



INFORMATION BRIEF

Cognify



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Predict future work performance

Cognify brings psychometric assessment into the 21st century. We merged game design thinking with proven cognitive assessment methods to build an engaging and fun experience for candidates.

Cognify collects and processes thousands of pieces of data from each mini-game, revealing powerful insights that aren't possible through traditional cognitive assessments. Instead of your candidates telling you their strengths and weaknesses, they can show you.

The three mini-games provide a rich, immersive experience for candidates. Clean designs and a flawless user experience combine to create games appropriate for any age, role and industry.



MEASURE

Attributes critical to every role: problem solving, numerical reasoning and verbal knowledge



PREDICT

How candidates will perform on the job



TIME

10 minutes, timed + tutorials



GAMES

Three mini-games



DEVICE

Device-agnostic: take the test wherever you are on a digital device of your choosing



LANGUAGES

Available in a range of languages, please ask for more info (some limitations apply)



Game-Based Assessments

Criteria is driving change and innovation in the development of game-based assessments. This is achieved through cutting edge cloud technologies, big data, a custom-built analytics platform, psychometric modeling and game design.

Game-based assessments, unlike traditional assessments, take more into account than just the correct answer, providing richer insight into a candidate's strengths and abilities. Game-based assessments draw the best effort from the candidate, providing insight into their true potential. This is done while maintaining robust psychometric properties and complementing traditional psychometric assessment data.

A further strength of game-based assessments is their robustness against faking and response distortion, providing the candidate with tasks that assess ability while not exposing the nature of the construct being measured. This further strengthens the ability of game-based assessments to provide recruiters with true insight into their candidates. Candidate engagement is increased by providing real time, in-game feedback that indicates to the candidate how they are performing as they move through the tasks.

What does Cognify assess?

Cognify measures cognitive aptitude, often referred to as general intelligence or *g*. Cognitive aptitude refers to a person's ability to solve problems, digest and apply information, learn new skills, and think critically.

Why is cognitive aptitude so important?

People who score well on cognitive aptitude tests use their high-level information processing skills to solve job-related problems more effectively, and to learn on the job more quickly. As a result, people with strong scores tend to perform better on the job and in training.

A strong and long-standing body of research demonstrates that cognitive aptitude is one of the most accurate predictors of job success:

- ✓ 1.6x as predictive as unstructured interviews
- ✓ 4x as predictive as experience.

Research has also shown cognitive aptitude to be valid, reliable and strongly predictive of future work performance. People with high levels of cognitive aptitude can:

- ✓ Perform work tasks more accurately and successfully
- ✓ Make decisions more effectively
- ✓ Use reasoning skills and solve problems
- ✓ Respond intelligently to new or complex circumstances.



Which jobs is Cognify useful for?

Cognitive aptitude is a critical underlying factor for almost every job, since all jobs require information processing, problem solving and learning new information. It's especially important in jobs that require people to process large amounts of information, such as complex technical roles, knowledge worker jobs and managerial roles.

Cognify provides a state-of-the art game-based format that's engaging and fun for candidates, while also motivating them to perform to the best of their ability. It's applicable for all roles and industries, including:

- ✓ graduate and campus hires
- ✓ intern roles
- ✓ digital and technical
- ✓ clerical and administrative
- ✓ customer service and call center
- ✓ production
- ✓ logistics

The CHC model and Cognify

Cognify measures predictors of employee performance at work, which align closely with the Cattell, Horn and Carroll (CHC) model of human intelligence. The CHC model is widely regarded as the most influential theory in the study of human intelligence. Based on a large body of research, spanning over 70 years, the model was developed using a psychometric approach.

While the full model broadly encompasses a large variety of abilities related to human intelligence, Cognify targets more specific psychological characteristics such as Fluid Reasoning, Reading and Writing, and Quantitative Knowledge that contribute strongly to General Intelligence (g).

The table below outlines the alignment of the CHC model to the broad abilities included in Cognify.

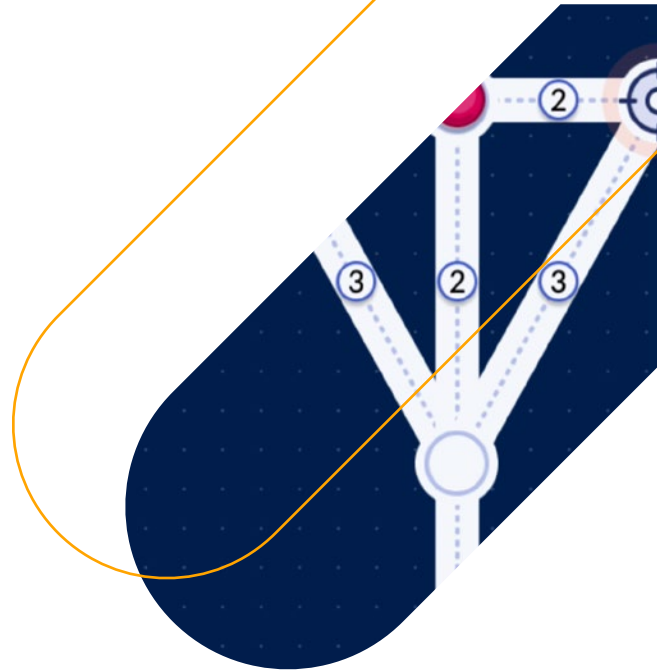
CHC CONSTRUCT	COGNIFY BROAD ABILITY	GAMES
Fluid Reasoning	Problem Solving	Grid Lock
Quantitative Knowledge	Numerical Reasoning	Numbubbles
Reading & Writing	Verbal Knowledge	Proof It

Problem Solving

Problem Solving measures fluid reasoning and encompasses a candidate's ability to solve new problems without prior knowledge. This ability influences the capacity to learn quickly on the job and succeed in a role. The Problem Solving broad ability is measured by the game Grid Lock.

Grid Lock

In Grid Lock, the candidate solves a succession of puzzles by fitting all of the pieces into the grid as quickly as they can. There are 9 rounds of increasing difficulty with a time limit of 3 minutes. Top performers in this game are likely to have strong general and spatial reasoning skills.



Numerical Reasoning

Numerical Reasoning measures how well a candidate comprehends quantitative and numerical concepts. This ability is important for roles where knowledge and working with numbers are critical in completing day to day tasks. The Numerical Reasoning ability is measured by the game Numbubbles.

Numbubbles

In Numbubbles, the candidate is given a target number, and needs to identify and pop the bubbles containing an equation that equals the target. They need to do this as quickly and accurately as they can. There are 10 rounds of increasing difficulty with a total time limit of just under 3 minutes. High performers are likely to have strong quantitative and fluid reasoning skills.

Verbal Knowledge

Verbal Knowledge refers to a candidate's breadth of knowledge and ability regarding written language. In particular, this refers to skills such as spelling, grammar, and identifying errors in text. This ability is important for roles where reading and writing is required for day-to-day tasks. Verbal Knowledge is measured by the game Proof It.

Proof it

In Proof It the candidate must identify as many misspelled words and punctuation errors as possible in the time provided. There are 5 rounds that the candidate moves through in a 5-minute time limit. Candidates who do well on this assessment are likely to demonstrate strong reading and writing skills.

Can you spot these avoida
well; Also, the words are some

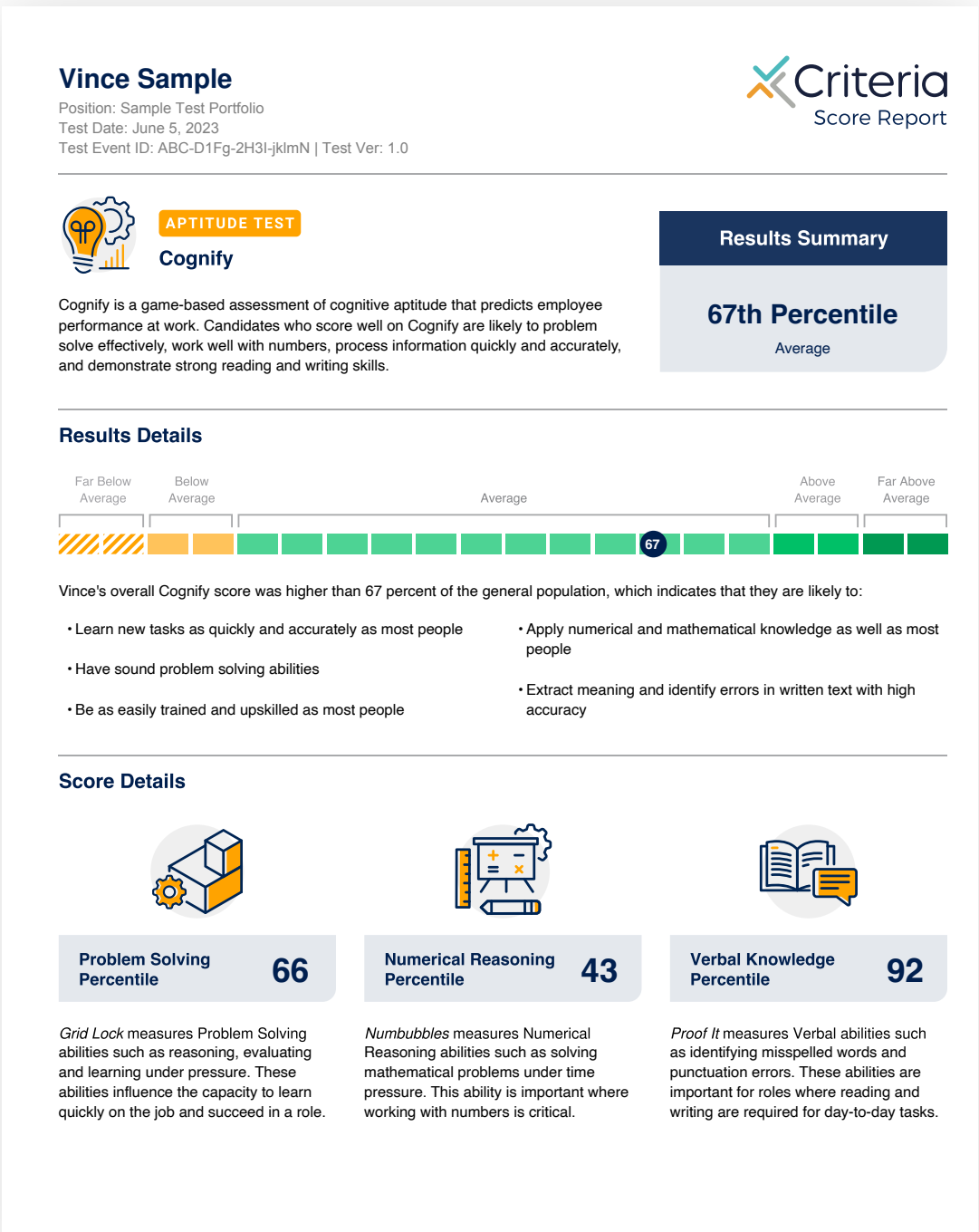
Reporting

When candidates complete the game, we combine all of their data into an overall percentile score, as well as sub scores for each of the three abilities.

A candidate's score on Cognify is derived by comparing their performance on the games to that of others who have also completed this assessment. This comparison to the normative group produces percentile scores and forms the basis for interpreting scores.

Candidate percentile scores are placed into one of five performance classifications, ranging from Far Below Average to Far Above Average. The example below illustrates an Overall Score for a candidate based on the General Population comparison group.

The report also includes a description of the candidate's likely behavior based on their score, and a breakdown across the three score areas.



Creating a fair online candidate experience

Cognify can be completed on the internet either remotely or under supervised conditions. This provides a high level of flexibility and convenience for candidates. However, when testing is conducted in unsupervised conditions, it is possible that the candidate may have had assistance in completing the assessment, and it is essential to protect the security of the assessments. Criteria adopts the following best practice strategies to ensure online security and reduce the likelihood of cheating.

Unique candidate experience

Cognify is designed to ensure a high level of test security by presenting a unique candidate experience each time the assessment is completed. Particular game features of the 'round' based games are randomized in such a way that no two sessions are identical, while the difficulty of each round remains consistent across all sessions. The 'puzzle' based games feature random streaming of puzzles for each level to again ensure that no two sessions are the same. Identical levels of difficulty at respective stages of the game and across all games played is maintained, however, to ensure that candidate comparison remains fair.

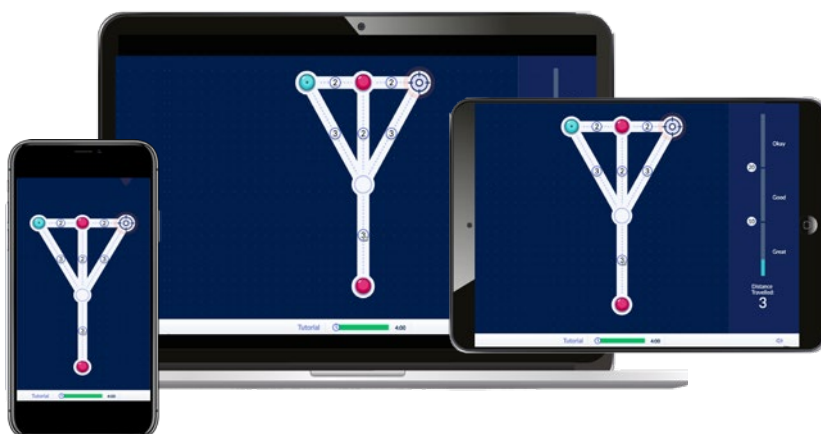
Secure online assessment

Our online testing engine is delivered using secure web technology, which allows us to ensure that assessment security and integrity is maintained and that assessment time is tracked accurately.

Flexible testing on any device

Cognify is device-agnostic. This means candidates can take the test on any digital device they choose, anywhere and at any time.

We've made the test secure and user-friendly so your candidates can focus on completing the test.



Validation

Test construction

The Cognify game suite was constructed through a rigorous and scientifically robust process, from the development of the games to the validation of the tool itself as a psychometric instrument.

The games were selected from a large number of initial concepts, and were designed and subsequently perfected over numerous iterations in conjunction with game designers, developers and software engineers. This process implemented feedback from a number of key stakeholders and candidates so as to ensure the best test experience could be achieved.

The games were validated using real candidate data, and construct validity was achieved through analysis against our existing cognitive ability assessment. This ensured that the games themselves validly measure various aspects of general mental ability.



Psychometric Properties

Validation studies have demonstrated the strong psychometric properties of Cognify.

- ✓ Through the validation process, a total of approximately 500 people completed each game of Cognify. The scores for each game all correlated to a strong degree with Revelian's Cognitive Ability Test (RCAT) - similar in complexity and format to the Criteria Cognitive Aptitude Test (CCAT) - ranging from $r = .301$ to $r = .54$
- ✓ Cognify demonstrated a test-retest reliability of .81, using a sample of 280 participants and a one-week duration between testing. (Note that in this study participants completed the assessment on different devices, potentially attenuating the correlation.)
- ✓ For each game, the metrics that combine to produce the game score each contribute in statistically unique and significant ways to predict the convergent measure (RCAT). This indicates that the scoring for each game is not only valid, but is conducted in a robust manner that takes multiple aspects of cognitive ability into account.
- ✓ Small gender differences were observed in some of the games, with men scoring slightly higher than women in some games and women scoring higher than men in others. Overall scoring formulas which combine results from the different games minimize these effects.
- ✓ There was no difference in performance found on the Problem Solving and Numerical Reasoning games between those where English was a first or second language. Games that assess these broad abilities therefore are shown not to adversely impact candidates for whom English is a second language. Only minor differences in scores between those where English was a first or second language was found on the Verbal Knowledge game.
- ✓ There was a weak to moderate positive relationship between game hours played per week with scores on one of the games within the Cognify suite (Grid Lock), such that those who play games more often on average performed slightly better in that specific game. This was also the case with self-rated games experience and performance on these specific games. The strength of this relationship was minimal, and is similar to that of the relationship between comfort and experience with psychometric testing and performance on traditional tests. It is for this reason that we recommend to candidates that they become familiar with psychometric tests and how they work. We would recommend something similar for Cognify. Further to this, as the overall score is the most reliable score and recommended for decision making, this effect would be minimized. Participants are given the opportunity to practice each game in separate tutorials before commencing in order to become familiar with the requirements of the assessment.
- ✓ Non-significant differences in performance were demonstrated when analyzing scores from a large, i.e. 280, randomly allocated sample of participants completing Cognify on either a mobile or desktop device. This finding provides strong evidence for the device-agnostic nature of Cognify.

Case Study

Multinational tech company modernizes its employer brand with Cognify

[View case study](#)

Awards and Validation

Cognify has been independently validated by a Multinational Tech Company and by globally recognized academic, Dr. Richard Landers and his team at Old Dominion University in Virginia.



