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COGNITIVE ABILITIES TEST 4: IRISH EDITION

Sample Reports

IRISH EDITION

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Introduction to the Cognitive Abilities Test 4: Irish Edition (CAT4)

CAT4 is the fourth edition of GL Assessment's well-established *Cognitive Abilities Test*. As part of the project to develop a new edition, an Irish version has been created, which has been fully standardised for Ireland from ages 10:06 to 17+.

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*A brief description of the Irish education system, Department of Education and Skills. CAT4: Irish Edition is a seamless assessment designed to support Primary and Post-Primary schools in understanding pupils' developed abilities, likely academic potential and learning preferences. It measures the four principle areas of reasoning – verbal, non-verbal, quantitative and spatial – allowing teachers and Guidance Counsellors to test the full range within an entire class or year.

CATA

CAT4: Irish Edition's ability to assess, to inform interventions and to monitor changes over time makes it an ideal tool when following guidelines from the 'Special Educational Needs: A Continuum of Support' document from the National Educational Psychological Service (NEPS).

The addition of a separate spatial battery helps to promote science and technology in schools, a key aim of the Irish education system in support of "maintaining economic competitiveness and securing continued prosperity"*. Recent research has confirmed the importance of assessing pupils' spatial ability in order to develop and support spatial skills, which are the basis for success in STEM (science, technology, engineering and maths) careers. By identifying spatial learners early and enabling teachers to adapt teaching and learning accordingly, *CAT4: Irish Edition* can help improve the uptake of STEM subjects in Irish schools.

One of the most exciting features of *CAT4* is the brand new suite of reports; users can now choose from six new optional reports with specific audiences in mind and the inclusion of more narrative makes the reports much easier to read and understand. To ensure rigour, *CAT4: Irish Edition* was standardised on 6,500 Irish pupils in Spring 2012.



Communicating CAT4: Irish Edition results through dynamic reports

Following extensive market research and *CAT3* customer feedback, we have developed a brand new suite of reports that help you interpret the data fully through the inclusion of more narrative. You can view examples throughout this booklet.

NEED MORE ADVICE?

For help and advice or to discuss your requirements with your local area consultant, Rebecca Garven, please call 087-9761265, call Customer Services on 1800 806 185 or email info@gl-assessment.ie The Group report for teachers is a rich and user friendly report that is designed to incorporate all of the core information required to carry out an analysis at group level. This report is delivered automatically to all *CAT4* users. As well as the Group report, *CAT4: Irish Edition* customers will also receive the Individual student report for teachers, providing a more in-depth analysis of an individual pupil's results.

In addition, users can choose from six optional reports, which can be purchased separately from as little as €2.35 per pupil. The additional reports are designed with specific audiences in mind, and these are presented in different formats, from PowerPoint[®] presentations for school leadership teams and governing bodies to easy-to-understand reports for parents and pupils. For example, the Individual report for parents provides, in a clear and concise format, further information about the assessment and their child's results, helping parents to understand what the data is showing and how they can support their child at home.

Many Irish schools will find the reports for parents and pupils particularly useful in light of the Education Act (1998) that requires schools to "regularly evaluate students and periodically report the results of the evaluation to the students and their parents".

Users of both the CAT4: Irish Edition paper and digital editions will automatically receive:

- CAT4: Irish Edition Group report for teachers
- CAT4: Irish Edition Individual student report for teachers

In addition, users will be able to purchase the following reports separately:

- CAT4: Irish Edition Individual report for students
- CAT4: Irish Edition Individual report for parents
- CAT4: Irish Edition Summary report for senior leaders
- CAT4: Irish Edition Summary presentation for senior leaders (PowerPoint[®] format)
- CAT4: Irish Edition Excel report (free for digital customers)
- CAT4: Irish Edition Cluster report.

Examples of these are featured throughout this booklet.



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CAT4: Irish Edition Group report for teachers

The CAT4: Irish Edition Group report for teachers is a comprehensive report that provides a group level analysis of a selected group or cohort of pupils and it can be used by any practitioner. The report will help when communicating results and learning biases among pupils in different teaching groups. This may allow those with similar or contrasting profiles to be taught together with mutual benefits.

The report includes:

- An assessment overview An easy-to-understand overview with details of why CAT4: Irish Edition is used, with examples of questions from each part of the test.
- Scores for the group A simple table highlighting key group scores. It outlines the individual pupil names, number of questions they have each attempted, their Standard Age Scores (SAS) and their Group Ranking (GR).
- Analysis of group scores (by battery) Presented in easy-touse tables allowing users to compare their pupils' results with the national sample.
- Student profiles A new colour-coded chart shows the distribution of a group of pupils across seven profile types, indicating their preference for learning. This section then explains the general characteristics of each profile type, compares group results to the national sample and lists the individual pupil names within each profile. The Individual student report for teachers then takes this to the next stage, with actionable implications for teaching and learning provided for each pupil.

- 6 What is CAT4? Level E
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CAT4 Group report for teachers

School: Sample Irish School		
Group: 1st Year		
Date of test: 02/10/2013	Level: E	No. of students: 60

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

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		carpet -	→ floor : curt	ain →	
The answer is window, because a carpet goes on a floor and a curtain hangs at a window.	window	shade	hang	drapes	cloth

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.		[1→2]	[5 → 10]	[4 → ?]	
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	5	7	8	9	10
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.		18 5	17 7 16	9 →	
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.	11	12	13	14	15



AT4

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Analysis of group scores (by battery)

The table below shows mean (average) scores for your group compared with those for the national sample.

	Verbal mean SAS	Quantitative mean SAS	Non-verbal mean SAS	Spatial mean SAS	Overall mean SAS
National average	100.0	100.0	100.0	100.0	100.0
Group	102.7	98.2	99.9	99.1	100.1

The table below shows the distribution of scores for your group compared with those for the national sample. In addition, the bar chart presents this information.

Description	Very low	Below a	average		Average		Above	Very high	
SAS bands	<74	74–81	82–88	89–96	97–103	97–103 104–111		119–126	>126
National average	4%	7%	12%	17%	20%	17%	12%	7%	4%
Verbal	0%	4%	16%	0%	20%	40%	12%	8%	0%
Quantitative	8%	4%	8%	20%	20%	20%	16%	4%	0%
Non-verbal	8%	12%	0%	8%	24%	28%	4%	12%	4%
Spatial	8%	4%	4%	20%	24%	24%	12%	4%	0%



Distribution of scores for your group compared with those for the national sample

CAT4

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It may be helpful to consider which students fall into which broad profile, but this information must be treated with caution as the descriptors are general and not individualised: students' preferences for learning will be influenced by other factors. The *CAT4* Individual report for teachers offers more fine detail.

	National	Gro	oup
	%	%	No. of students
Extreme verbal bias	2%	4%	2
Moderate verbal bias	4%	4%	2
Mild verbal bias	11%	12%	9
No bias or even profile	66%	72%	43
Mild spatial bias	11%	4%	2
Moderate spatial bias	4%	0%	0
Extreme spatial bias	2%	4%	2

Extreme verbal bias

- These students should excel in written work and should enjoy discussion and debate.
- They should prefer to learn through reading, writing and may be very competent independent learners.
- They are likely to be high achievers in subjects that require good verbal skills such as English, modern foreign languages and humanities.
- They may prefer to learn step-by-step, building on prior knowledge, as their spatial skills are relatively weaker, being in the low average or below average range.

Students:

Theo Marshall

Moderate verbal bias

- Students in this group will have average to high scores for Verbal Reasoning and relatively weaker Spatial Ability with scores in the average range.
- These students are likely to prefer to learn through reading, writing and discussion.
- Step-by-step learning, which builds on prior knowledge incrementally, is likely to suit these students.

Students:	
Cian Cronin	1

Stephen Saunders

Mild verbal bias Some students with this profile will have low average or below average scores for relatively weaker Spatial Ability, but the gap between scores will be narrow. A slight bias for learning through reading, writing and discussion may be dir group.



Rachel Mullins Bella Overton Sally Walsh





erbal bias

- A slight bias for learning throug group.
- Students:
- Eimer Mahoney

Ja

Lian

Emma Omouyier Patrick Verity T4



The CAT4: Irish Edition Individual student report for teachers provides an in-depth analysis of an individual pupil's results along with a focus on how they can be helped to achieve their potential. The narrative includes implications for teaching and learning, which offer brief insights into how different levels of ability combined with learning preferences may affect a pupil's learning. It is hoped that simple adjustments based on CAT4: Irish Edition results and other information about a pupil can improve outcomes. It can be used by any teacher or Guidance Counsellor.

The report includes:

- An assessment overview An easy to understand overview with details of why CAT4: Irish Edition is used, with examples of questions from each part of the test.
- Example results A visual guide to the scores table with an explanation of what is being shown and definitions where required.
- Scores A detailed breakdown of scores for each pupil, including their Standard Age Scores (SAS) with confidence bands, National Percentile Rank, stanines and Group Ranking (GR).
- Profile summary A pupil's score is plotted on the profile chart and a dynamic explanation of their profile type is given.
- Implications for teaching and learning Based on the pupil's CAT4: Irish Edition scores, dynamic narrative outlines how the pupil can best be supported by teachers to ensure they achieve their potential.

12 – Why use CAT4? – Level E

13 – Individual scores and profile summary – Level E



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 and school management data on aspects such as attendance, additional needs, EAL status, etc.

Relationship between CAT4 scores

Description	Very Low	Belov	Average		A١	/era	ge		Above	Avera	ige	Very Hi	gh
Stanine (ST)	1	2	3	4		5		6	7	8		9	
Standard Age Score (SAS)	70		0	90		100	-	11	0	120		130	
National Percentile Rank (NPR)	1	5 1	0 20	30	40	50	60	70	80	90	95	99	



Name: Connor Yates							
School: Sample Irish School							
Group: 1st Year	Group: 1st Year						
Date of test: 02/10/2013 Level: E Age: 12:05 Sex: Male							

Scores

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	96	40	4	=37	
Quantitative	18/36	93	32	4	=41	
Non-verbal	42/48	117	87	7	4	
Spatial	35/36	113	80	7	=11	► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ► ►
Mean	-	105	-	-	-	

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 Connor's profile, which is indicated by the coloured band.



Name: Connor Yates							
School: Sample Irish School							
Group: 1st Year							
Date of test: 02/10/2013 Level: E Age: 12:05 Sex: Male							

Moderate spatial bias

- This profile demonstrates a moderate preference for spatial over verbal learning.
- Connor's performance should be markedly 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.
- Connor is likely to prefer active learning methods such as modelling, demonstrating and simulations, but should also be able to engage with most written material.
- Connor'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 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 Connor from accessing key areas of the curriculum.
- A test to establish a reading age is recommended to ascertain whether Connor is able to access the curriculum.
- Connor may benefit from some targeted additional support, with a focus on strategies to develop greater verbal ability.
- This may include opportunities for discussion, support with specialist vocabulary, and opportunities to develop presentational skills.
- Pairing Connor with someone who is stronger in this area may support his progress.
- Paired work is likely to be more beneficial than group work.
- Connor is likely to perform better where both spatial and visual approaches to learning are used.
- Connor should be encouraged and helped to use his better spatial ability in subjects which depend on verbal skills. So encourage him to use visual material (pictures to support text, videos, etc), create visual representations of events in history, use mind maps as an aid to remembering the key events and characters in a text in English and annotate text to reinforce key facts and information in science.
- Connor may find extended pieces of writing easier to do if he plans them using flow charts, putting down
 ideas in note form and then deciding how to sequence these before starting the actual writing.

CAT4

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CAT4

CAT4: Irish Edition Individual report for students & Individual report for parents

Many Irish schools will find the reports for parents and pupils particularly useful in light of the Education Act (1998) that requires schools to "regularly evaluate students and periodically report the results of the evaluation to the students and their parents".

CAT4: Irish Edition Individual report for students

The CAT4: Irish Edition Individual report for students provides pupils with an explanation of their CAT4: Irish Edition results and where their strengths and weaknesses lie. It is important for all pupils to understand that the information gained from CAT4: Irish Edition testing can form the basis of plans for their future development, which they themselves can take some control over. The report not only promotes self-reflection, but provides pupils with ideas for maximising their learning preferences.

The report includes:

- An assessment overview An easy-to-understand overview with details of why CAT4: Irish Edition is used, with examples of questions from each part of the test.
- Scores A pupil-friendly overview of their scores for each test battery, enabling pupils to see where their strengths and weaknesses lie.
- **Summary** A series of bullet points explain to the pupil what their CAT4 scores show and offer recommendations of how they can nurture their strengths and weaker areas.

CAT4: Irish Edition Individual report for parents

The CAT4: Irish Edition Individual report for parents provides parents with an overview of CAT4: Irish Edition, has an explanation of their child's results and shows where their strengths and weaknesses lie. Developed to support the routine reporting to parents, the narrative text included within the report is designed to help parents understand their child's profile of results and what actions they can take to further their learning. In this way, CAT4: Irish Edition can be used as an effective tool for reinforcing school-based learning activities at home.

The report includes:

- An assessment overview An easy-to-understand overview with details of why CAT4: Irish Edition is used, with examples from each part of the test.
- Scores A parent-friendly overview of their child's scores for each test battery, showing where their strengths and weaknesses lie.
- **Summary** A profile description with written recommendations to help improve parent understanding of their child's learning preference, with suggestions for how to offer support at home.

CAT4: Irish Edition Individual report for students

16 – Individual scores for Anita Anthony – Level E

CAT4: Irish Edition Individual report for parents

- 17 What is CAT4? Level E
- 18 Individual scores for Connor Yates – Level E

Name: Anita Anthony							
School: Sample Irish School							
Group: 1st Year							
Date of test: 02/10/2013	Level: E	Age: 12:00	Sex: Female				

Profile



Summary

Your profile of scores from *CAT4* is evenly balanced. This means that you can learn very effectively in a number of different ways.

- Learning is most effective when it is both visual and verbal, so you have the combination of abilities to make you an excellent independent learner.
- You may find that you get ahead very quickly in some subjects and need extra work that allows you to do more research or read around a subject or follow your own interests. If you have a favourite subject, ask your teacher about this.
- Make sure that you think through your answers to questions or problems in class or when doing your homework. You may know the solution very quickly but need to show how you have arrived at it. Your very good verbal skills should help you do this.
- If you are asked to mentor another student, do go for it as your skills make you suitable for this and you have a lot to offer.
- Make sure you read widely outside school. Read from a range of different types of books, as this will add to your knowledge and skills.
- Think about activities outside school that build on your abilities, for example debating, drama or science club. You may find you enjoy these if you are not already taking part.

In the table above, the yellow shading represents the average range.





Name: Connor Yates						
School: Sample Irish School						
Group: 1st Year						
Date of test: 02/10/2013	Level: E	Age: 12:05	Sex: Male			

What is *CAT4*?

Your child has taken the *Cognitive Abilities Test Fourth Edition (CAT4)* which assesses how well a student can think about tasks and solve problems using a range of different questions.

Some tasks involved thinking about shapes and patterns (Non-verbal Reasoning), some with words (Verbal Reasoning) or numbers (Quantitative Reasoning) and, finally, some questions were answered by thinking about shape and space together and imagining a shape being changed and moving (Spatial Ability).

Why use *CAT4*?

- *CAT4* is used in many schools across Ireland to provide information to teachers, students and parents that, with other information, forms the basis for discussion about how best you can learn and reach your potential in school.
- *CAT4* does not require any prior knowledge and you cannot 'learn' how to answer the questions in *CAT4*. It is therefore a good test because everyone starts at the same place.
- The abilities tested in *CAT4*, such as spatial ability, may be difficult to demonstrate in the classroom so it is important that teachers know the level of a student's ability in such areas.
- *CAT4* results will help your teachers decide about the pace of learning that is right for an individual and whether additional support or challenge is needed.
- *CAT4*, unlike an English or maths test, is not a test of what the student has learned. It tests how an individual can think in areas that are known to make a difference to learning and achievement.

Name: Connor Yates							
School: Sample Irish School							
Group: 1st Year							
Date of test: 02/10/2013	Level: E	Age: 12:05	Sex: Male				

Profile



Summary

Connor'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.

- Connor should use online resources, videos and books with plenty of pictures to help remember key facts and information.
- Connor'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, Connor may find some of his schoolwork difficult, particularly where a high level of reading and writing is required.
- Does Connor 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 Connor understands each step of the task before moving on. It is important that Connor learns at a pace that is right for him.
- Tell Connor to ask the teacher to explain anything that is not clear.

In the table above, the yellow shading represents the average range.





The CAT4: Irish Edition Summary report for senior leaders provides high level analysis of a selected cohort or group's performance against the national average. The report is designed for use by Principals, Guidance Counsellors, senior leadership teams and governing bodies. It is important to recognise that CAT4: Irish Edition results can be relevant to a range of other professionals who are involved with pupils' welfare and development. Some colleagues may have a limited knowledge of testing and so the introductory text that forms part of the report will be useful in giving a quick overview and an example of the test material.

The report includes:

- An assessment overview An easy-to-understand overview with details of why CAT4: Irish Edition is used, with examples from each part of the test.
- Group Analysis A detailed analysis of the cohort/group scores compared to the national average, with analysis by battery, gender and ethnicity, and further options available as specified.
- Student Profiles A profile chart indicating the learning preferences for all pupils in the cohort/group with supporting explanations (shown on page 9).

Note: a Summary presentation for senior leaders is also available in PowerPoint[®] format, ideal for sharing key findings with a wider audience.

- 20 Group analysis by battery Level E
- 21 Group analysis by gender Level E
- 22 Group analysis by special educational need – Level E
- 23 Distribution of scores by English as an Additional Language – Level E

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Group: 1st Year

Date of test: 02/10/2013

Level: E

No. of students: 60

CAT4

Group analysis (by battery)

The table below shows mean (average) scores for all students compared with those for the national sample.

	Verbal mean SAS	Quantitative mean SAS	Non-verbal mean SAS	Spatial mean SAS	Overall mean SAS
National average	100.0	100.0	100.0	100.0	100.0
All students	102.7	98.2	99.9	99.1	100.1
90% confidence band	98.9—106.5	93.5—102.9	94.3—105.6	94.7—103.5	96.1—104.2

The table below shows the distribution of scores for all students compared with those for the national sample. The bar chart also presents this information.

Description	Very low	Below a	average	Average			Above average		Very high
SAS bands	<74	74–81	82–88	89–96	97–103	104–111	112–118	119–126	>126
National average	4%	7%	12%	17%	20%	17%	12%	7%	4%
Verbal	0%	4%	16%	0%	20%	40%	12%	8%	0%
Quantitative	8%	4%	8%	20%	20%	20%	16%	4%	0%
Non-verbal	8%	12%	0%	8%	24%	28%			4%
Spatial	8%	4%	4%	20%	24%	2	Group and	alysis	0%







Group analysis (by special educational need)

The table below shows mean (average) scores for all students compared with those for the national sample.

	No. of students	Verbal mean SAS	Quantitative mean SAS	Non-verbal mean SAS	Spatial mean SAS	Overall mean SAS
National average	-	100.0	100.0	100.0	100.0	100.0
All students	60	100.6	99.2	98.7	101.6	100.1
None	49	103.6	102.0	102.8	105.1	103.4
ASD	6	92.2	90.7	85.8	91.5	90.2

The table below shows the distribution of scores for all students across each battery, compared with those for the national sample. The bar charts also present this information on the following page.

Description	Very low	Below a	Below average Average			Above	average	Very high	
SAS bands	<74	74–81	82–88	89–96	97–103	104–111	112–118	119–126	>126
National average	4%	7%	12%	17%	20%	17%	12%	7%	4%
				Verbal					
All students	0%	7%	3%	30%	23%	18%	5%	12%	2%
None	0%	0%	2%	29%	24%	22%	6%	14%	2%
ASD	0%	17%	0%	50%	33%	0%	0%	0%	0%
			Qı	uantitative					
All students	2%	3%	7%	33%	28%	13%	7%	7%	0%
None	0%	0%	4%	29%	35%	16%	8%	8%	0%
ASD	0%	17%	0%	83%	0%	0%	0%	0%	0%
			Ν	on-verbal					
All students	5%	7%	8%	20%	20%	25%	10%	5%	0%
None	0%	2%	6%	18%	24%	31%	12%	6%	0%
ASD	0%	33%	17%	50%	0%	0%	0%	0%	0%
				Spatial					
All students	2%	7%	8%	12%	25%	25%	12%	8%	2%
None	2%	0%	4%	10%	27%	31%	14%	10%	2%
ASD	0%	0%	33%	33%	33%	0%	0%	0%	0%

CAT4

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CAT4 WEBSITE

The CAT4 website provides additional information about the assessment, frequently asked questions, sample reports and videos/demonstrations of the product. Visit:

www.cat4support.com

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