COGNITIVE ASSESSMENT PLANNER TOOLKIT

THE EDUCATION PSYCHOLOGIST

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PSYCHOLOGY

hello!

I'm thrilled to introduce myself and share a little bit about my journey as a supervisor, as well as offer a resource that I believe will enhance your assessment practice with children.

With over 20 years of experience working with children, particularly those with ADHD, autism, and learning difficulties, I'm passionate about helping fellow psychologists grow in their clinical skills and confidence.

This resource dives into key aspects of CHC theory, the DD-C Model and XBASS that you can use in your assessments of children and adolescents. My goal is to provide you with practical, actionable insights that you can immediately apply to your work.

In my supervision sessions, I focus on clinical skills like assessments and diagnoses, but also on navigating the challenges that come with the job, from tricky cases to self-care and career development. I truly believe that with the right support and resources, we can thrive in this profession and make a meaningful difference in the lives of the children and families we serve.

I hope you find this resource helpful, and I look forward to connecting with you further in your professional journey.

Find out more about being my supervisee here.

you've got this,
Leanne

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CHC-BASED ASSESSMENT PLANNER

A structured tool to support comprehensive cognitive assessment using the Cattell-Horn-Carroll (CHC) model

CHC Ability Overview

Broad and narrow abilities explained

Broad CHC Ability	Description	Why It Matters
Gc – Crystallised Intelligence	Knowledge acquired through experience and language	Academic learning, vocabulary, verbal comprehension
Gf – Fluid Reasoning	Problem-solving in novel situations	Math reasoning, abstract thought, flexible thinking
Gv – Visual Processing	Spatial orientation, mental rotation, image manipulation	Reading fluency, visual-motor tasks, geometry
Ga – Auditory Processing	Processing sounds, phonological awareness	Phonemic decoding, listening comprehension
Gsm – Short-Term Memory	Holding and manipulating information in the mind	Following instructions, mental math, comprehension
Glr – Long-Term Retrieval	Storage and retrieval of information over time	Vocabulary development, learning efficiency
Gs – Processing Speed	Speed and accuracy of simple cognitive tasks	Fluency, timed tasks, handwriting
Gq – Quantitative Knowledge	Acquired math knowledge	Calculation, number sense
Grw – Reading & Writing Ability	Acquired literacy knowledge	Decoding, spelling, composition

CHC TEST MAPPING MATRIX

Which common subtests map to which CHC abilities

CHC Ability	WISC-V	DAS-II	SB-5	Other Tools
Gc	Vocabulary, Similarities	Verbal Similarities	Vocabulary, Information	KABC-II Knowledge subtests
Gf	Matrix Reasoning, Figure Weights	Matrices, Sequential/ Quant Reasoning	Matrix Reasoning	KABC-II Story Completion, Pattern Reasoning
Gv	Block Design, Visual Puzzles	Pattern Construction, Recall of Designs	Pattern Analysis	TVPS, Beery VMI
Ga	– (use CTOPP-2, WJ-IV)	–	–	CTOPP-2, WJ-IV Sound Blending, Auditory Analysis
Gsm	Digit Span, Letter-Number Seq.	Recall of Digits, Working Memory	Memory for Digits	WJ-IV Numbers Reversed, WRAML-2
Glr	– (often supplement)	Recall of Objects	Story Recall, Verbal Analogies	WJ-IV Retrieval Fluency, RAN
Gs	Coding, Symbol Search	Rapid Naming, Speeded Naming	Symbol Search, Coding	WJ-IV Decision Speed, Visual Matching
Gq	–	Number Concepts	Quantitative Reasoning	WJ-IV Applied Problems
Grw	–	Spelling, Word Reading	–	WIAT-III, WJ-IV Reading and Writing

Note: Some CHC domains (like Ga, Glr) are **not well-covered** in major IQ batteries and often require supplemental tools like CTOPP-2, WJ-IV COG, or WRAML-2.

CHC TEST BATTERY PLANNING TEMPLATE

Use this template to map your selected subtests/tools across CHC domains.

Child's Name: _____

Referral Focus / Hypothesis: _____

Assessment Tools Being Used: _____

CHC Ability	Tool(s) / Subtest(s)	Notes (e.g., age fit, interpretation considerations)
Gc		
Gf		
Gv		
Ga		
Gsm		
Glr		
Gs		
Gq		
Grw		

REFLECTION PROMPTS:

- Are there any CHC domains **underrepresented** in this battery?

- Are selected tools **appropriate** for age, language, and ability level?

- Are you using **supplemental tools** for poorly represented areas (e.g., Ga, Glr)?

- Does this battery align with the **referral question and hypothesis?**

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CHC DOMAIN COVERAGE COMPARISON TABLE

Choosing assessment tools based on CHC coverage

Test Battery	Gc	Gf	Gv	Ga	Gs	Gsm	Glr	Notes / Strengths
WISC-V	✅	✅	✅	❌	✅	✅	❌	Strong in reasoning, working memory, and processing speed. Limited Ga & Glr coverage.
DAS-II	✅	✅	✅	❌	✅	✅	✅	Balanced CHC coverage with some Ga. Useful from preschool to adolescence.
SB-5	✅	✅	✅	❌	✅	✅	✅	Broad cognitive assessment with strengths in Glr and composite scoring.
KABC-II	✅	✅	✅	✅	✅	✅	✅	Excellent CHC breadth with minimal content bias; strong Ga and Glr coverage.
WJ-IV COG	✅	✅	✅	✅	✅	✅	✅	Best CHC-mapped tool. Modular and comprehensive. Excellent for SLD assessment.
CTOPP-2	❌	❌	❌	✅	✅	✅	✅	Specifically targets Ga and some Glr (phonological processing, RAN).
WRAML-2	❌	❌	❌	❌	✅	✅	✅	Strong memory coverage(Gsm + Glr). Complements cognitive batteries.
TVPS / VMI	❌	❌	✅	❌	❌	❌	❌	Use as supplements for Gv where needed.

INTERPRETATION TIPS:

- **If you use WISC-V** → pair with CTOPP-2 and WRAML-2 to fill Ga + Glr gaps

- **If you use DAS-II** → add CTOPP-2 for auditory processing (Ga)
- **WJ-IV COG** → best single battery for full CHC coverage; ideal for SLD assessment

- **KABC-II** → a strong standalone if you want cultural fairness and broad CHC reach

- **Budget-conscious?** → Combine WISC-V + CTOPP-2 + WRAML-2 for solid coverage

STRATEGIC BUYING SUGGESTIONS:

If You Own...	Consider Adding...	Why
WISC-V	CTOPP-2, WRAML-2	Covers Ga and Glr gaps
DAS-II	CTOPP-2	Strengthens Ga; complements Glr
SB-5	CTOPP-2 or WJ-IV Tests of Achievement	Adds stronger Ga and Glr specificity
WJ-IV COG	WRAML-2 (optional)	Enhances memory detail for specific referrals
CTOPP-2 only	WISC-V or WJ-IV COG	Core reasoning and Gc/Gf coverage missing
KABC-II	None needed (for CHC coverage)	Good standalone CHC battery

CHC INTERPRETATION & SUPPORT GUIDE

A practical tool for understanding CHC scores and linking them to learning and support planning

Understanding CHC Scores in Context

CHC (Cattell-Horn-Carroll) theory provides a powerful framework for interpreting cognitive assessment results in a way that links directly to everyday functioning and academic performance. Rather than viewing test scores in isolation, this approach helps psychologists understand how a child thinks, learns, and interacts with the world — and how to design supports that match their cognitive profile.

This guide summarises the core CHC broad abilities, what they reflect in real-life learning, what challenges might arise when a child demonstrates relative weaknesses, and the types of supports or accommodations that can reduce barriers to success. Use it as a bridge between assessment and intervention — and as a language framework for explaining results to families and educators.

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GSM – SHORT-TERM WORKING MEMORY

What it tells us:

- The ability to hold and manipulate information for brief periods (e.g., following multi-step instructions, mental arithmetic, sentence repetition).

- Includes verbal working memory and visual-spatial working memory.

If low:

- Difficulty with multi-step directions, learning new information, and problem-solving on the spot.

- May struggle with reading comprehension and math reasoning where information must be held in mind.

Supports:

- Break instructions into single steps

- Use visual aids or cue cards

- Repeat/rephrase directions frequently

- Allow written instructions to reduce working memory load .

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GS – PROCESSING SPEED

What it tells us:

- The speed and accuracy of simple cognitive operations under time pressure (e.g., copying symbols, sorting, rapid visual scanning).

If low:

- Difficulty with timed tasks, slow completion of classwork or tests

- May impact fluency in reading, writing, and math

Supports:

- Extra time on assessments and assignments

- Avoid penalising speed in grading

- Allow use of technology (e.g., typing instead of handwriting)

- Reduce emphasis on speed-based activities

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GF – FLUID REASONING

What it tells us:

- The ability to reason and solve novel problems without relying on prior knowledge (e.g., pattern recognition, problem-solving, logical thinking).

If low:

- Difficulty with higher-order thinking, flexible problem-solving, generalising concepts

- May struggle in math (particularly with unfamiliar problems) and science

Supports:

- Teach reasoning strategies explicitly

- Use visual models and step-by-step prompts

- Provide worked examples

- Reinforce reasoning with real-life applications

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GC – CRYSTALLISED INTELLIGENCE

What it tells us:

- Knowledge gained from experience, learning, and language — vocabulary, verbal reasoning, general information.

If low:

- Difficulty expressing ideas, understanding classroom discussion, answering verbally

- Impacts reading comprehension, writing, oral communication

Supports:

- Pre-teach vocabulary

- Provide visual supports for abstract ideas

- Allow extra time for verbal responses

- Use graphic organisers for writing

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GV – VISUAL PROCESSING

What it tells us:

- The ability to generate, perceive, and manipulate visual images (e.g., puzzles, visual patterns, copying complex figures).

If low:

- Difficulty with geometry, spatial concepts, organising written work on a page

- May have trouble interpreting graphs, diagrams, or maps

Supports:

- Use verbal instructions to complement visuals

- Provide lined/graph paper for spatial organisation

- Teach visual strategies explicitly

- Avoid tasks requiring complex spatial organisation under time pressure

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GA – AUDITORY PROCESSING

What it tells us:

- Ability to analyse and process sound-based information — includes phonological awareness, auditory discrimination, and memory for sequences.

If low:

- Struggles with phonics, decoding, spelling, oral directions

- May impact reading fluency and comprehension

Supports:

- Provide phonemic awareness intervention

- Use visual cues and hands-on phonics instruction

- Minimise background noise

- Break spoken instructions into parts

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GLR – LONG-TERM RETRIEVAL

What it tells us:

- Ability to store and retrieve information, especially with ease and fluency (e.g., word recall, idea generation, fluency tasks).

If low:

- Word-finding issues, difficulty recalling learned information under pressure

- May impact writing fluency, oral presentations, test-taking

Supports:

- Use retrieval practice and repetition

- Provide word banks, writing outlines

- Reduce memory load by chunking content

- Allow verbal rehearsal strategies

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LINKING CHC WEAKNESSES TO ACADEMIC CHALLENGES

Cognitive abilities assessed within the CHC model are foundational to classroom learning. When a child shows difficulties in one or more areas, it can directly affect how they engage with academic tasks. Here's how common CHC weaknesses may present in school:

CHC Area	Academic Challenges
Gsm – Short-Term Memory	Difficulty following multi-step instructions, holding numbers in mind for mental math, understanding long sentences in reading.
Gs – Processing Speed	Slowness on written tasks, trouble completing tests in time, reduced fluency in reading, writing, or math.
Gf – Fluid Reasoning	Difficulty solving novel problems, weak math reasoning, struggles with scientific inquiry or generalising learned concepts.
Gc – Crystallised Intelligence	Trouble understanding new vocabulary, weak reading comprehension, difficulty expressing ideas in writing or discussion.
Gv – Visual Processing	Challenges with spatial math, copying from the board, interpreting charts or diagrams, disorganised written work.
Ga – Auditory Processing	Struggles with phonics, decoding unfamiliar words, spelling, and remembering oral instructions.
Glr – Long-Term Retrieval	Difficulty recalling facts on demand, retrieving vocabulary, generating ideas in writing, or remembering multi-step processes.

CHC WEAKNESSES: EXPANDED ACADEMIC IMPACTS & SUPPORT STRATEGIES

Gsm – Short-Term Working Memory

Impacts on Learning:

- Reading: Difficulty tracking information across sentences; comprehension breakdowns
- Writing: Trouble holding and organising ideas while writing
- Math: Difficulty holding multi-step problems in mind, mental calculations, and word problems

Targeted Supports:

- Chunk tasks into steps with visual/physical aids
- Use math working memory scaffolds (e.g., worked examples, number lines)
- Provide planning templates for writing
- Use read-aloud and highlight keywords in reading passages
- Teach "self-talk" or verbal rehearsal to keep steps in mind

CHC WEAKNESSES: EXPANDED ACADEMIC IMPACTS & SUPPORT STRATEGIES

Gs – Processing Speed

Impacts on Learning:

- Reading: Slow decoding, reduced fluency, fatigue with long texts
- Writing: Takes longer to generate, write, and revise text
- Math: Struggles with speeded fact retrieval, timed drills, keeping up in class

Targeted Supports:

- Allow untimed tests and extra time for in-class tasks
- Focus on mastery over fluency for math facts
- Allow use of fact charts or calculators in learning phase
- Minimise copying; provide digital or pre-filled worksheets
- Support writing with speech-to-text or typing accommodations

CHC WEAKNESSES: EXPANDED ACADEMIC IMPACTS & SUPPORT STRATEGIES

Gf – Fluid Reasoning

Impacts on Learning:

- Reading: Difficulty drawing inferences, interpreting figurative language or abstract content
- Writing: Trouble organising arguments or synthesising ideas
- Math: Weak problem-solving, struggles with applying math concepts to novel problems

Targeted Supports:

- Model reasoning strategies and multiple approaches
- Scaffold open-ended writing tasks with outlines and prompts
- Use concrete materials to teach math problem-solving
- Give repeated exposure to new task types in reading and math
- Use guided discussion to build inferencing in reading

CHC WEAKNESSES: EXPANDED ACADEMIC IMPACTS & SUPPORT STRATEGIES

Gc – Crystallised Intelligence

Impacts on Learning:

- Reading: Poor vocabulary, struggles with comprehension and content-heavy texts
- Writing: Limited language expression, difficulties elaborating or structuring ideas
- Math: Difficulty with word problem language, following verbal instruction

Targeted Supports:

- Pre-teach academic and content vocabulary
- Use visual definitions, word walls, and glossaries
- Allow sentence starters and visual writing scaffolds
- Pair abstract math vocabulary with examples and visuals
- Supplement reading with guided discussion and structured summaries

CHC WEAKNESSES: EXPANDED ACADEMIC IMPACTS & SUPPORT STRATEGIES

Gv – Visual Processing

Impacts on Learning:

- Reading: Difficulties tracking text or interpreting visual content (e.g., graphs, diagrams)
- Writing: Trouble with spatial layout (e.g., paragraph structure, handwriting)
- Math: Misaligning columns, poor spatial awareness in geometry or visual math concepts

Targeted Supports:

- Provide grid or lined paper for math and writing
- Minimise copying; use printouts for visual tasks
- Teach visual strategies for geometry and place value
- Offer models for layout in written work (e.g., sentence strips)
- Use technology for layout-heavy tasks (e.g., typing, drag-and-drop)

CHC WEAKNESSES: EXPANDED ACADEMIC IMPACTS & SUPPORT STRATEGIES

Ga – Auditory Processing

Impacts on Learning:

- Reading: Weak phonological awareness, decoding difficulties, spelling errors
- Writing: Struggles with sound-to-symbol conversion, poor grammar or syntax
- Math: Difficulty with oral instructions or retaining verbal problem-solving steps

Targeted Supports:

- Deliver instruction with visuals and written directions
- Use phonics-based, multi-sensory reading interventions
- Provide access to speech-to-text for writing
- Repeat math instructions and check understanding step-by-step
- Offer dictation tools or record-and-playback support

CHC WEAKNESSES: EXPANDED ACADEMIC IMPACTS & SUPPORT STRATEGIES

Glr – Long-Term Retrieval

Impacts on Learning:

- Reading: Word retrieval issues affecting fluency; limited access to vocabulary
- Writing: Poor idea generation, difficulty retrieving spelling and content knowledge
- Math: Difficulty recalling learned procedures, math facts, or vocabulary on demand

Targeted Supports:

- Use retrieval practice techniques (e.g., low-stakes quizzes, spaced practice)
- Build fluency gradually with repeated exposure
- Use word/prompt banks for writing and math tasks
- Teach retrieval cues (e.g., keyword triggers, story mnemonics)
- Provide review time before output-heavy tasks (e.g., tests, writing)

PRIMARY SOURCE:

Flanagan, D. P., Alfonso, V. C., & Ortiz, S. O. (Eds.) (2022).

Contemporary Intellectual Assessment: Theories, Tests, and Issues (4th Edition) – specifically Chapter 27: Cross-Battery Assessment and the Cross-Battery Assessment Software System (X-BASS).

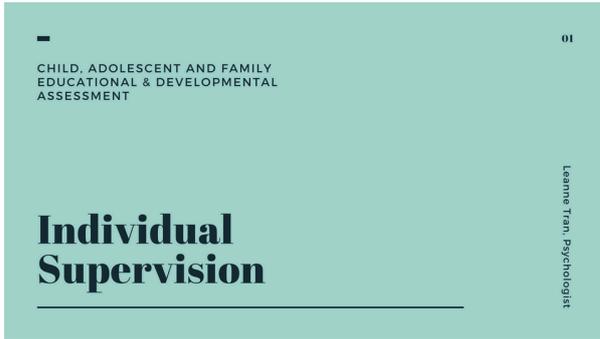— This source provided core insight into:

- CHC theory and definitions
- Patterns of strengths/weaknesses
- Educational implications by domain
- Tool-to-domain mapping (e.g., WISC-V, WJ-IV, CTOPP-2)

SUPPLEMENTARY SOURCES & CLINICAL PRACTICE LITERATURE:

- Flanagan, D. P., & McDonough, E. M. (2018). The Cattell–Horn–Carroll Theory of Cognitive Abilities: Working Memory and Academic Learning.

- McCloskey, G., Perkins, L. A., & Diviner, C. (2009). Essentials of Executive Functions Assessment.

- Dehn, M. J. (2014). Essentials of Processing Assessment (2nd Ed.) — especially for Glr, Ga, and intervention recommendations.

- Sattler, J. M. (2018). Foundations of Behavioral, Social, and Clinical Assessment of Children — for application to school-based practice.

- NASP Practice Model and RTI/MTSS-aligned supports from school psychology frameworks.

FOR MORE SUPPORT

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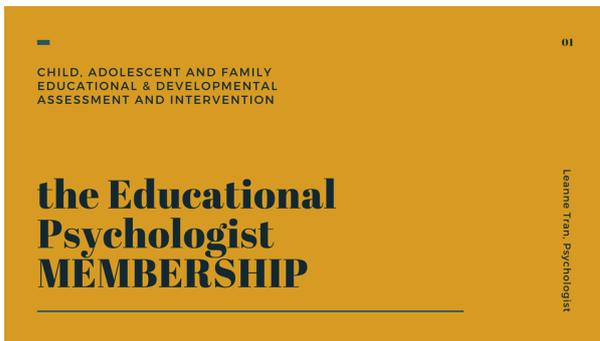
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All my knowledge and experience rolled into one - through monthly group supervision and CPD.

INCLUDES:

- Monthly group supervision
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