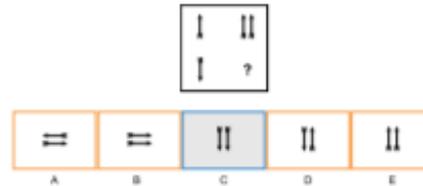
Spatial Ability Battery – thinking with shape and space

Figure Analysis

A series of diagrams shows a square being folded repeatedly, and then punched through with holes. From a selection of five possible answers, the student must identify how the paper will appear when unfolded.

The answer is D. The hole is punched through both layers of paper, so as it is unfolded the holes will be a mirror image of each other, with the crease being the mirror line.
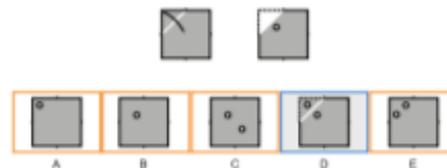
Figure Recognition

Several complex designs are presented along with a single target shape. From a selection of five possible answers, the student must identify the target shape within one of the complex designs.

The answer is E. It isn't A because that shows the target flipped over. It isn't B or C because they have shapes that are the wrong size.
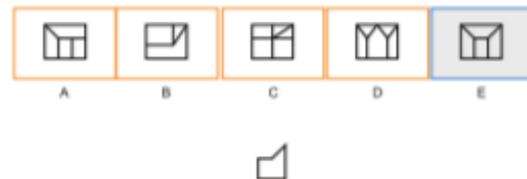
As you can see, the scores reflect a range of different skills and ways of approaching problem solving or of undertaking tasks. The relative strengths will be used by teachers when they are planning activities so that students are able to access learning effectively.