



# Enhancing teaching and learning using effective assessment

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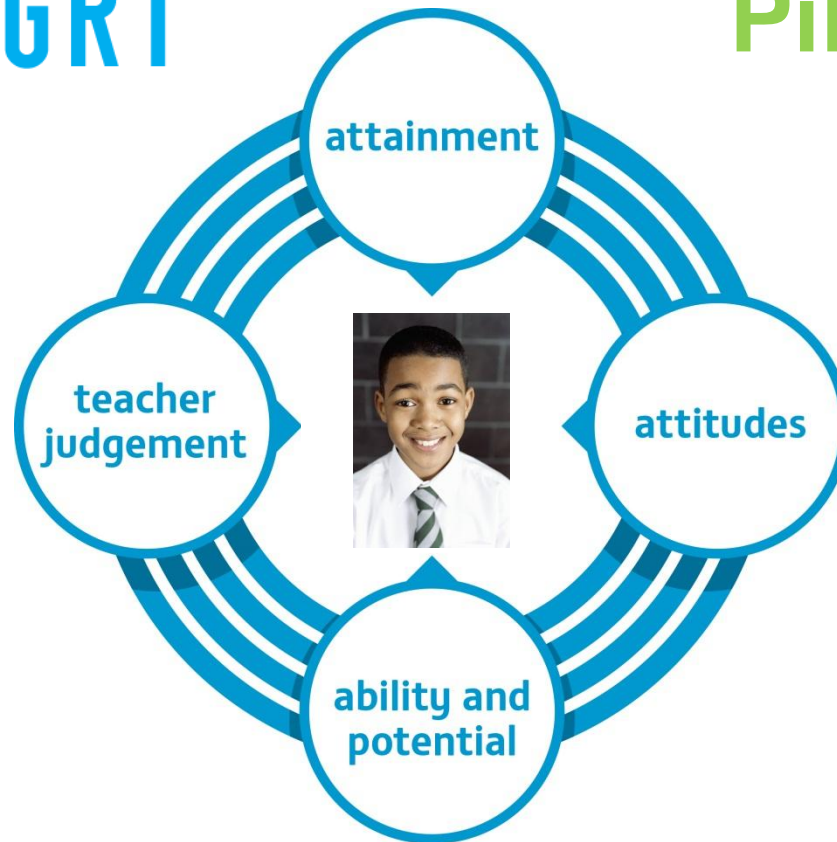
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CAT4



# Benefits of Cognitive Ability Testing

## Classroom Teachers

- Set targets
- Learner profile
- Personalised learning

## Middle Managers

- Cohort & Learner Analysis
- Targets and Value Added

## Senior Management & Stakeholders

- School performance (Value-Added)
- Resource / curriculum planning
- Raising school profile



## Verbal Reasoning Capability

Verbal classification  
Verbal analogies

## Quantitative Reasoning

Number Analogies  
Number Series

## Spatial Ability

Figure Analysis  
Figure Recognition

## Non-Verbal Reasoning

Figure Classification  
Figure Matrices



# Know your students..

## Scores for the group (by overall mean SAS)

Student name	Tutor group	Verbal			Quantitative			Non-verbal			Spatial			Overall	
		No. attempted (/48)	SAS	GR (/60)	No. attempted (/36)	SAS	GR (/60)	No. attempted (/48)	SAS	GR (/60)	No. attempted (/36)	SAS	GR (/60)	Mean SAS	GR (/60)
Sara Shafiq	EM	48	130	1	36	120	=3	48	119	3	36	126	=2	124	1
Natasha Aransola	EM	47	108	=14	31	120	=3	41	124	1	36	120	=4	118	2
Jenny Coyle	MCO	48	101	=25	36	118	5	48	115	=5	36	131	1	116	=3
Samera Kan	DK	48	113	9	34	116	6	43	115	=5	32	120	=4	116	=3
Lara Sandford	DK	48	97	36	33	111	=9	48	121	2	36	126	=2	114	=5
Deborah Weston	DK	48	123	=4	36	109	13	43	103	=25	36	120	=4	114	=5
Mia Shimizu	MCO	48	122	6	29	111	=9	48	112	=8	31	112	13	114	=5
Anthony Jameson	MCO	48	120	7	36	108	14	48	106	=21	36	118	7	113	8
Paisley McSeveney	MCO	48	112	=10	32	111	=9	46	112	=8	34	114	=9	112	9
Gabriel Bester	DK	48	125	2	20	98	=29	37	101	30	30	114	=9	110	=10
Petya Kan	EM	48	100	=28	35	123	=1	46	108	=16	36	108	=17	110	=10
Khan Kareena	DK	48	105	=19	34	114	7	43	105	=23	36	110	=14	109	12
Nick Watt	EM	48	124	3	24	99	=27	34	102	=27	26	108	=17	108	13
Zaynab Ashfaiq	MCO	48	95	=39	24	101	=24	48	115	=5	36	116	8	107	=14
Chloe Bullock	DK	48	102	24	36	123	=1	40	107	=18	36	95	=44	107	=14
Johanna Howles	DK	48	119	8	36	103	=17	48	94	=38	36	110	=14	107	=14
Liz Price	DK	47	108	=14	28	103	=17	40	109	=14	34	109	16	107	=14
Elise Kelly	MCO	48	112	=10	32	111	=9	47	99	=31	36	103	=29	106	=18
Susan McGregor	EM	48	108	=14	35	103	=17	41	106	=21	34	106	=22	106	=18
Joe Patel	DK	48	96	=37	18	93	=41	42	117	4	35	113	=11	105	20
Morrison Kirsty	MCO	48	108	=14	36	112	8	48	111	=10	36	84	=53	104	21
Neil Dawes	DK	47	110	12	18	93	=41	45	111	=10	23	98	=38	103	=22
Rob Reagan	DK	48	100	=28	26	101	=24	40	111	=10	36	98	=38	103	=22
Peter Adetunde	MCO	48	95	=39	32	98	=29	48	109	=14	36	106	=22	102	=24
Teodora Dunec	EM	48	100	=28	19	92	47	48	111	=10	36	104	=27	102	=24
Kunza Mohammad	MCO	48	103	23	26	98	=29	42	108	=16	36	100	=35	102	=24

The **Standard Age Score (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 **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.

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.

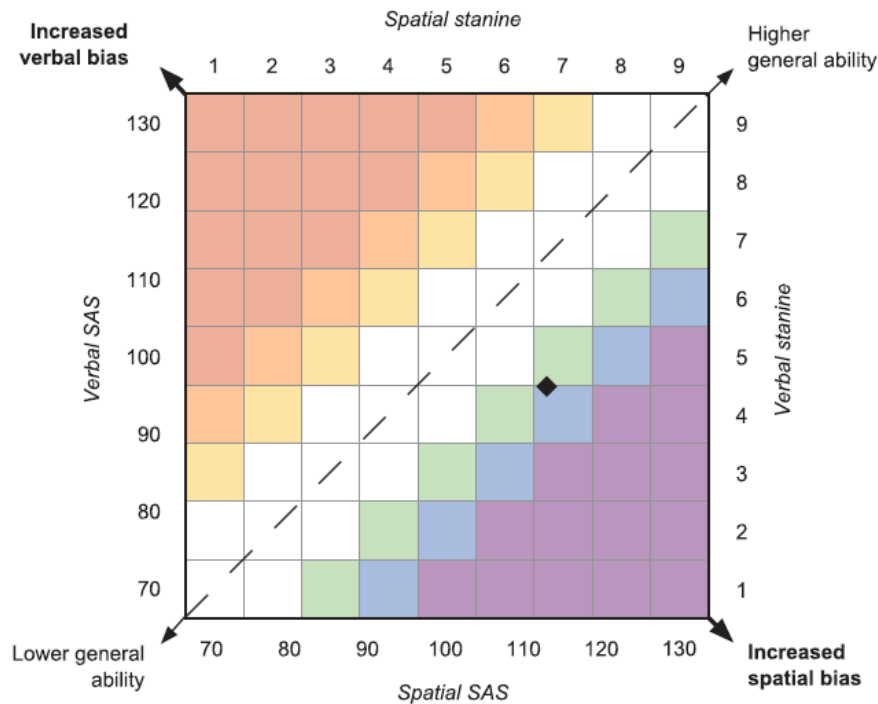


# Know your students..

	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*			Probability of student obtaining grade A or A*									
												10%	20%	30%	40%	50%	60%	70%	80%	90%	
Art & Design	0%	1%	2%	4%	11%	32%	29%	15%	6%	B/C	B										
D&T – Food	0%	1%	3%	5%	14%	29%	31%	14%	3%	B/C	B										
D&T – Textiles	0%	1%	1%	4%	11%	27%	33%	18%	6%	B/C	B										
Drama	0%	1%	2%	4%	13%	29%	31%	15%	4%	B/C	B										
Information Technology	1%	2%	2%	3%	13%	29%	31%	15%	4%	B/C	B										
Physical Education	0%	0%	1%	6%	18%	32%	27%	11%	4%	B/C	B										
Religious Education	1%	1%	3%	6%	13%	25%	27%	17%	5%	B/C	B										
Science – Biology	0%	0%	1%	2%	8%	38%	36%	13%	3%	B/C	B										
Science – Chemistry	0%	0%	1%	2%	9%	38%	34%	12%	3%	B/C	B										
Science – Physics	0%	0%	1%	2%	9%	39%	35%	12%	3%	B/C	B										
Business Studies	0%	1%	3%	9%	17%	33%	26%	9%	2%	C	B										
D&T – Graphics	1%	2%	4%	8%	17%	28%	25%	11%	4%	C	B										
D&T – Resistant materials	1%	1%	4%	9%	19%	33%	24%	8%	2%	C	B										
D&T – Systems control	0%	2%	3%	12%	21%	24%	25%	11%	3%	C	B										



# Know your student...



## Implications for teaching and learning:

- A lack of relative progress in verbal reasoning may be preventing Joe from accessing key areas of the curriculum.
- A test to establish a reading age is recommended to ascertain whether Joe is able to access the curriculum.
- Joe may benefit from some targeted additional support, with a focus on strategies to develop greater verbal ability.
- Paired work is likely to be more beneficial than group work.





# Student Engagement

## Summary

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Your profile of scores from *CAT4* suggests you may have a slight preference for learning by using pictures, diagrams and other visual ways of learning.


- You may prefer learning that uses visual clues. If so, make sure you use online resources, videos and texts with plenty of pictures that will help you remember key facts and information.
- Make notes using pictures and diagrams. You may find colour coding notes and texts useful.
- Make sure you understand each step of what you are learning as it is important that you learn at a pace that is right for you.
- You may find some of your schoolwork difficult especially in subjects where you have to read and write a lot.
- Always ask your teacher to explain anything that is not clear. If you don't understand the meaning of a key word in a lesson, do ask.



# Parental Engagement

Name: Joe Patel			
School: Test School			
Group: Year 7			
Date of test: 11/10/2013	Level: D	Age: 11:11	Sex: Male

## Scores

	Below average	Average	Above average
Verbal			
Quantitative			
Non-verbal			
Spatial			

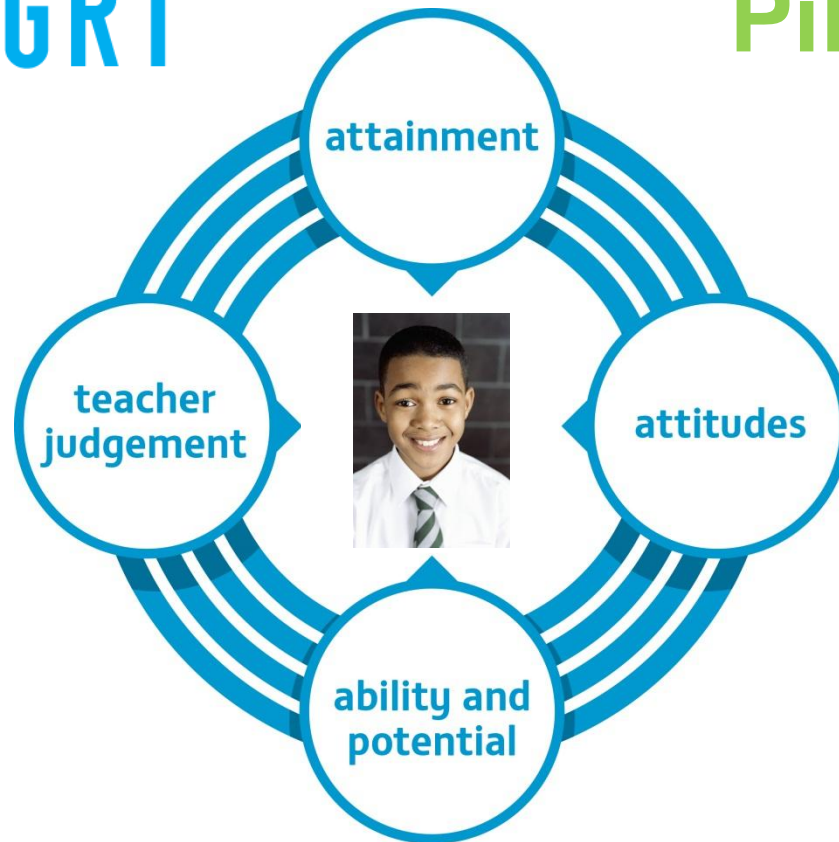
## Summary

Joe's profile of scores from *CAT4* shows he has a clear preference for learning that uses visual images – pictures, diagrams, moving images, etc. rather than learning by reading, writing and talking about topics.

- Joe should use online resources – videos and books with plenty of pictures to help remember key facts and information.
- Joe's good spatial skills can be used across the range of subjects and can help support relatively weaker verbal skills in subjects such as English and history.
- However, Joe may find some of his schoolwork difficult – particularly where a high level of reading and writing is required.
- Does Joe find reading difficult? If so, he may need some extra help at home with guidance from school.
- When you are helping with homework, make sure that Joe understands each step of the task before moving on. It is important that Joe learns at a pace that is right for him.
- Tell Joe to ask the teacher to explain anything that is not clear.



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## Analysis of Reading Age & SAS (The New Group Reading Test)

Student name	Age at test (yrs:mths)	SAS (90% confidence bands)	Overall Stanine	NPR	GR (/20)	Stanine	
						SC	PC
Joanna Brown	12:02	120	8	91	1	8	7
Bradley Cooper	11:02	118	7	89	2	6	8
Emma Dryden	12:03	117	7	87	3	6	8
Felicia Marquez	11:04	114	7	82	4	7	7
Sophie Turner	11:02	111	6	77	5	6	7
Francesa Thompson	12:01	110	6	74	=6	7	6
Samantha Greaves	11:08	110	6	74	=6	6	7
Will Davis	12:05	101	5	53	8	6	5
Dominic Lyons	11:07	99	5	48	9	4	5
Joe Patel	11:11	95	4	37	10	8	2
Charlotte Sims	11:08	93	4	32	11	5	3
Robert Stuart	11:07	91	4	28	12	5	3
Jenny Phipps	11:10	90	4	26	13	6	3
Polly Macintosh	12:00	88	3	22	14	4	3
James Welch	11:10	84	3	14	15	4	3
Penny King	11:11	81	2	11	16	4	2
Ryan Pritchard	12:01	69	1	2	=17	1	1
Owen Bryant	12:00	69	1	2	=17	1	-
John Shepherd	11:07	69	1	2	=17	1	-
George Price	12:01	69	1	2	=17	1	1



## Reading and comprehension progress

Student name	Age at test (yrs:mths)	SAS	SAS (90% confidence bands)		SAS difference	Progress category	Overall Stanine	NPR	Stanine					
			60	70					80	90	100	110	120	130
Ben Arrosco	11:08	112												
	12:08	114												
Charlotte Benn-Agogo	11:07	128												
	12:05	140												
Kate Beckett	11:06	115												
	12:05	125												
Connor Callaghan	11:01	129												
	12:00	127												
Joe Patel	11:05	85												
	12:05	95												
Elizabeth Childs	11:08	81												
	12:07	92												
James Curry	11:00	90												
	11:11	82												
Simone De Baltier	11:02	87												
	12:01	93												
Javier Esposito	10:10	75												
	11:09	80												
Andrea Exeter	11:01	125												
	12:00	118												
Joshua Furtado	11:09	89												
	12:09	113												
Ruth Galley	11:01	117												
	12:00	118												



# Progress in Maths

## Section A: Progress in Maths 11 - Student Listing

School: Test School

Group: Y7

No. Students 28

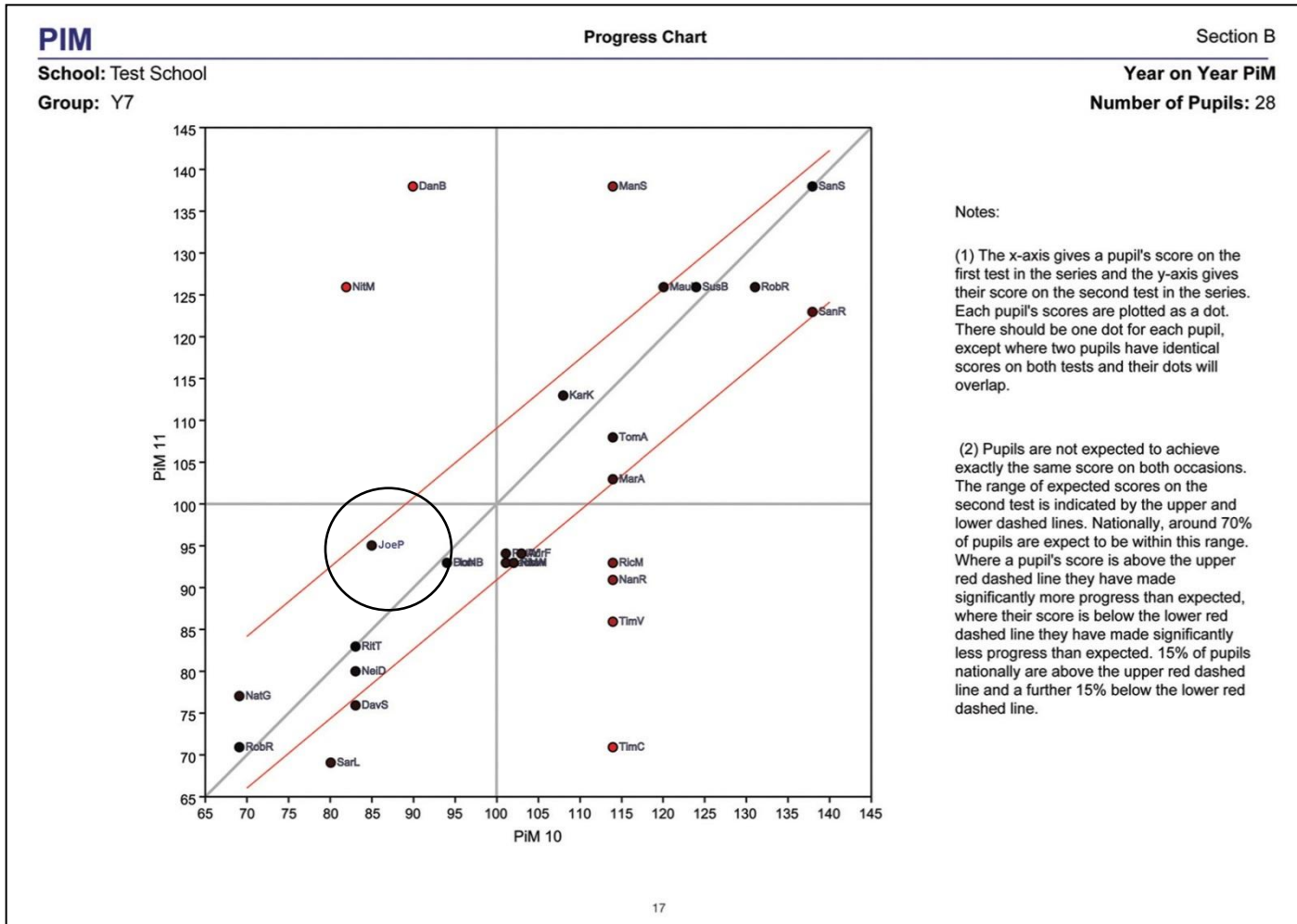
Student Results sorted by Standard Age Score														
Name of Student	Age at test (yrs.mnths)	Standard Age Score (90% Confidence Bands)	Stanine	Percentile Rank	Group Rank*	Raw Score	Percentage Correct - Curriculum Content Categories***							
							N	S	D	A				
Daniel Browne	11:06	138												
Sandeep Sharma	11:06	138												
Mandeep Singh	11:06	138												
Robert Robinson	11:06	126												
Nita Moss	11:07	126												
Maureen Kennedy	11:06	126												
Susan Bush	11:06	126												
Sanjay Roprai	11:06	123												
Kareena Khan	11:06	113												
Tom Albright	11:06	108												
Mary Aransiola	11:06	103												
Adrian Fowler	11:07	94												
Peter Watt	11:07	94												
Florence Nash	11:07	93												
Joe Patel	11:06	93												
Dominic Browne	11:07	93												
Jackie Murdie	11:07	93												
Nick Watt	11:07	93												
Rosaline Nash	11:07	93												
Nancy Roberts	11:06	91												
Tim Vincent	11:06	86												
Rita Tucker	11:06	83												
Neil Dawes	11:07	80												
Nathan Gill	11:07	77												
David Smith	11:07	76												
Tim Chung	11:06	71												
Rob Reagan	11:07	71												
Sarah Ling	11:06	69												

\*Group Rank based on Standard Age Score

\*\*\*Curriculum Content Categories: N = Number S = Shape, Space and Measures D = Data Handling A = Algebra



# Progress in Maths & Progress in English: Comparing Progress of Students



# New CAT4 combination report

## Scores for the group (by surname)

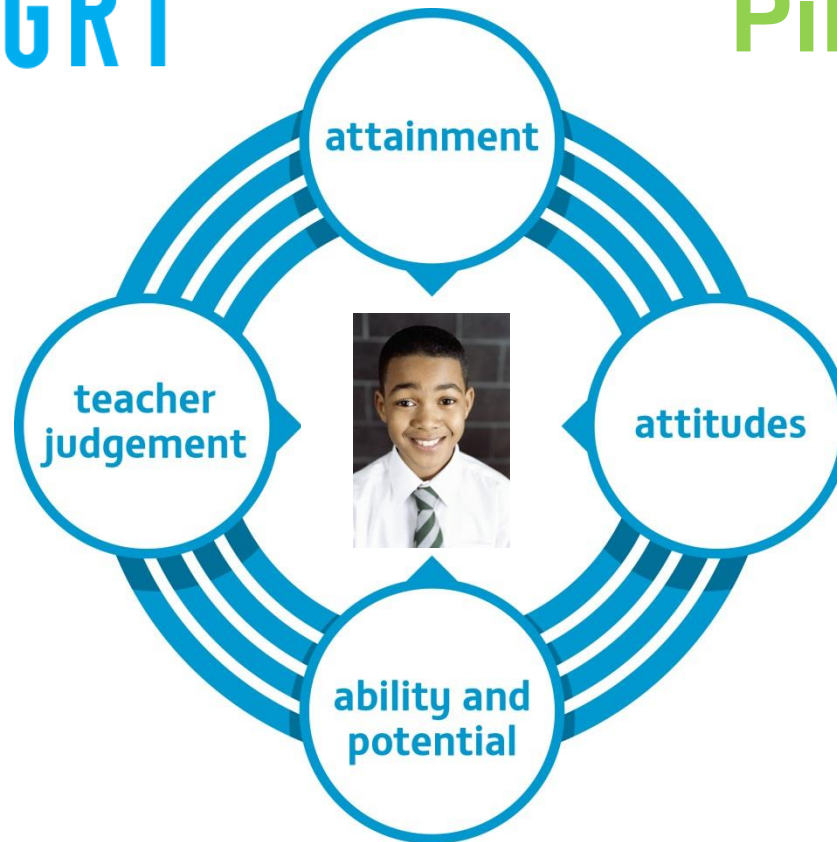
Student name	CAT4 Verbal SAS	PIE Overall SAS	English discrepancy category	CAT4 Quantitative SAS	PIM Overall SAS	Maths discrepancy category	CAT4 Non-verbal SAS	CAT4 Spatial SAS	CAT4 Mean SAS
Tom Albright	96	90	Expected	80	85	Expected	88	100	91
Louisa Cole	113	81	Much lower than expected	107	94	Lower than expected	98	97	104
Danielle Dixon	97	117	Much higher than expected	106	101	Expected	112	119	109
Nick Duffy	100	72	Much lower than expected	101	95	Expected	87	112	100
Billy Freeman	117	74	Much lower than expected	107	105	Expected	98	108	108
Martin Gibson	81	95	Much higher than expected	73	77	Expected	64	66	71
Nathan Gill	94	81	Lower than expected	91	78	Much lower than expected	83	81	87
Jahazabe Imran	122	96	Much lower than expected	112	105	Expected	101	100	109
Sophie Jobson	99	86	Lower than expected	103	90	Lower than expected	88	116	102
Natasha Jones	109	105	Expected	108	133	Much higher than expected	101	105	106
Elise Kelly	105	91	Lower than expected	79	103	Much higher than expected	75	86	86
Sarah Ling	106	82	Much lower than expected	110	102	Expected	109	105	108
Daniel Lions	123	93	Much lower than expected	106	97	Expected	100	109	110
Ben Lynch	101	87	Lower than expected	103	90	Lower than expected	76	86	92
Yordan Madzhirov	108	93	Lower than expected	83	112	Much higher than expected	92	-	94
Charlie Mingle	93	84	Lower than expected	91	103	Much higher than expected	97	107	97
Adrian Mole	-	86	-	94	69	Much lower than expected	114	106	105
Sue Moore	109	102	Expected	95	127	Much higher than expected	92	107	101
Joshua Moses	130	85	Much lower than expected	116	93	Much lower than expected	106	117	117
Tom Murdie	107	111	Higher than expected	109	109	Expected	95	101	103
Florence Nash	110	83	Much lower than expected	107	90	Lower than expected	106	112	109
Pauline Nurse	94	87	Expected	96	85	Lower than expected	102	100	98
Dora Okai	103	77	Much lower than expected	112	95	Lower than expected	109	108	108
Joe Patel	96	95	Expected	93	93	Expected	117	113	105

The **Standard Age Score (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.





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## The 9 Attitudinal Measures

### Factor

1: Feelings about school

2: Perceived learning capability

3: Self regard

4: Preparedness for Learning

5: Attitudes for teachers

6: General work ethic

7: Confidence in learning

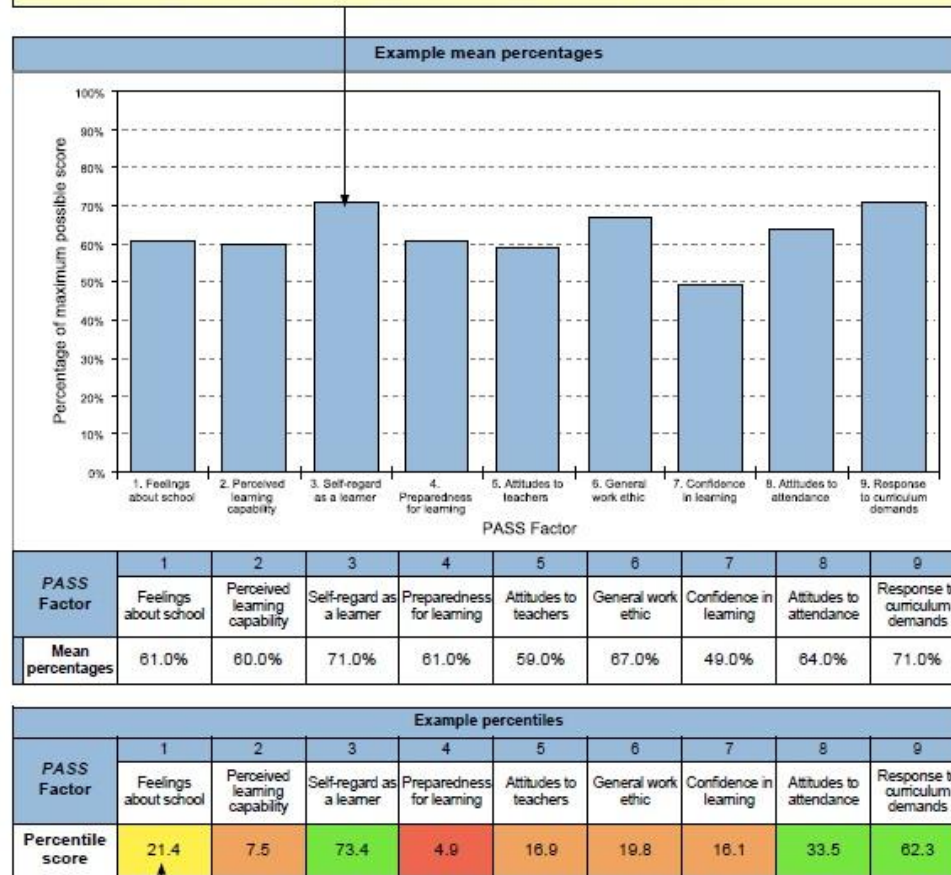
8: Attitudes to attendance

9: Response to curriculum demands



## Example analysis

The bars on the chart represent the school's non-standardised scores. This is a score, expressed as a percentage, relative to the maximally positive response to the questions comprising a factor. For example, if boys within a school were to score a maximum of 5 out of 10 for self-regard, then their non-standardised score would be 50%. The score enables comparison across time within a school.



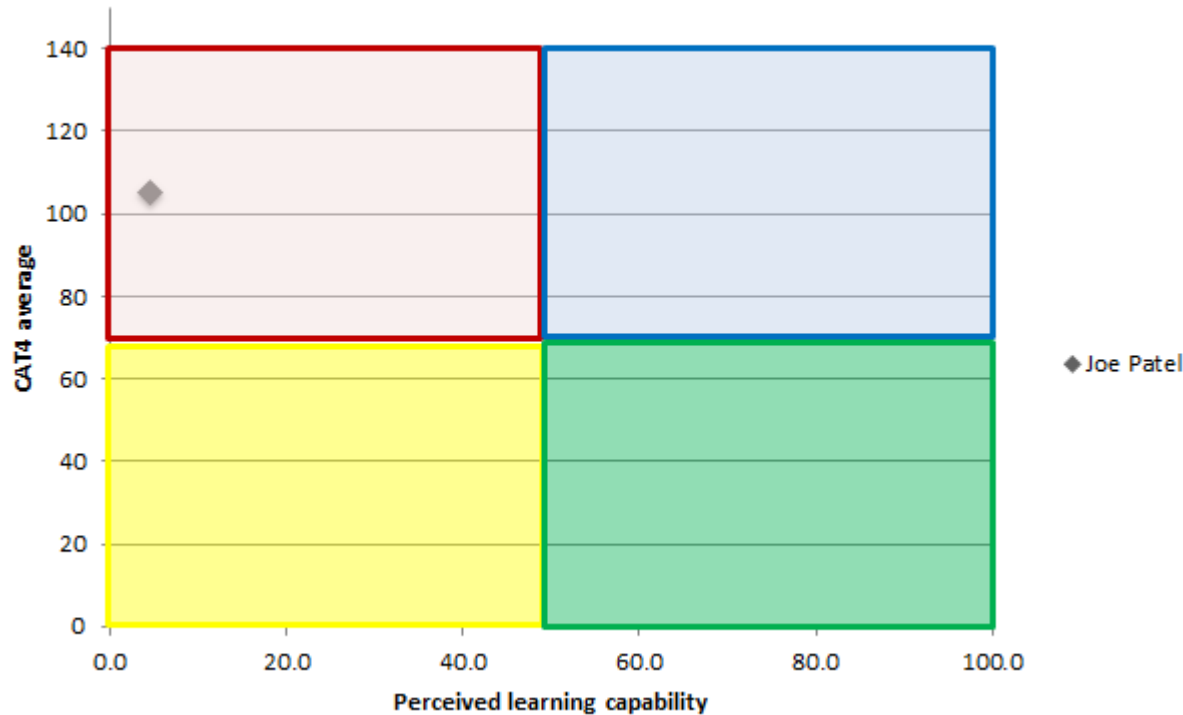
School: Test School		
Group: Y7		
Survey period: 20/03/2014 – 20/04/2014	Level: PASS 3	No. of students: 150

## Individual profiles

Student name	Tutor group	Year	1	2	3	4	5	6	7	8	9
			Feelings about school	Perceived learning capability	Self-regard as a learner	Preparedness for learning	Attitudes to teachers	General work ethic	Confidence in learning	Attitudes to attendance	Response to curriculum demands
Natasha Aransola	Miss Goode	7	100.0	85.1	22.5	100.0	100.0	89.0	87.0	94.5	41.4
Sean Erwin	Miss Goode	7	7.0	62.8	93.4	13.2	22.4	50.3	58.7	12.7	93.8
Kunza Mohammad	Miss Goode	7	37.2	90.4	70.3	35.4	22.4	50.3	50.4	38.8	85.8
Chelsea Patterson	Miss Goode	7	2.3	15.8	87.8	3.4	22.4	50.3	34.1	38.8	93.8
Debora Quinn	Miss Goode	7	28.1	11.7	9.2	6.7	22.4	0.9	87.0	12.7	17.2
Sanjay Roprai	Miss Goode	7	12.3	27.5	80.3	4.8	1.8	0.3	81.4	18.9	41.4
Adrian Watt	Miss Goode	7	100.0	90.4	93.4	90.9	89.4	89.0	96.5	94.5	100.0
Andrea Chaudhry	Mr Clarke	7	3.0	15.8	32.2	1.9	6.8	28.6	42.0	8.1	27.6
Joshua Dunlop	Mr Clarke	7	21.4	78.7	44.6	63.7	58.2	72.6	58.7	38.8	58.3
Leah Dunseath	Mr Clarke	7	2.3	15.8	9.2	2.6	22.4	5.1	42.0	12.7	74.3
Lauren Gallacher	Mr Clarke	7	92.9	62.8	80.3	54.0	89.4	50.3	66.8	87.4	74.3
Samera Kan	Mr Clarke	7	92.9	90.4	80.3	90.9	89.4	72.6	91.1	87.4	58.3
Thomas Lendrum	Mr Clarke	7	28.1	44.5	32.2	18.9	6.8	5.1	10.3	53.7	2.7
Kelly OHare	Mr Clarke	7	79.3	90.4	58.0	44.5	89.4	72.6	42.0	100.0	74.3
Amy Cotellesa	Mr McCullough	7	63.2	53.7	58.0	63.7	89.4	50.3	50.4	79.1	74.3
Kyle Greenwood	Mr McCullough	7	71.3	94.6	97.0	97.1	89.4	96.8	91.1	79.1	85.8
Luke Johnson	Mr McCullough	7	4.0	20.9	70.3	13.2	1.8	0.9	42.0	18.9	85.8
Joshua Quinn	Mr McCullough	7	9.3	8.6	70.3	4.8	6.8	50.3	58.7	5.1	58.3
Harry Williams	Mr McCullough	7	16.2	20.9	22.5	13.2	1.0	50.3	66.8	12.7	27.6
Owen Webster	Mr Smith	7	63.2	99.1	80.3	82.9	100.0	89.0	100.0	67.9	93.8
Joe Patel	Mrs Drummond	7	9.3	4.6	44.6	4.8	40.2	0.3	42.0	3.0	74.3
Nita Moss	Mrs Drummond	7	4.0	20.9	97.0	44.5	3.5	13.1	50.4	27.0	85.8
David Smith	Mrs Drummond	7	21.4	100.0	80.3	100.0	100.0	50.3	81.4	53.7	100.0
Tim Vincent	Mrs Drummond	7	100.0	99.1	99.0	90.9	100.0	89.0	91.1	100.0	99.6
James Barros	Mrs Jones	7	5.3	8.6	44.6	6.7	22.4	13.1	66.8	53.7	27.6
Tim Chung	Mrs Jones	7	100.0	85.1	93.4	97.1	74.4	72.6	96.5	94.5	74.3
Karin Hillyer	Mrs Jones	7	63.2	97.4	93.4	90.9	100.0	99.3	81.4	87.4	98.0
Tom Murdie	Mrs Jones	7	9.3	6.3	22.5	4.8	1.0	13.1	58.7	27.0	9.9
Olivia Pessot	Mrs Jones	7	28.1	6.3	5.6	26.7	22.4	28.6	2.6	3.0	5.3
Max Gallagher	Miss Goode	8	15.4	2.8	73.6	0.8	21.8	33.7	5.1	50.8	63.5



## Joe Patel



Children in the red square have high ability, but low confidence, so need more psychological help.

Children in the green square have plenty of confidence but lower ability, so will need coaching on the areas they are struggling with.



# 360° Solution



## Further Support:

- Webinars, Videos, Events and Skype
- Spatial Ability (video & research)
- Guide to “Standardised Tests”
- Sample Reports

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Thank you!

