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ADDENDUM 1: Checklist & Assessment Descriptions

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UNIT-2 Overview:

The *Universal Nonverbal Intelligence Test—Second Edition* (UNIT-2) assesses general intelligence (*g*) and three foundational cognitive abilities (i.e. Memory, Fluid Reasoning, and Quantitative Reasoning).

The UNIT-2 is composed of six subtests (Symbolic Memory, Nonsymbolic Quantity, Analogic Reasoning, Spatial Memory, Numerical Series, and Cube Design), which are combined to form four possible global intelligence composites (the Abbreviated Battery, Standard Battery with Memory, Standard Battery without Memory, and the Full Scale Battery).

The UNIT-2 FSIQ is composed of all six subtests and is the most comprehensive, reliable, and valid composite available for the UNIT-2. As such, it is of course the best overall measure of general intelligence.

UNIT-2 Subtests:

Table 1: UNIT-2 Subtest Descriptions

Subtests	
Symbolic Memory	<p>Each Symbolic Memory item depicts a sequence of universal symbols for <i>baby, girl, boy, woman, and man</i> in two colours (i.e., green and black). The youngest examinees (ages 5-7 years) are required to select the printed option on the stimulus plate that corresponds to one or more stimulus figures. Older examinees (ages 8-21 years) are shown a sequence of the universal human symbols on a page for 5 seconds. Examinees must re-create from memory the depicted sequence using the symbolic Memory Response Cards.</p> <p>Primary Abilities Shared With Other Subtests</p> <ul style="list-style-type: none"> • Attention to Detail • Concentration • Perception of Meaningful Stimuli • Sequential Processing • Symbolic Mediation • Verbal Mediation • Visual Short-Term Memory <p>Secondary Abilities Shared With Other Subtests</p> <ul style="list-style-type: none"> • Concept Formation • Perceptual Organization • Visual–Motor Integration <p>As a measure of short-term sequential and symbolic memory, an examinee's performance on the Symbolic Memory subtest may predict such behaviours as the examinee's ability to attend to and distinguish important from irrelevant information; organize, recall, and follow multi-step directions; sequence verbal information meaningfully (e.g., story telling, reading, decoding); understand and compute multi-step mathematics story problems; ignore extraneous, competing information during problem solving; and concentrate on the interrelationships between salient variables.</p>

<p>Nonsymbolic Quantity</p>	<p>Each Nonsymbolic Quantity item presents an array of white and/or black domino-like objects of various numerical values that create a numerical sequence, equation, analogy, or mathematical problem. Among the domino-like objects is one object with a red question mark. The examinee determines which one of the numerical value responses best fits the incomplete conceptual or numerical analogy, sequence, or problem. The examinee completes the item by pointing to one of the response options provided on the stimulus page.</p> <p>Primary abilities shared with other subtests</p> <ul style="list-style-type: none"> • Abstract thinking • Analysis • Attention to detail • Concentration • Nonsymbolic mediation • Nonverbal reasoning • Perception of abstract stimuli • Perceptual organization <p>Secondary abilities shared with other subtests</p> <ul style="list-style-type: none"> • Concept formation • Reasoning <p>Performance on the Nonsymbolic Quantity subtest may predict such future behaviours as the examinee's ability to understand and solve abstract problems using symbols; determine the interrelationships between and among numbers; understand the relations represented by numbers; value classifications of symbolic systems; generalize learned principles to solve new problems (e.g., applying numerical rubrics learned in one context to a new but similar context); and use rules in a systematic fashion.</p>
<p>Analogic Reasoning</p>	<p>Each Analogic Reasoning item is an incomplete conceptual or geometric analogy, presented in a matrix format. The examinee completes the analogy by pointing to one of four response options provided on the stimulus page.</p> <p>Primary Abilities Shared With Other Subtests</p> <ul style="list-style-type: none"> • Abstract Thinking • Analysis • Concept Formation • Evaluation • Perception of Meaningful Stimuli • Reasoning • Symbolic Mediation • Synthesis • Verbal Mediation <p>Secondary Abilities Shared With Other Subtests</p> <ul style="list-style-type: none"> • Attention to Detail • Perception of Abstract Stimuli • Perceptual Organization • Sequential Processing • Simultaneous Processing • Spatial Orientation <p>Performance on the Analogic Reasoning subtest may predict such future behaviours as the examinee's ability to understand and solve conceptual problems; determine the interrelationships between objects and actions (e.g., understand cause-and-effect relationships); produce rational arguments, based on sequential logic; generalize learned principles to solve new problems (e.g., applying centrifugal force to cause sediments to settle in a vial); and acquire and use rules in a systematic fashion.</p>

<p>Spatial Memory</p>	<p>On the Spatial Memory subtest, the youngest examinees (ages 5-7 years) are required to select one of two or three options that matches a stimulus figure. Older examinees (ages 8-21 years) view a random pattern of green, black, or green and black dots presented on a 1 X 2, 2 X 2, 3 X 3, or 4 X 4 grid for a period of 5 seconds. After the stimulus is removed from sight, the examinee re-creates the spatial pattern by placing green and black circular chips on a blank response grid.</p> <p>Primary Abilities Shared With Other Subtests</p> <ul style="list-style-type: none"> • Attention to Detail • Concentration • Nonsymbolic Mediation • Perception of Abstract Stimuli • Perceptual Organization • Simultaneous Processing • Spatial Orientation • Visual Short-Term Memory <p>Secondary Abilities Shared With Other Subtests</p> <ul style="list-style-type: none"> • Visual-Motor Integration <p>Correlates of Spatial Memory Performance</p> <p>Performance on the Spatial Memory subtest may predict such future behaviours as the examinee's ability to view the totality and central nature of problems; attend to, process, and recall visual details (e.g., editing, photography, chess); remember the crux of information, rather than the sequence in which the information was presented; concentrate on a problem until the problem is well understood; disassemble and reassemble objects (e.g., motors, computers) by memory; and sensitivity and awareness to minor changes in the environment (e.g., noting the addition or subtraction of important elements).</p>
<p>Numerical Series</p>	<p>Each Numerical Series item presents an array of numbers or mathematical symbols that create a perceptual match or an incomplete quantitative series. Among the numbers or symbols presented on the stimulus page is a red question mark. The examinee determines which of the response options (i.e., numerical values or symbols) best completes the incomplete series. The examinee completes the item by pointing to one of the response options provided on the stimulus page.</p> <p>Primary abilities shared with other subtests</p> <ul style="list-style-type: none"> • Analysis • Concentration • Nonverbal reasoning • Perception of meaningful stimuli • Symbolic mediation • Visual-motor integration <p>Secondary abilities shared with other subtests</p> <ul style="list-style-type: none"> • Abstract thinking • Attention to detail • Perceptual organization • Reasoning • Sequential processing <p>Performance on the Numerical Series subtest may predict such future behaviours as the examinee's ability to understand and solve math problems; determine the interrelationships between and among numbers; understand the relations represented by numbers; value classifications of numerical systems; generalize learned principles to solve new problems (e.g., applying numerical rubrics learned in one context to a new but similar context); and use rules in a systematic fashion.</p>

Cube Design	<p>The Cube Design subtest involves the presentation, matching, and/or direct reproduction of two colour, abstract geometric designs. The youngest examinees (ages 5-7 years) match one of the three or four options to a stimulus design. Older examinees (ages 8-21 years) view a stimulus design and then reconstruct the design directly on the stimulus book or on the response mat using green and white 1-inch cubes.</p>
	<p>Primary Abilities Shared With Other Subtests</p> <ul style="list-style-type: none"> • Abstract Thinking • Analysis • Attention to Detail • Evaluation • Holistic Processing • Nonsymbolic Mediation • Nonverbal Reasoning • Perception of Abstract Stimuli • Perceptual Organization • Reasoning • Reproduction of a Model • Simultaneous Processing • Spatial Orientation • Synthesis • Three-Dimensional Representation • Visual–Motor Integration
	<p>Secondary Abilities Shared With Other Subtests</p> <ul style="list-style-type: none"> • Working Under Time Constraints
	<p>Performance on the Cube Design subtest may predict the examinee's mechanical or graphic (e.g., artistic, drafting, geometry) competence; ability to divide aspects of problems into discrete parts for examination and recombination to provide a viable solution; tenacity in complex future problem-solving situations; reaction to activities that have deadlines or specific time limits; flexibility in evaluating and modifying solution strategies; and ability to orient in and around his or her environment (e.g., reading maps, following spatial directions).</p>

Table 2: UNIT-2 Composite Descriptions

Composites	
Memory	The Memory Composite comprises the Symbolic Memory and Spatial Memory subtests. This Composite measures strategies for recall of multiple salient features simultaneously, including content, colour, orientation, number, location, and sequence. This Composite also measures discrimination, labelling, organisation, and categorization.
Reasoning	The Reasoning Composite comprises the Analogic Reasoning and Cube Design subtests. This Composite measures pattern processing, awareness of visual–spatial juxtapositions, and understanding of geometric relationships.
Quantitative	The Quantitative composite is composed of the Nonsymbolic Quantity and the Numerical Series subtests. This Composite measures numerical reasoning and relationships and number sense
FSIQ	The UNIT2 FSIQ comprises all 6 subtests that make up the three separate construct-specific composites: Memory, Reasoning, and Quantitative. As such, it is of course the most comprehensive, reliable, and valid composite available for the UNIT2 and the best overall measure of general intelligence.

Table 3: UNIT-2 Descriptive Classifications

Scaled Score	Descriptive Term	Index Score
1–3	Very Delayed	<70
4–5	Delayed	70–79
6–7	Below Average	80–89
8–12	Average	90–109
13–14	Above Average	110–119
15–16	Superior	120–129
17–20	Very Superior	≥130

WESCHSLER ADULT INTELLIGENCE SCALE – FOURTH EDITION (WAIS-IV)

WAIS-IV Overview:

The Wechsler Adult Intelligence Scale-Fourth Edition (WAIS-IV) is a test designed to measure intelligence in older adolescents and adults (aged 17 years and above).

It is composed of 10 core subtests and five supplemental subtests, with the 10 core subtests comprising the Full Scale IQ.

The WAIS-IV has been language adapted for Australia and New Zealand.

WAIS-IV Subtests:

Table 1: WAIS-IV Subtest Descriptions

VERBAL COMPREHENSION	
Vocabulary	The Vocabulary subtest required Greg to explain the meaning of words presented in isolation, both visually and orally. As a direct assessment of word knowledge, the subtest is one indication of his overall verbal comprehension and fund of knowledge. Performance on this subtest also requires abilities to verbalise meaningful concepts as well as to retrieve information from long-term memory.
Similarities	On the Similarities subtest Greg was required to respond orally to a series of word pairs by explaining the similarity of the common objects or concepts they represent. This subtest examines his ability to abstract meaningful concepts and relationships from verbally presented material. As well as involving crystallised intelligence, abstract reasoning, auditory comprehension, memory, associative and categorical thinking, distinction between nonessential and essential features and verbal expression.
Information	The Information subtest required Greg to respond verbally to a series of orally presented questions that assess the individual's knowledge about common events, objects, places, and people. The subtest is primarily a measure of his fund of general knowledge. Performance on this subtest also may be influenced by his cultural experience, as well as his ability to retrieve information from long-term memory.
Comprehension	The Comprehension subtest required Greg to provide oral solutions to everyday problems and to explain the underlying reasons for certain social rules or concepts. This subtest provides a general measure of verbal reasoning and conceptualisation, verbal comprehension and expression. In particular, this subtest assesses his comprehension of social situations and social judgment, as well as his knowledge of conventional standards of social behaviour.

PERCEPTUAL REASONING	
Block Design	The Block Design subtest required Greg to use two-colour cubes to construct replicas of two-dimensional, geometric patterns. This subtest assesses ability to mentally organize visual information. More specifically, this subtest assesses his ability to analyse part-whole relationships when information is presented spatially. Performance on this task also may be influenced by visual-spatial perception and visual perception-fine motor coordination, as well as planning ability.
Matrix Reasoning	The Matrix Reasoning subtest involves a series of incomplete gridded patterns that Greg completes by pointing to or saying the number of the correct response from 5 possible choices. This subtest assesses fluid intelligence, broad visual intelligence, classification and spatial ability, as well as Greg's knowledge of part-whole relationships and perceptual organisation abilities.
Visual Puzzles	The Visual Puzzles subtest requires Greg to view a completed puzzle and to then select three response options, which when combined will form the completed puzzle. This is a measure of an individual's non-verbal reasoning ability and their ability to both analyse and synthesise abstract visual stimuli.
Picture Completion *	The Picture Completion subtest required Greg to identify the important missing part in each of a series of pictures of common objects, events, or scenes. An indication of his ability in visual discrimination, the Picture Completion subtest assesses the abilities to detect essential details in visually presented material and to differentiate them from nonessential details. Performance on this task also may be influenced by an individual's general level of alertness to the world around him and long-term visual memory.
Figure Weights	The Figure Weights subtest involves Greg viewing a scale, which is missing weight(s) and then he has to select the response option which balances that scale. This is a measure of quantitative and analogical reasoning, which involves reasoning processes that can be expressed mathematically. The task emphasises the use of deductive and inductive logic.
WORKING MEMORY	
Arithmetic	Greg was required to mentally solve a series of orally presented arithmetic problems on the Arithmetic subtest. A direct measure of his numerical reasoning abilities, the subtest requires attention, concentration, short-term memory, and mental control. The Arithmetic subtest also measures logical reasoning, quantitative knowledge and sequential processing.
Digit Span	The Digit Span subtest is a series of orally presented number sequences that Greg must repeat verbatim (Digit Span Forward), in reverse order (Digit Span Backwards) or recall the numbers in ascending order (Digit Span Sequencing). A direct assessment of Greg's short-term auditory memory, the Digit Span subtest requires attention, concentration, and mental control and can be influenced by the ability to correctly sequence information. The Digit Span Sequencing task increases the working memory demands of the task.
Letter-Number Sequencing	The Letter-Number Sequencing subtest involves a series of orally presented sequences of letters and numbers that Greg simultaneously tracks and orally completes, with the numbers in ascending order and the letters in alphabetical order. This task is a measure of sequential processing ability, short term auditory memory span, mental manipulation, attention, and concentration. Letter-Number Sequencing also assesses an individual's underlying information processing abilities, cognitive flexibility and fluid intelligence.

PROCESSING SPEED	
Symbol Search	On the Symbol Search subtest Greg was required to inspect several sets of symbols and indicate if special target symbols appeared in each set. A direct test of speed and accuracy, the subtest assesses scanning speed and sequential tracking of simple visual information. Performance on this subtest also may be influenced by visual discrimination and visual-motor coordination.
Coding	The Coding subtest required Greg to use a key to associate a series of symbols with a series of shapes and to use a pencil to draw the symbols next to the shapes. A direct test of speed and accuracy, the Coding subtest assesses ability in quickly and correctly scanning and sequencing simple visual information. Performance on this subtest also may be influenced by short-term visual memory, attention, or visual-motor coordination.
Cancellation	The Cancellation subtest asks Greg to scan a structured arrangement of shapes, for a specified target shape, which he will mark. The Cancellation subtest is a direct measure of processing speed, as well as visual selective attention, vigilance, perceptual speed and visual motor ability. The inclusion of a decision making component (selection is based on both shape and colour) places more complex demands upon Greg.

The **Verbal Comprehension Index (VCI)** is a measure of verbal acquired knowledge and verbal reasoning incorporating the 3 core Verbal subtests of Information, Similarities, and Vocabulary and one supplemental subtest Comprehension.

The **Perceptual Reasoning Index (PRI)** is a measure of fluid reasoning, spatial processing, attentiveness to detail, and visual-motor integration comprising the 3 core Performance subtests of Visual Puzzles, Block Design, and Matrix Reasoning and two supplemental subtests; Figure Weights and Picture Completion.

The **Working Memory Index (WMI)** comprises the two core subtests of Arithmetic, Digit Span, and one supplemental subtest; Letter-Number Sequencing. The subtests provide a range of verbally presented tasks that require the individual to attend to information, to hold briefly and process that information in memory, and then to formulate a response.

The **Processing Speed Index (PSI)** is an indication of an individual's ability to process simple or routine visual information quickly and efficiently and to quickly perform tasks based on that information. Good speed of simple information processing may free cognitive resources for the processing of more complex information and ease new learning. The PSI comprises two core subtests; Coding and Symbol Search and one supplemental subtest; Cancellation.

The **General Ability Index (GAI)** is an optional summary score that is less sensitive to the influence of working memory and processing speed. As working memory and processing speed are vital to a comprehensive evaluation of cognitive ability, it should be noted that the GAI does not have the breadth of coverage as the FSIQ. GAI is not considered to be valid if there is an 18+ difference between the VCI and PRI.

The **Full Scale IQ (FSIQ)** score is the overall summary score that estimates an individual's general level of intellectual functioning. It is usually considered to be the score that is most representative of global intellectual functioning. FSIQ is not considered to be valid if there is an 18+ difference between the VCI, PRI, WMI or PSI.

Verbal Comprehension weaknesses can cause difficulty learning and performing to ability in exams/performing in the work place by:

- Trouble understanding verbal directions and/or instructions. This will be more so with complex language, or when multiple steps are included in an instruction.
- Struggling in written exams, especially when also faced with added time pressures.
- Being seen as a 'poor listener'. These individuals can appear to be easily distracted and inattentive at times, especially when faced with high verbal task demands.
- Being more likely to be working in environments that are more practical, hands-on or require knowledge of maths, science, artistic skills etc.
- Improved learning and skill acquisition from charts, visual materials, diagrams, videos, or hands-on on the job training.
- Difficulty in terms of reading comprehension – they may need to re-read a given text in order to fully understand the meaning (i.e. filling out forms or completing paperwork may be particularly time consuming).
- Difficulty in understanding abstract concepts, particularly when asked to perform tasks that rely heavily on verbal abstract reasoning.
- Difficulty in understanding social conventions (i.e. what should you do if you find a wallet in a store).

Perceptual Reasoning weaknesses can cause difficulty learning and performing to ability in exams/performing in the work place by:

- Better performance on tasks where there are required to answer orally or provide a written response.
- Trouble understanding maths concepts and completing maths equations. These individuals may do better at understanding maths problems if they are explained verbally, rather than trying to explain it through the use of maths equations/notation.
- Maths difficulties may also be seen in terms of continuously failing to attend to maths signs/symbols which leads to further errors.
- Difficulty with nonverbal reasoning and problem solving
- May struggle in terms of reading maps, understanding diagrams or working on tasks that involve them needing to draw meaning from complex visual material.
- Social difficulties, given that these individuals will tend to find it more difficult to read nonverbal cues (i.e. body language, facial expressions). They may also have difficulties in terms of understanding humour, or sarcasm; they will tend to interpret it literally.
- Difficulty in terms of the social use of language, even in the context of a complex vocabulary.
- Poor memory for visual information
- Poor graphomotor skills- messy handwriting, difficulty with drawing. These individuals tend to work best when allowed access to computers.

Working Memory weaknesses can cause difficulty learning and performing to ability in exams/performing in the work place by:

- Difficulty absorbing instructions, particularly if they contain more than one step.
- Wide ranging difficulties in both maths and reading, both of which are activities that place high demand on working memory ability.
- These individuals will be slower than their peers in being able to pick up new skills, or in developing new concepts.
- Difficulty performing mental maths calculations, being able to recall names or phone numbers without prompts.
- Frequent errors across tasks that involve the individual needing to recall small amounts of information, while at the same time performing another task.
- Difficulty performing tasks with a number of steps, they may miss out steps or make mistakes in terms of not carefully paying attention to the details.
- Appearing to have a relatively short attention span, they may appear inattentive or distractible.

Processing Speed weaknesses can cause difficulty learning and performing to ability in exams/performing in the work place by:

- Difficulty processing large amounts of information, or being able to understand long, complex instructions.
- Poorer performances when given deadlines or are under time pressure. They simply need longer to complete a given task.
- Written work is very time consuming, it takes these individuals a long time to write. They are likely to have a preference for using a computer to complete the majority of their work.
- Easy to fatigue; these individuals need to use more cognitive resources to complete the same amount of work as their peers.
- Difficulty following conversations, or keeping track of the plot in books/movies

WMS-III-A Overview:

The WMS-III-A is a fast, reliable survey of immediate and delayed auditory and visual memory abilities.

The WMS-III-A was designed to provide clinicians with a quick, effective method of screening for memory impairment as part of a standard psychological or neuropsychological evaluation.

Although the WMS-III-A subtests measure aspects of auditory and visual memory, it is not designed to determine modality-specific deficits in memory performance (p 82, WMS-III-A Manual).

To conclusively determine any modality-specific deficits in memory performance, the full WMS-III battery should be administered.

The **Immediate Memory Composite (IMC)** score is a measure immediate recall of acquired knowledge which the individual articulates immediately after the stimulus is presented.

The **Delayed Memory Composite (DMC)** score is a measure delayed memory which requires the individual to recall information 25 minutes after the stimulus was presented.

The **Total Memory Composite (TMC)** score is the overall summary score that estimates an individual's general level of memory functioning. It is the aggregate score of the IMC and DMC score and is usually considered to be the score that is most representative of overall memory.

GRAY ORAL READING TESTS – FIFTH EDITION (GORT-5)

GORT-5 Overview:

The Gray Oral Reading Tests – Fifth Edition (GORT-5) is an individually administered measure of oral reading ability.

The GORT-5 is a norm-referenced, reliable test that yields valid results for oral reading rate, accuracy, fluency and comprehension, for individuals' age 6 years 0 months (6-0) through 23 years 11 months (23-11). The GORT-5 has two parallel forms (A and B), each of which contains 16 separate stories. Five comprehension questions follow each story.

The GORT-5 has four major purposes:

1. To help identify those students who are significantly behind their peers in oral reading and determine the degree of the problem.
2. To discover oral reading strengths and weaknesses within individual students.
3. To monitor students' progress in special intervention programs.
4. To be used in research studying reading in school-aged students.

GORT-5 Scales:

Rate	The Rate score is derived from the amount of time in seconds taken by a student to read a story aloud.
Accuracy	The Accuracy score is derived from the number of words the student pronounces correctly when reading the passage.
Fluency	The Fluency score is a combination of the student's Rate and Accuracy Scores.
Comprehension	The Comprehension score is the number of questions about the stories that the student answers correctly. The open-ended format ensures that the items are passage dependent.
Oral Reading Index (ORI)	The Oral Reading Index is a composite score formed by combining students' Fluency (i.e. Rate and Accuracy) and Comprehension scaled scores.

GORT-5 Score Interpretations:

Rate, Accuracy, Fluency and Comprehension are reported as scaled scores, percentiles, grade equivalent, age equivalents, and a qualitative descriptive term.

Scaled scores have a mean of 10 and a standard deviation of 3.

The Oral Reading Index is reported as a standard score based on a distribution having a mean of 100 and a standard deviation of 15.

THE HANDWRITING SPEED TEST

The Handwriting Speed Test is a standardised assessment of a child's speed of handwriting.

The authors provide the following category cut-offs as a measure of handwriting speed ability.

<i>Scaled Score</i>	<i>Category</i>
17-19	Superior Performance
14-16	Above Average Handwriting Speed
7-13	Average
4-6	Handwriting Speed Impaired
1-3	Handwriting Speed Significantly Impaired

WESCHLER INDIVIDUAL ACHIEVEMENT TEST – SECOND EDITION (WIAT-II)

WIAT-II Overview:

The WIAT-II Australian is a comprehensive yet flexible tool designed to assess academic achievement in children and adults.

The assessment is a rich source of information about an individual's achievement skills, learning disability diagnosis, special education placement, curriculum planning, and clinical appraisal.

The WIAT-II Australian has been normed versus the Australian population, has been adapted to Australian Language, and takes from 30 to 90 minutes to administer.

WIAT-II Subtests:

Table 1: WIAT-II Subtest Descriptions

READING	
Word Reading	Depending on the individual's age or grade, he or she identifies the letters of the alphabet, beginning and ending sounds of words, and rhyming words, or reads as quickly as possible from a list of words.
Reading Comprehension	The individual reads sentences and short passages and then answers questions about the main idea, specific details, or the order of events. He or she is also asked to make inferences, draw conclusions, or define unfamiliar words by using context clues.
Pseudoword Decoding	The individual uses their phonetic knowledge to sound nonsense or unfamiliar words.
MATHEMATICS	
Numerical Operations	The individual solves a word or stated problem requiring addition, subtraction, multiplication, and division using whole numbers, fractions, and decimals.
Maths Reasoning	The individual solves a word or stated problem requiring single or multiple steps related to time, money, measurement, geometry, probability, and reading and interpreting graphs.
WRITTEN LANGUAGE	
Spelling	The individual spells a target word based on its meaning as it is used in a sentence.
Written Expression	The individual writes words, sentences and either a paragraph or short essay in response to a topic. Writing is evaluated on organisation, vocabulary, theme development, and mechanics such as spelling and punctuation.
ORAL LANGUAGE	
Listening Comprehension	The individual listens to a word or sentence and matches it to a picture or looks at a picture and responds with the corresponding word.

**CLINICAL EVALUATIONS OF LANGUAGE FUNDAMENTALS
– FOURTH EDITION SCREENING TEST (CELF-4)**

CELF-4 Overview:

The CELF-4 Screening Test is an individually administered clinical tool designed to screen students ages 5 years 0 months through 21 years 11 months for language disorders. Specifically, this test is designed to assist in the identification of students who may need in-depth assessment of their language abilities. It is not designed to identify specific strengths or weaknesses in language, nor the degree of impairment of language abilities; neither is it designed to provide a diagnosis of language disability.

There are 47 items in the CELF-4 Screening Test. Items 1 through 28 are administered to students ages 5-8 years and consist of four different language tasks. Items 14 through 47 are administered to students ages 9-21 years and consist of five different language tasks.

Table 1: CELF-4 Screening Test Criterion Scores

Ages 5-8		Ages 9-21	
Age	Criterion Score	Age	Criterion Score
5:0-5:5	10	9:0-9:11	17
5:6-5:11	11	10:0-10:11	18
6:0-6:5	12	11:0-11:11	19
6:6-6:11	14	12:0-12:11	22
7:0-7:11	16	13:0-13:11	22
8:0-8:11	28	14:0-14:11	23
-	-	15:0-15:11	23
-	-	16:0-21:11	23

To determine whether a student should be referred for further language testing, the student's **Total Score** is compared to the appropriate age **Criterion Score**.

A score *At or Above* the **Criterion Score** for a student's age indicates that the student probably does not need further language testing. A student who scores *Below* the **Criterion Score** for his or her age may have a language disorder and should be referred for diagnostic testing.

**COMPREHENSIVE TEST OF PHONOLOGICAL PROCESSING
– SECOND EDITION (CTOPP-II)**

CTOPP-II Overview:

The CTOPP-II is an individually administered assessment battery that measures the aspects of phonological awareness, phonological memory, and rapid naming.

A deficit in one or more of these kinds of phonological processing abilities is viewed as the most common cause of learning disabilities in general, and of reading disabilities in particular.

The CTOPP-II can be used for individuals aged 5 years 0 months to 24 years 11 months.

CTOPP-II Subtests:

Table 1: CTOPP-II Subtests

Elision (EL)	This 34-item subtest measures the extent to which an individual can say a word, then say what is left after dropping out designated sounds.
Blending Words (BW)	This 33-item subtest measures an individual's ability to combine sounds to form words.
Phoneme Isolation (PI)	This 32-item subtest measures the extent to which an individual can isolate different phonemes within individual words.
Memory for Digits (MD)	This 28-item subtest measures the extent to which an individual can repeat a series of numbers ranging in length from two to eight digits.
Nonword Repetition (NR)	This 30-item subtest measures an individual's ability to repeat nonwords that range in length from 3 to 15 seconds.
Rapid Digit Naming (RD)	This 36-item subtest measures the speed with which an individual can name the numbers on two pages.
Rapid Letter Naming (RL)	This 36-item subtest measures the speed with which an individual can name the letters on two pages.

The six subtests from the CTOPP-II are combined to form three Composites that provide information about the three key areas of phonological processing: Phonological Awareness, Phonological Memory and Rapid Naming.

Table 2: CTOPP-II Composites

Phonological Awareness (PACS)	Measures an individual's phonological awareness – awareness of and access to the phonological structure of oral language.
Phonological Memory (PMCS)	Measures the examinee's ability to code information phonologically for temporary storage in working memory or short-term memory.
Rapid Naming (RNCS)	Measures the examinee's efficient retrieval or phonological information from long-term or permanent memory, as well as the examinee's ability to execute a sequence of operations quickly and repeatedly.

A deficit in **Phonological Awareness** is viewed as the hallmark of reading disability or dyslexia. Poor phonological awareness is associated with poor reading for both individuals whose poor reading levels are discrepant from their IQs and for individuals whose poor reading levels are consistent with their IQs.

A deficit in **Phonological Memory** does not inevitably lead to poor reading of familiar material but is more likely to impair decoding of new words, particularly words that are long enough to decode bit by bit, as a means of storing intermediate sounds. It is likely to impair both listening and reading comprehension for more complex sentences

Individuals who score poorly in **Rapid Naming** commonly have problems with reading fluency.

ABAS-II Overview:

The Adaptive Behaviour Assessment System – Second Edition provides a comprehensive, norm-referenced assessment of adaptive skills for individuals ages birth to 89 years. The ABAS-II may be used to assess an individual's adaptive skills for diagnosis and classification of disabilities and disorders, identification of strengths and limitations, and to document and monitor an individual's progress over time. The comprehensive range of specific adaptive skills and broad adaptive domains measured by the ABAS-II correspond to the specifications identified by the American Association of Mental Retardation (AAMR; 1992, 2002b) and the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition Text Revision (DSM-IV-TR; American Psychiatric Association, 2000).

The ABAS-II consists of 5 rating forms, which can be completed independently by a respondent or may be read aloud to a respondent who has limited reading skills. Each rating form is easy to complete and score, requiring approximately 20 minutes to complete and 5-10 minutes to hand score.

Respondents read and respond to all items and rate the extent to which the individual performs the adaptive skills when needed. The rating scale for the items allows respondents to indicate if the individual is able to independently perform an activity and, if so, how frequent he or she performs the activity when it is needed.; **0** (*Is not able*), **1** (*Never or Almost Never When Needed*), **2** (*Sometimes When Needed*), or **3** (*Always or Almost Always When Needed*).

Although it is possible to assess the adaptive skills of an individual with a single rating form, the use of multiple rating forms is recommended to provide a comprehensive assessment across a variety of settings.

Significant limitations in adaptive behaviour are defined as performance at least 2 Standard Deviations below the mean on (a) the Conceptual, Social or Practical Domain, or (b) an overall score on a standardised measure that assesses these three adaptive domains (e.g. GAC).

Skill Areas for Teacher, Parent and Adult Forms

Communication	Speech, language, and listening skills needed for communication with other people, including vocabulary, responding to questions, conversation skills etc
Community Use	Skills needed for functioning in the community, including use of community resources, shopping skills, getting around in the community etc
Functional Academics	Basic reading, writing, mathematics and other academic skills needed for daily, independent functioning, including telling time, measurement, writing notes and letters etc
School/Home Living	Skills needed for basic care of a home or living setting (or for the Teacher Form, school and classroom setting), including cleaning, straightening, property maintenance and repairs, food preparation, performing chores etc
Health and Safety	Skills needed for protection of health and to respond to illness and injury, including following safety rules, using medicines, showing caution etc
Leisure	Skills needed for engaging in and planning leisure and recreational activities, including playing with others, engaging in recreation at home, following rules in games etc
Self-Care	Skills needed for personal care including eating, dressing, bathing, toileting, grooming, hygiene etc
Self-Direction	Skills needed for independence, responsibility and self-control, including starting and completing tasks, keeping a schedule, following time limits, following directions, making choices etc
Social	Skills needed to interact socially and get along with other people, including having friends, showing and recognising emotions, assisting others, using manners etc
Work	Skills needed for successful functioning and holding a part or full-time job in a work setting, including completing work tasks, working with supervisors, and following a work schedule

Composite Score Scales

The **Conceptual Domain Composite** score is derived from the sum of scaled scores from the *Communication*, *Functional Academics* and *Self-Direction* Skill Areas. Conceptual skills include receptive and expressive language, reading and writing, money concepts and self-direction.

The **Social Domain Composite** score is derived from the sum of scaled scores from the *Social* and *Leisure* Skill Areas. Social skills include interpersonal relationships, responsibility, self-esteem, gullibility, naiveté, following rules, obeying laws and avoiding victimisation.

The **Practical Domain Composite** score is derived from the sum of scaled scores from the *Self-Care*, *Home/School Living*, *Community Use*, *Health and Safety* and *Work* Skill Areas. Practical skills include basic maintenance activities of daily living (e.g., eating, mobility, toileting, dressing), instrumental activities of daily living (e.g., meal preparation, housekeeping, transportation, taking medications, money management, telephone use) together with occupational skills and maintenance of safe environments.

The **General Ability Composite** (GAC) score is derived from the sum of scaled scores from seven, nine or ten skill areas, depending on the age of the individual and the type of rating form. The GAC represents a comprehensive and global estimate of an individual's adaptive functioning. The GAC describes the degree to which an individual's adaptive skills generally compare to the adaptive skills of other individual's within the same age group.

Adaptive Behaviour Rater Forms:**(1) Adult Form (Ages 16-89)**

The Adult Form is a comprehensive, diagnostic measure of the adaptive skills that have primary relevance for an adult's functioning in home and community settings.

The Adult Form may be completed by the individual being evaluated for a self-rating if his or his functional skills are judged to be adequate for providing valid responses to the items. Family members, supervisors, or other respondents who are familiar with the individual in his or his various environments can also complete this form.

Two separate norms tables are provided for the Adult Form: Adult Form, Self Report and Adult Form, rated by Others. The Adult Form is used for individuals ages 16-89 years and includes 239 items, with 20 to 27 items per skill area.

ADULT PSYCHPROFILER (APP)

APP Outline:

The APP utilises two separate screening forms; the Self-report Form (SRF: 177 items) and Observer-report Form (ORF: 177 items) for the simultaneous screening of the 17 most prevalent disorders in adults aged 18 years and above (see next page for list of disorders included).

The APP comprises screening criteria that closely resemble the diagnostic criteria of the *Diagnostic and Statistical Manual of Mental Disorders–Fifth Edition* (DSM-5: American Psychiatric Association: APA, 2013).

All items of the APP require responses to be made on a six-point scale pertaining to the perceived frequency of the behaviour (ie., Never, Rarely, Sometimes, Regularly, Often, or Very Often).

When calculating disorder screening scores, the items are coded as follows: Never = 0, Rarely = 0, Sometimes = 0, Regularly = 1, Often = 1, and Very Often = 1. These values were chosen because although many people with and without disorders may exhibit similar behaviours, it is the frequency of the behaviour that determines whether it is of clinical significance.

A small number of exceptions to these scoring rules apply where some of the behaviours (e.g., fighting with a weapon, stealing) are considered to be of sufficient severity that 'Sometimes' is also awarded a score of 1.

Therefore, the summation of the items within each disorder produces a screening score for that disorder, which if exceeding the screening cutoff score, designates that the individual has been awarded a *positive screen* for that disorder.

In order to ensure its validity and reliability, the first version of the *psychProfiler* was subjected to a series of rigorous psychometric analyses over a number of years. This process has involved validation against a large mainstream sample (n>1000) as well as clinical calibration against individuals with formal diagnoses. These analyses found the *psychProfiler* to be a highly reliable and valid screening instrument.

The APP is primarily administered in order to provide an objective indication of whether the individual exhibits behaviours characteristic of a suspected disorder, possible comorbid disorders, and issues pertaining to differential diagnosis.

For further information regarding the APP, please visit www.psychprofiler.com or contact Dr Shane Langsford on (08) 9388 8044.

Please note that any indication of a positive screen on the APP does not constitute a formal diagnosis. A positive screen merely indicates that the individual has met sufficient criteria for a disorder to warrant further investigation.

Disorders included in the APP:

Anxiety Disorders:

- ★ Generalised Anxiety Disorder
- ★ Panic Disorder
- ★ Specific Phobia

Attention-Deficit/Hyperactivity Disorder:

- ★ Attention-Deficit/Hyperactivity Disorder

Autism Spectrum Disorder:

- ★ Autism Spectrum Disorder

Bipolar and Related Disorders:

- ★ Bipolar Disorder

Communication Disorders:

- ★ Language Disorder
- ★ Speech Sound Disorder

Depressive Disorders:

- ★ Persistent Depressive Disorder
- ★ Major Depressive Disorder

Feeding and Eating Disorders:

- ★ Anorexia Nervosa
- ★ Bulimia Nervosa

Obsessive-Compulsive and Related Disorders:

- ★ Obsessive-Compulsive Disorder

Personality Disorders:

- ★ Antisocial Personality Disorder

Schizophrenia Spectrum and Other Psychotic Disorders:

- ★ Schizophrenia

Specific Learning Disorders:

- ★ Specific Learning Disorder

Trauma and Stressor-Related Disorders:

- ★ Posttraumatic Stress Disorder

Please note that any indication of a positive screen on the APP does not constitute a formal diagnosis. A positive screen merely indicates that the individual has met sufficient criteria for a disorder to warrant further investigation.

Please refer to the APP Report(s) for the individual behaviours which were responsible for the positive screens elicited.

CONNERS' ADULT ADHD RATING SCALE (CAARS)

CAARS Overview:

(1) The Conners' Adult ADHD Rating Scale – Self Report

The Conners' Adult ADHD Rating Scale (CAARS-SR) is a reliable and valid self-report instrument designed to assess symptoms and behaviours related to ADHD. Individuals are required to complete 66 items pertaining to their perception of their recent behaviour.

(2) The Conners' Adult ADHD Rating Scale – Observer Report

The Conners' Adult ADHD Rating Scale (CAARS-OR) is a reliable and valid instrument designed to assess symptoms and behaviours related to ADHD. Respondents are required to complete 66 items pertaining to their perception of the respective individual's recent behaviour. The 66 items combine to form 8 subscales, which are the same as those in the CAARS-SR.

Conners Subscales:

CAARS: Subscales

Conners' Subscales	Tendencies of High Scorers
Inattention/Memory Problems	Learn more slowly, have problems organising and completing tasks, and have trouble concentrating.
Hyperactivity/Restlessness	Have difficulty working at the same task for very long, and feel more restlessness and "on the go" than others.
Impulsivity/Emotional Liability	Engage in more impulsive acts than others, moods change quickly and often, and are more easily angered and irritated by people.
Problems with Self-Concept	Have poor social relationships, low self-esteem, and low self-confidence.
DSM-IV Symptoms: Inattentive	Have tendencies associated with the Inattentive Subtype of ADHD, as described in the DSM-IV.
DSM-IV Hyperactive-Impulsive Symptoms:	Have tendencies associated with the Hyperactive-Impulsive Subtype of ADHD, as described in the DSM-IV.
DSM-IV ADHD Symptoms: Total	Meet the criteria for ADHD, as described in the DSM-IV.
ADHD INDEX	Have clinically significant levels of ADHD symptoms compared to adults with a low score. High scores are useful for differentiating clinical ADHD individuals from non-clinical individuals.

Interpretive Guidelines:

Interpretive Guidelines for T-Scores and Percentiles

T-Score	Percentile	Interpretive Guidelines
<30	<2	Very much below average
30-34	2-5	Much below average
35-39	6-15	Below average
40-44	16-26	Slightly below average
45-55	27-73	Average
56-60	74-85	Slightly above average
61-65	86-94	Above average
66-70	95-98	Much above average
>70	>98	Very much above average

SOCIO-EMOTIONAL QUESTIONNAIRE (SEQ)

The Socio-Emotional Questionnaire (SEQ: Langsford, 2011) is a 69-item self-report instrument for measuring Anxiety and Depression in individuals aged 15 years and older.

Individuals are asked to indicate their response to each statement that best describes the way they have been feeling during the past four weeks.

The results provide an indication of the likelihood of Anxiety and/or Depression, and also the frequency and severity of the respective symptomology.

Please note: The SEQ is a newly developed and at present invalidated instrument, therefore, although the results are considered to be accurate, they require further validation by an appropriate professional.

Section A: Anxiety:

This section of the Socio-Emotional Questionnaire contains 34 anxiety related items responded to on a 4-point Likert scale ranging from 0 “*Never or Rarely*” to 3 “*Very Often*”, therefore, the maximum total score for an individual is 102.

Furthermore, two supplementary yes/no questions pertaining to the caveats provided in the DSM-IV are also included. These questions relate to the length of symptoms, and the adverse affect of the symptoms on the individuals overall functioning.

The author provide the following category cut-offs as a measure of severity of anxiety:

<i>Score</i>	<i>Category</i>
0-14	No Anxiety
15-24	Mild Anxiety
25-39	Moderate Anxiety
40+	Severe Anxiety

Section B: Depression:

This section of the SEQ contains 35 depression related items also responded to on a 4-point Likert scale ranging from 0 “*Never or Rarely*” to 3 “*Very Often*”, therefore, the maximum total score for an individual is 105.

Furthermore, two supplementary yes/no questions pertaining to the caveats provided in DSM-IV-TR are also included. These questions relate to the length of symptoms, and the adverse affect of the symptoms on the individuals overall functioning.

The author provide the following category cut-offs as a measure of severity of depression:

<i>Score</i>	<i>Category</i>
0-14	No Depression
15-24	Mild Depression
25-39	Moderate Depression
40+	Severe Depression

SELF-DIRECTED SEARCH (SDS)

SDS Overview:

Realistic occupations (R) include skilled trades, technical and some service occupations.

Investigative occupations (I) include scientific and some technical occupations.

Artistic occupations (A) include artistic, musical and literary occupations.

Social occupations (S) include educational and social welfare occupations.

Enterprising occupations (E) include managerial and sales occupations.

Conventional occupations (C) include office and clerical occupations.

Realistic Occupations

The *Realistic* (R) type likes realistic jobs such as biomedical engineer, motor mechanic, cake decorator, farmer, electrician, screen printer, and tradesperson. This type has mechanical abilities, but may lack social skills and is described as:

Conforming	Materialistic	Realistic
Dogmatic	Natural	Reserved
Genuine	Normal	Robust
Hard-headed	Persistent	Self-effacing
Inflexible	Practical	Uninsightful

Realistic occupations (R) include skilled trades, technical and some service occupations.

Investigative Occupations

The *Investigative* (I) type likes investigative (scientific) jobs such as biologist, chemistry technician, physicist, anthropologist, botanist, and surgeon. This type has mathematical and scientific ability, but often lacks leadership ability, and is described as:

Analytical	Independent	Radical
Cautious	Intellectual	Rational
Complicated	Introspective	Reserved
Critical	Pessimistic	Retiring
Curious	Precise	Unassuming

Investigative occupations (I) include scientific and some technical occupations.

Artistic Occupations

The *Artistic* (A) type likes artistic jobs such as composer, musician, stage director, writer, interior designer, and actor. This type has artistic abilities: writing, musical or artistic, but often lacks clerical skills, and is described as:

Complicated	Imaginative	Intuitive
Disorderly	Impractical	Nonconforming
Emotional	Impulsive	Open
Expressive	Independent	Original
Idealistic	Introspective	Sensitive

Artistic occupations (A) include artistic, musical and literary occupations.

Social Occupations

The *Social* (S) type likes social jobs such as teacher, religious worker, counsellor, employment officer, psychiatric nurse, and sociologist. This type has social skills and talents, but often lacks mechanical and scientific ability, and is described as:

Agreeable	Helpful	Responsible
Cooperative	Idealistic	Sociable
Empathic	Kind	Tactful
Friendly	Patient	Understanding
Generous	Persuasive	Warm

Social occupations (S) include educational and social welfare occupations.

Enterprising Occupations

The *Enterprising* (E) type likes enterprising jobs such as salesperson, finance manager, lawyer, radio or TV announcer, sports promoter, and buyer. This type has leadership and speaking abilities but often lacks scientific ability, and is described as:

Acquisitive	Energetic	Forceful
Adventurous	Enthusiastic	Optimistic
Ambitious	Excitement-seeking	Resourceful
Assertive	Exhibitionistic	Self-confident
Domineering	Extroverted	Sociable

Enterprising occupations (E) include managerial and sales occupations.

Conventional Occupations

The *Conventional* (C) type likes conventional jobs such as book-keeper, bank teller, stenographer, computer operator, cost accountant and postal clerk. This type has clerical and arithmetic ability, but often lacks artistic abilities, and is described as:

Careful	Inflexible	Persistent
Conforming	Inhibited	Practical
Conscientious	Methodical	Thorough
Dogmatic	Obedient	Thrifty
Efficient	Orderly	Unimaginative

Conventional occupations (C) include office and clerical occupations.