

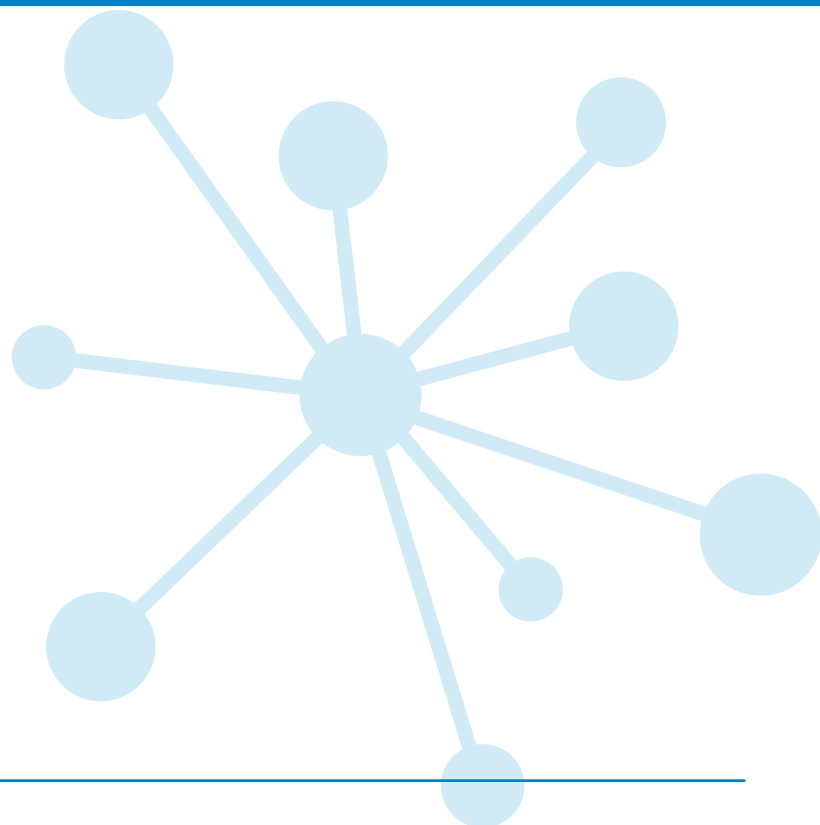
CAT4

Individual student report for teachers

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Individual student report for teachers

Name: Suhaaib Sharif			
School: GEMS - The Westminster School			
Group: 9B6			
Date of test: 02/10/2018	Level: F	Age: 13:02	Sex: Male

What is CAT4?

The *Cognitive Abilities Test (CAT)* is a suite of tests that assesses a student's reasoning (thinking) abilities in key areas that support educational development and academic attainment. *CAT4* is the fourth edition of the test and comprises the following sections or batteries which assess different aspects of ability:

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.

rain fog sunshine

winter	snow	weather	dark	night
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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.

carpet → floor : curtain →

window	shade	hang	drapes	cloth
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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.

[1 → 2] [5 → 10] [4 → ?]

5	7	8	9	10
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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.

18 5 17 7 16 9 →

11	12	13	14	15
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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.

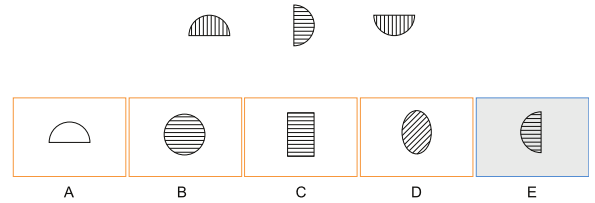
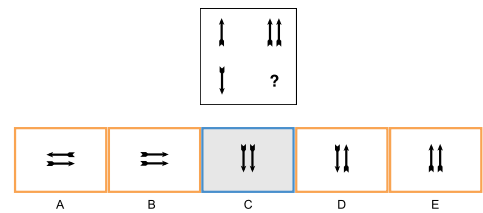


Figure Matrices

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.

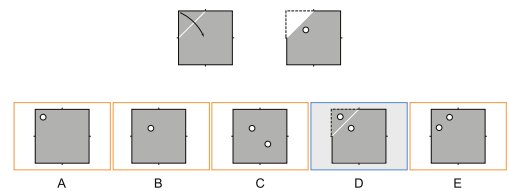
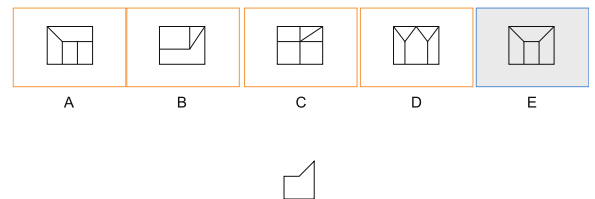


Figure Recognition

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.



Why use CAT4?

CAT4 is a comprehensive and objective test of a student's *developed* abilities – those that, in part, determine attainment and can be built upon and developed to improve outcomes. For example, verbal reasoning can be developed by supporting a student's reading, comprehension and vocabulary.

CAT4 has many uses, but the main focus of each individual report is to inform teachers, students and their parents and carers about an individual's underlying ability and how this can be recognised and built upon to ensure that a student achieves his or her potential.

CAT4 provides a benchmark and may be used very effectively as part of a review of a student's performance alongside other information including teacher assessment, data from Fischer Family Trust, Raise Online and school management data on aspects such as attendance, additional needs, EAL status, etc.

CAT4 provides indicators of attainment for KS2, KS3, GCSE and AS/A level which provide a starting point for target setting. Targets that challenge students can be set based on CAT4 results and other data, such as Fischer Family Trust which provide teacher assessment and results of attainment in English and maths to consider alongside the profile of a student's ability from CAT4. Consideration of both ability (CAT4) and attainment (SATs) and other factors (such as attendance) all play an important part in target setting and progress monitoring.

Relationship between scores

Description	Very Low		Below Average			Average			Above Average		Very High		
Stanine (ST)	1		2	3	4	5	6	7	8	9			
Standard Age Score (SAS)	70		80	90	100	110	120	130					
National Percentile Rank (NPR)	1	5	10	20	30	40	50	60	70	80	90	95	99

Example results

In **CAT4 battery** is the title given to each of the four pairs of tests which assess different aspects of ability.

The **number of questions attempted** can be important: a student may have worked very slowly but accurately and not finished the test and this will impact on his or her results.

The **Standard Age Score (SAS)** is the most important piece of information derived from CAT4. The SAS is based on the student's raw score which has been adjusted for age and placed on a scale that makes a comparison with a nationally representative sample of students of the same age across the UK. The average score is 100. The SAS is key to benchmarking and tracking progress and is the fairest way to compare the performance of different students within a year group or across year groups.

Performance on a test like CAT4 can be influenced by a number of factors and the **confidence band** is an indication of the range within which a student's score lies. The narrower the band the more reliable the score. This means that 90% confidence bands are a very high level estimate. The dot represents the student's SAS and the horizontal line represents the confidence band. The yellow shaded area shows the average score range.

The **Verbal Reasoning Battery** comprises two short tests: Verbal Classification and Verbal Analogies.

The **Quantitative Reasoning Battery** comprises two short tests: Number Analogies and Number Series.

The **Non-verbal Reasoning Battery** comprises two short tests: Figure Classification and Figure Matrices.

The **Spatial Ability Battery** comprises two short tests: Figure Analysis and Figure Recognition.

Battery	No. of questions attempted	SAS	NPR	ST	GR (/60)	SAS (with 90% confidence bands)														
						60	70	80	90	100	110	120	130	140						
Verbal	48/48	95	37	4	=39															
Quantitative	24/36	101	52	5	=24															
Non-verbal	48/48	115	84	7	=5															
Spatial	36/36	116	86	7	8															
Mean	-	107	-	-	-															

The scores for each of the four batteries are averaged to give the **mean** score.

The **National Percentile Rank (NPR)** relates to the SAS and indicates the percentage of students obtaining any particular score. NPR of 50 is average. NPR of 5 means that the student's score is within the lowest 5% of the national sample; NPR of 95 means that the student's score is within the highest 5% of the national sample.

The **Stanine (ST)** places the student's score on a scale of 1 (low) to 9 (high) and offers a broad overview of his or her performance.

The **Group Rank (GR)** shows how each student has performed in comparison to those in the defined group. The symbol = represents joint ranking with one or more other students.

Name: Suhaaib Sharif			
School: GEMS - The Westminster School			
Group: 9B6			
Date of test: 02/10/2018	Level: F	Age: 13:02	Sex: Male

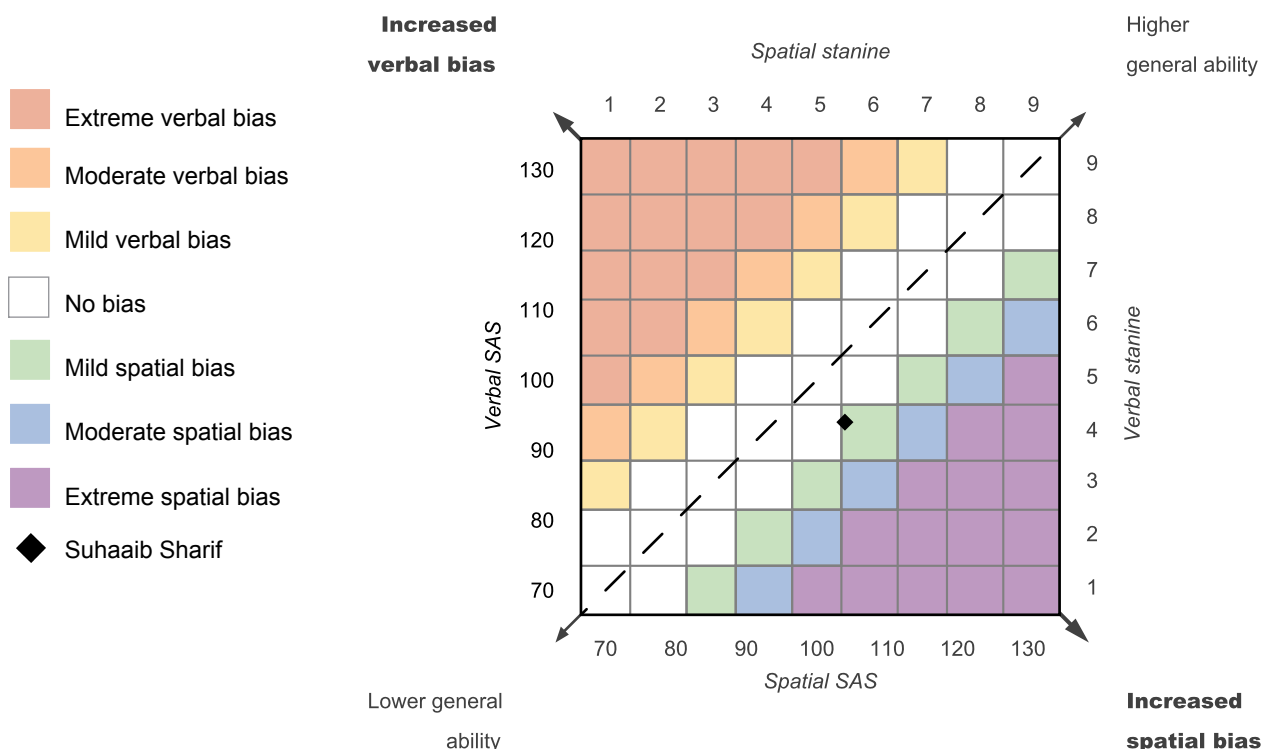
Scores

Battery	No. of questions attempted	SAS	NPR	ST	GR (/1)	SAS (with 90% confidence bands)	
						60	70 80 90 100 110 120 130 140
Verbal	48/48	94	34	4	1		-----●-----
Quantitative	31/36	121	92	8	1		-----●-----
Non-verbal	46/48	107	68	6	1		-----●-----
Spatial	34/36	104	60	6	1		-----●-----
Mean	-	107	-	-	-		-----●-----

Profile summary

The analysis of CAT4 scores allows all students to be assigned a profile; that is they are assigned to one of seven broad descriptions of their preferences for learning. The Verbal Reasoning and Spatial Ability Batteries form the basis of this analysis and the profiles are expressed as a mild, moderate or extreme bias for verbal or spatial learning or, where no bias is discernable (that is, when scores on both batteries are similar), as an even profile.

The black diamond shows Suhaaib's profile, which is indicated by the coloured band.



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Mild spatial bias

- This profile demonstrates a slight preference for spatial over verbal learning with verbal reasoning in the low average range and spatial ability in the high average range.
- Suhaaib's performance should be better when engaged in tasks that require visualisation and he will learn well when working with pictures, diagrams, 3D objects, mind maps and other tangible methods.
- His weaker verbal skills suggest he will perform at a low average level when learning through written texts, writing and discussion.
- Suhaaib is likely to prefer active learning methods such as modelling, demonstrating and simulations, though should also be able to engage with most written material.
- Suhaaib's attainment should be average or above in subjects that make the most of his spatial ability such as science, technology, design and geography, but he may find language-based subjects such as English, humanities, history and modern foreign languages more challenging unless teaching methods are adapted to suit his profile.

Implications for teaching and learning

- A lack of relative progress in verbal reasoning may be preventing Suhaaib from accessing key areas of the curriculum.
- A reading test that includes an assessment of comprehension may be helpful in establishing whether Suhaaib is a fluent reader with adequate understanding of what he reads.
- Opportunities for discussion and to develop presentational skills and support with specialist vocabulary could help improve verbal skills.
- Pairing Suhaaib with someone who is stronger in this area may support his progress. Paired work is likely to be more beneficial than group work.
- Suhaaib should be encouraged and helped to use his better spatial ability in subjects which depend on verbal skills. For example, use visual material (such as pictures or videos) to support text, create visual representations of events in history, use mind maps as an aid to remembering key events and characters in a text in English and annotate text to reinforce key facts and information in science.
- Suhaaib may find extended pieces of writing easier to do if he plans them using flow charts, by putting down ideas in note form and then deciding how to sequence these before starting the actual writing.

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Date of test: 02/10/2018	Level: F	Age: 13:02	Sex: Male

KS3 indicators

Results from CAT4 can give an indication of the level a student will reach at the end of the next Key Stage. A second level is suggested – this is the level a student could reach with additional effort and challenge. This information is helpful when you discuss with your students the targets they should be working towards.

Mean SAS: 107	Verbal SAS: 94	Quantitative SAS: 121	Non-verbal SAS: 107	Spatial SAS: 104
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	Probability of obtaining each level						Most likely level achieved	'If challenged' level achieved	<div style="display: flex; justify-content: space-between;"> ■ Probability of student obtaining level 5 or higher ■ Probability of student obtaining level 6 or higher </div>									
	3 or less	4	5	6	7	8			10%	20%	30%	40%	50%	60%	70%	80%	90%	
Maths	0%	0%	5%	41%	49%	4%	7c	7b										
Science	0%	2%	25%	57%	16%	-	6b	6a										
Art	1%	9%	39%	37%	14%	-	6c	6b										
D&T	0%	6%	38%	44%	12%	-	6c	6b										
Geography	0%	5%	33%	48%	14%	-	6c	6b										
History	1%	6%	39%	43%	12%	-	6c	6b										
ICT	1%	5%	44%	41%	10%	-	6c	6b										
MFL	4%	14%	43%	35%	5%	-	5a	6c										
Music	1%	10%	55%	27%	7%	-	5a	6c										
PE	1%	11%	46%	32%	9%	-	5a	6c										
English	5%	20%	61%	13%	1%	-	5b	5a										

Name: Suhaaib Sharif			
School: GEMS - The Westminster School			
Group: 9B6			
Date of test: 02/10/2018	Level: F	Age: 13:02	Sex: Male

GCSE indicators

Results from CAT4 can give an indication of the grade a student will reach. A second grade is suggested – this is the grade a student could reach with additional effort and challenge. This information is helpful when you discuss with your students the targets they should be working towards.

Mean SAS: 107	Verbal SAS: 94	Quantitative SAS: 121	Non-verbal SAS: 107	Spatial SAS: 104
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	Probability of obtaining each grade									Most likely grade achieved	'If challenged' grade achieved	Percentage of students obtaining grade 5+ (blue) and grade 7+ (orange)								
	U/1	2	3	4	5	6	7	8	9			10%	20%	30%	40%	50%	60%	70%	80%	90%
Maths	1%	1%	4%	18%	33%	22%	14%	6%	2%	5.8	6.7									
English Language	3%	7%	25%	25%	23%	12%	4%	1%	0%	4.5	5.4									
English Literature	5%	9%	19%	24%	22%	14%	5%	2%	1%	4.5	5.4									

	Probability of obtaining each grade										Most likely grade achieved	'If challenged' grade achieved	Probability of student obtaining grade C or higher (blue) and grade A or A* (orange)									
	U	G	F	E	D	C	B	A	A*	10%			20%	30%	40%	50%	60%	70%	80%	90%		
D&T – Textiles	0%	1%	1%	3%	9%	18%	33%	25%	10%	B	6	A	6									
Media Studies	0%	0%	1%	3%	9%	22%	34%	24%	6%	B	6	A	6									
Art & Design	0%	0%	1%	3%	8%	29%	33%	17%	8%	B/C	5	B	6									
Business Studies	0%	1%	2%	5%	14%	28%	32%	15%	3%	B/C	5	B	6									
D&T – Food	0%	1%	1%	4%	13%	26%	34%	15%	4%	B/C	5	B	6									
Drama	0%	1%	2%	4%	14%	28%	32%	16%	4%	B/C	5	B	6									
French	0%	0%	2%	5%	19%	32%	23%	13%	6%	B/C	5	B	6									
Geography	0%	1%	2%	5%	12%	28%	29%	18%	5%	B/C	5	B	6									
German	0%	0%	1%	5%	18%	38%	24%	10%	4%	B/C	5	B	6									
History	1%	1%	2%	6%	12%	23%	29%	19%	5%	B/C	5	B	6									
Home Economics	0%	0%	1%	3%	10%	24%	32%	26%	3%	B/C	5	B	6									

Name: Suhaaib Sharif			
School: GEMS - The Westminster School			
Group: 9B6			
Date of test: 02/10/2018	Level: F	Age: 13:02	Sex: Male

GCSE indicators (continued)

	Probability of obtaining each grade									Most likely grade achieved		'If challenged' grade achieved		Probability of student obtaining grade C or higher								
	U	G	F	E	D	C	B	A	A*					10%	20%	30%	40%	50%	60%	70%	80%	90%
Music	0%	1%	2%	5%	14%	27%	29%	17%	4%	B/C	5	B	6									
Physical Education	0%	0%	1%	5%	14%	31%	29%	15%	5%	B/C	5	B	6									
Religious Education	1%	1%	2%	5%	9%	20%	30%	24%	9%	B/C	5	B	6									
Science – Additional	0%	0%	1%	3%	12%	37%	34%	11%	1%	B/C	5	B	6									
Science – Biology	0%	0%	1%	3%	11%	35%	35%	13%	2%	B/C	5	B	6									
Science – Chemistry	0%	0%	1%	3%	11%	35%	34%	13%	3%	B/C	5	B	6									
Science – Core	0%	0%	1%	3%	12%	40%	35%	9%	1%	B/C	5	B	6									
Science – Physics	0%	0%	1%	2%	10%	35%	35%	13%	3%	B/C	5	B	6									
Sociology	0%	0%	2%	4%	10%	26%	35%	18%	5%	B/C	5	B	6									
Spanish	0%	1%	3%	7%	16%	27%	20%	15%	12%	B/C	5	B	6									
Statistics	0%	0%	1%	2%	8%	33%	37%	16%	2%	B/C	5	B	6									
D&T – Electronics	2%	3%	4%	8%	21%	26%	27%	7%	3%	C	4	B	5									
D&T – Graphics	1%	2%	3%	8%	19%	29%	24%	9%	4%	C	4	B	5									
D&T – Resistant materials	0%	1%	2%	6%	18%	33%	25%	12%	2%	C	4	B	5									
D&T – Systems control	1%	2%	4%	7%	16%	27%	27%	12%	4%	C	4	B	5									
Information Technology	2%	2%	3%	7%	14%	26%	29%	14%	3%	C	4	B	5									

Name: Suhaaib Sharif			
School: GEMS - The Westminster School			
Group: 9B6			
Date of test: 02/10/2018	Level: F	Age: 13:02	Sex: Male

AS level indicators

Results from CAT4 can give an indication of the grade a student will reach. A second grade is suggested – this is the grade a student could reach with additional effort and challenge. This information is helpful when you discuss with your students the targets they should be working towards.

Mean SAS: 107	Verbal SAS: 94	Quantitative SAS: 121	Non-verbal SAS: 107	Spatial SAS: 104
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	Probability of obtaining each grade					Most likely grade achieved	'If challenged' grade achieved	Probability of student obtaining grade C or higher									
	E	D	C	B	A			Probability of student obtaining grade A									
								10%	20%	30%	40%	50%	60%	70%	80%	90%	
Art & Design	13%	16%	29%	26%	17%	B/C	B										
Drama	10%	18%	33%	24%	14%	B/C	B										
Spanish	18%	16%	28%	27%	11%	C	B										
Business Studies	29%	22%	25%	18%	7%	C/D	C										
Economics	31%	17%	20%	17%	16%	C/D	C										
English Language	16%	29%	34%	14%	8%	C/D	C										
French	29%	18%	25%	14%	14%	C/D	C										
Geography	29%	19%	24%	15%	14%	C/D	C										
Media Studies	20%	27%	30%	16%	7%	C/D	C										
Sociology	25%	20%	24%	19%	12%	C/D	C										
Chemistry	36%	19%	20%	14%	10%	D	C										
Mathematics	38%	18%	18%	13%	12%	D	C										
Psychology	36%	20%	22%	14%	9%	D	C										
Religious Studies	33%	20%	24%	14%	10%	D	C										

Name: Suhaaib Sharif			
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Date of test: 02/10/2018	Level: F	Age: 13:02	Sex: Male

AS level indicators (Continued)

	Probability of obtaining each grade					Most likely grade achieved	'If challenged' grade achieved	Probability of student obtaining grade C or higher									
	E	D	C	B	A			Probability of student obtaining grade A									
								10%	20%	30%	40%	50%	60%	70%	80%	90%	
Accounting & Finance	55%	18%	14%	8%	5%	D/E	D										
Biology	38%	19%	22%	13%	7%	D/E	D										
Design & Technology	51%	22%	14%	9%	5%	D/E	D										
English Literature	27%	33%	24%	11%	4%	D/E	D										
Government & Politics	38%	23%	20%	13%	6%	D/E	D										
History	32%	26%	24%	13%	5%	D/E	D										
ICT & Computing	29%	29%	25%	12%	5%	D/E	D										
Law	44%	17%	19%	14%	6%	D/E	D										
Physical Education	40%	25%	18%	13%	4%	D/E	D										
Physics	42%	19%	15%	15%	9%	D/E	D										
Critical Thinking	91%	4%	3%	1%	1%	E	D										
General Studies	73%	14%	7%	4%	1%	E	D										

Name: Suhaaib Sharif			
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Date of test: 02/10/2018	Level: F	Age: 13:02	Sex: Male

A level indicators

Results from CAT4 can give an indication of the grade a student will reach. A second grade is suggested – this is the grade a student could reach with additional effort and challenge. This information is helpful when you discuss with your students the targets they should be working towards.

Mean SAS: 107	Verbal SAS: 94	Quantitative SAS: 121	Non-verbal SAS: 107	Spatial SAS: 104
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	Probability of obtaining each grade					Most likely grade achieved	'If challenged' grade achieved	Probability of student obtaining grade C or higher									
	D/E	C	B	A	A*			Probability of student obtaining grade A or A*									
								10%	20%	30%	40%	50%	60%	70%	80%	90%	
Art & Design	16%	23%	32%	16%	13%	B	A										
Biology	41%	26%	19%	10%	4%	B/C	B										
Business Studies	31%	31%	25%	10%	3%	B/C	B										
Chemistry	35%	25%	24%	12%	3%	B/C	B										
Classical Civilisation	15%	32%	36%	15%	2%	B/C	B										
Economics	23%	26%	29%	17%	5%	B/C	B										
French	17%	30%	28%	23%	3%	B/C	B										
Geography	23%	30%	29%	15%	3%	B/C	B										
Maths	31%	22%	24%	16%	7%	B/C	B										
Psychology	30%	29%	25%	11%	4%	B/C	B										
Religious Studies	34%	33%	22%	8%	2%	B/C	B										
Sociology	22%	27%	31%	13%	6%	B/C	B										
Design & Technology	45%	30%	18%	5%	3%	C	B										
Drama	39%	35%	19%	5%	1%	C	B										

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A level indicators (Continued)

	Probability of obtaining each grade					Most likely grade achieved	'If challenged' grade achieved	Probability of student obtaining grade C or higher									
	D/E	C	B	A	A*			Probability of student obtaining grade A or A*									
								10%	20%	30%	40%	50%	60%	70%	80%	90%	
Government & Politics	39%	29%	20%	9%	2%	C	B										
History	37%	35%	20%	6%	2%	C	B										
ICT & Computing	47%	25%	19%	7%	2%	C	B										
Media Studies	30%	41%	23%	5%	1%	C	B										
Music	37%	32%	22%	8%	1%	C	B										
Physical Education	43%	26%	20%	9%	2%	C	B										
English Language	46%	38%	14%	2%	0%	C/D	C										
English Literature	46%	35%	14%	4%	1%	C/D	C										
General Studies	78%	15%	6%	2%	1%	C/D	C										
Physics	53%	20%	16%	8%	3%	C/D	C										