

# Crystallized Intelligence- Gc

## (General Knowledge)

A person's level of knowledge obtained through life experiences, school, and work



Characteristics	Academic Difficulties
<ul style="list-style-type: none"> <li>● Difficulty acquiring vocabulary and knowledge</li> <li>● Difficulty comprehending written and spoken language</li> <li>● Difficulty with fact based/Informational questions</li> <li>● Use of simplistic sentence structures and lack of variety in language</li> <li>● Difficulties with synonyms, antonyms and analogies</li> <li>● Difficulty identifying similarities and differences</li> <li>● Difficulty using context clues</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Reading</b> <ul style="list-style-type: none"> <li>○ Accessing phonological skills in order to decode</li> <li>○ Paraphrasing</li> </ul> </li> <li>● <b>Math</b> <ul style="list-style-type: none"> <li>○ Memorizing math facts</li> <li>○ Recalling math facts</li> </ul> </li> <li>● <b>Writing</b> <ul style="list-style-type: none"> <li>○ Retrieving vocabulary</li> <li>○ Note-taking</li> <li>○ Generating Ideas</li> <li>○ Remembering mechanics of writing</li> </ul> </li> </ul>
Instructional Adaptations (Accom.)	Instructional Interventions:
<ul style="list-style-type: none"> <li>● Provide resources to help students participate in class discussion (ex. Graphic Organizers, Padlet)</li> <li>● Provide prompts to enhance written expression</li> <li>● Provide preferential seating to enhance monitoring of comprehension</li> <li>● Read aloud to students (Text to speech tools)</li> <li>● Provide word wall (Collaboration tools - Padlet, etc)</li> <li>● Provide visual organizers, demonstrations, technology, to increase understanding of language used.</li> </ul>	<ul style="list-style-type: none"> <li>● Create a language and experience rich environment</li> <li>● Relate new information to acquired knowledge</li> <li>● Assess prior knowledge before introducing new topics or concepts</li> <li>● Provide frequent exposure and practice to words</li> <li>● Pre-teach relevant vocabulary/background information</li> <li>● Develop word consciousness, the awareness of and interest in words and their meanings</li> <li>● Provide explicit vocabulary instruction such as the meaning of common prefixes, suffixes, and root words</li> <li>● Incorporate interests and prior knowledge experiences into instructional activities</li> <li>● Provide clear and concise language when presenting concepts</li> <li>● Check for understanding to ensure comprehension</li> </ul>



# Short-Term Memory - Gsm



The ability to get and hold information in one's mind and then use it within a few seconds includes working memory (the ability to attend to, process, and respond to information)

Characteristics	Academic Difficulties
<ul style="list-style-type: none"> <li>● Difficulty following directions with multiple steps</li> <li>● Difficulty repeating information</li> <li>● Losing train of thought easily</li> <li>● Commonly asking for the same information over and over</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Reading</b> <ul style="list-style-type: none"> <li>○ Reading comprehension</li> <li>○ Decoding</li> <li>○ Paraphrasing</li> </ul> </li> <li>● <b>Writing</b> <ul style="list-style-type: none"> <li>○ Spelling multisyllabic words</li> <li>○ Redundancy in writing</li> <li>○ Note-Taking</li> </ul> </li> <li>● <b>Math</b> <ul style="list-style-type: none"> <li>○ Rote memorization</li> <li>○ Remembering procedures to complete problems</li> <li>○ Multi-step problems and regrouping</li> <li>○ Extracting information from problems</li> </ul> </li> </ul>
Instructional Adaptations (Accom.)	Instructional Interventions
<ul style="list-style-type: none"> <li>● Provide visual guides during oral presentations</li> <li>● Provide lecture notes or arrange peer-shared notes</li> <li>● Provide study guides to be completed during pauses in presentation</li> <li>● Seat the student in a location away from distractions in order to optimize attention</li> <li>● Provide extra time to copy information</li> <li>● Read written directions aloud</li> <li>● Use graphic organizers to reinforce associations between concepts</li> <li>● Provide opportunities for repeated practice and review (choral response)</li> <li>● Break down instructional steps for student</li> <li>● Provide visual supports for acquisition of basic math facts (times table, flash cards).</li> <li>● Highlight important information within a word problem (Google Docs)</li> <li>● Have student write all steps and show all work for math computations</li> </ul>	<ul style="list-style-type: none"> <li>● Teach strategies to increase understanding and retention of concepts such as self talk and creating lists of procedures or steps</li> <li>● Teach memory strategies such as chunking, verbal rehearsal, and visual imagery</li> <li>● Gain students attention before starting a direction</li> <li>● Encourage asking for directions and information to be repeated if not understood or remembered</li> <li>● Keep oral directions short and simple</li> <li>● Have the student repeat or paraphrase directions</li> <li>● Provide visual aids such as written directions for assignments</li> <li>● Provide over-learning through review and repetitions</li> <li>● Check for understanding of concepts through practice and talk-alouds</li> <li>● Provide immediate feedback</li> </ul>

# Fluid Reasoning - Gf

## (Problem Solving)

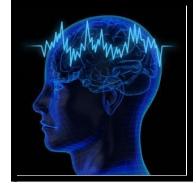
The type of thinking one uses when faced with a relatively new task that cannot be performed automatically.



Characteristics	Academic Difficulties
<ul style="list-style-type: none"> <li>● Inability to recognize cause and effect relationships</li> <li>● Inability to make decisions and solve problems</li> <li>● Difficulty organizing and classifying ideas</li> <li>● Difficulty seeing implication for the broader application of learned rules</li> <li>● Difficulty developing new solutions</li> <li>● Difficulty solving logic puzzles</li> <li>● Difficulty transferring or generalizing learning</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Reading</b> <ul style="list-style-type: none"> <li>○ Drawing inferences</li> <li>○ Determining main ideas</li> </ul> </li> <li>● <b>Writing</b> <ul style="list-style-type: none"> <li>○ Generalizing concepts</li> <li>○ Developing a theme</li> <li>○ Comparing and contrasting ideas</li> <li>○ Poor narrative sequencing</li> </ul> </li> <li>● <b>Math</b> <ul style="list-style-type: none"> <li>○ Problem solving</li> <li>○ Reasoning</li> <li>○ Apprehending relationships between numbers</li> <li>○ Limited mental math skills</li> </ul> </li> </ul>
Instructional Adaptations (Accom.)	Instructional Interventions
<ul style="list-style-type: none"> <li>● Provide assistance in a timely manner</li> <li>● Provide assistance with functions through a task such as when there are changes in task demands</li> <li>● Seat the student next to a peer helper who can provide assistance</li> <li>● Use graphic organizers to analyze relationships, such as cause and effect, compare and contrast, classification and sequential order</li> <li>● Read aloud to students</li> <li>● Use analogies, similes, metaphors when presenting tasks</li> <li>● Use targeted feedback</li> <li>● Use cooperative learning</li> </ul>	<ul style="list-style-type: none"> <li>● Teach problem solving techniques in the context in which they are most likely to be applied</li> <li>● Provide over-learning through repetition and review of concepts</li> <li>● Use concrete objects and manipulatives to develop conceptual understanding</li> <li>● Use metacognitive skills such as reflective discussion, journals, and self-questioning techniques</li> <li>● Use think-alouds, guided practice, and feedback</li> <li>● Use multiple and complex systems of retrieval and integration, such as compare, classify, abstract induction and deduction, analyzing perspectives</li> <li>● Monitor for understanding</li> <li>● Develop student's skill in categorizing objects and drawing conclusions</li> </ul>

# Auditory Processing - Ga

## (Understanding What is Heard)



The ability to perceive, analyze, and synthesize patterns in sounds and/or hear nuances in patterns of sound and speech.

Characteristics	Academic Difficulties
<ul style="list-style-type: none"> <li>● Difficulty filtering nonessential auditory information</li> <li>● Mishear words (e.g., hear circus for circle)</li> <li>● Difficulty recognizing partially heard words</li> <li>● Difficulty learning a foreign language</li> <li>● Recognize larger word parts before individual phonemes</li> <li>● Displays better understanding when oral information is accompanied with visual support</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Reading</b> <ul style="list-style-type: none"> <li>○ Acquiring and using phonetics</li> <li>○ Recognizing and producing rhymes</li> <li>○ Difficulty segmenting words into parts</li> <li>○ Blending phonemes</li> </ul> </li> <li>● <b>Writing</b> <ul style="list-style-type: none"> <li>○ Spelling</li> <li>○ Note-taking</li> </ul> </li> <li>● <b>Math</b> <ul style="list-style-type: none"> <li>○ Reading word problems</li> </ul> </li> </ul>
Instructional Adaptations (Accom.)	Instructional Interventions
<ul style="list-style-type: none"> <li>● Provide a well managed classroom with control of extraneous activities that create auditory distractions and competing background noise</li> <li>● Provide a peer assistant or buddy to assist with information when the student does not understand oral communication</li> <li>● Provide preferential seating that supports monitoring of student comprehension</li> <li>● Provide instruction with an emphasis on sight word reading</li> <li>● Provide work preview and/or text preview to clarify unknown words ! Shorten instructions</li> <li>● Provide time for clarification questions related to “missed” or “misheard” items during lecture</li> </ul>	<ul style="list-style-type: none"> <li>● Provide direct, explicit, systematic information</li> <li>● Provide phonological awareness activities such as rhyming, alliteration, imitation, and songs</li> <li>● Provide explicit instructions in sounds discrimination, blending, and segmentation</li> <li>● Emphasize sound-symbol associations when teaching decoding and spelling</li> <li>● Provide visual aids, such as notes or study guides for listening activities</li> <li>● Provide assistance with note taking</li> <li>● Accompany oral information with visual materials</li> <li>● Check for comprehension after directions are given</li> <li>● Teach comprehension monitoring (e.g., does the word I heard/read make sense in context?)</li> </ul>

# Processing Speed - Gs

## (Fluency and Automaticity)

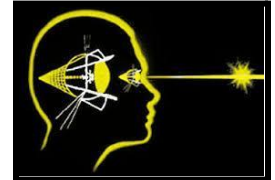


The ability to fluently and automatically perform cognitive tasks, especially when under pressure to maintain focused attention and concentration.

Characteristics	Academic Difficulties
<ul style="list-style-type: none"> <li>● Difficulty with efficiency in processing information</li> <li>● Lose focus when under time constraints</li> <li>● Slow to complete work</li> <li>● Difficulty understanding lengthy directions or lectures</li> <li>● Difficulty with tasks involving rapid hand/eye coordination</li> <li>● Difficulty taking notes with speed and ease <a href="#">Kami</a></li> <li>● Difficulty expressing self easily and efficiently</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Reading</b> <ul style="list-style-type: none"> <li>○ Fluency</li> <li>○ Student has the ability to blend and segment phonemes however does it at a much slower rate</li> </ul> </li> <li>● <b>Writing</b> <ul style="list-style-type: none"> <li>○ Limited output</li> <li>○ Slow writing</li> </ul> </li> <li>● <b>Math</b> <ul style="list-style-type: none"> <li>○ Automaticity</li> <li>○ Slow computational speed</li> </ul> </li> </ul>
Instructional Adaptations (Accom.)	Instructional Interventions
<ul style="list-style-type: none"> <li>● Shorten directions</li> <li>● Provide lecture outlines such as a formatted script of notes in which only keywords need to be added</li> <li>● Limit or structure copying activities</li> <li>● Consider individualizing test taking, such as small group (Online Review/Assessment tools -</li> <li>● Provide extra time to read the text, complete assignments</li> <li>● Increase "wait" time after questions are asked and after responses are given</li> <li>● Reduce quantity of work, including homework</li> </ul>	<ul style="list-style-type: none"> <li>● Provide oral discussions</li> <li>● Provide activities to increase rate and fluency, such as flashcards or speed drills through educational software</li> <li>● Provide strategies that improve the rate of task completion</li> <li>● Encourage the student to self-monitor progress such as graphs for reading fluency, writing fluency, and math computation fluency</li> <li>● Books on tape</li> <li>● Provide speed drills</li> <li>● Use online activities/games (e.g.; <a href="#">academicskillbuilders.com</a>) <a href="#">quizlet</a>, <a href="#">brainpop</a></li> </ul>

# Visual Processing - Gv

## (Understanding What is Seen)



The ability to think about and generate, perceive, analyze, synthesize, store, retrieve, manipulate, transform, and think with visual patterns and stimuli

Characteristics	Academic Difficulties
<ul style="list-style-type: none"> <li>● Difficulty differentiating mathematical signs</li> <li>● Trouble remembering how a whole word looks</li> <li>● Trouble remembering letter sequences</li> <li>● Spelling approach over-relies on phonology</li> <li>● Uneven spacing of letters and numbers</li> <li>● Inaccurately reading maps, pictures, charts, or graphs</li> <li>● Unable to accurately judge speed and distance</li> <li>● Poor spatial planning of page</li> <li>● Difficulty seeing visual patterns</li> <li>● Difficulty tracking and scanning</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Reading</b> <ul style="list-style-type: none"> <li>○ Orthographic coding (using visual features of letters to decode)</li> <li>○ Sight-word acquisition</li> <li>○ Using charts and graphs</li> <li>○ Comprehension of text using spatial concepts</li> </ul> </li> <li>● <b>Writing</b> <ul style="list-style-type: none"> <li>○ Spelling sight words</li> <li>○ Spatial planning during writing</li> <li>○ Formation of letters</li> </ul> </li> <li>● <b>Math</b> <ul style="list-style-type: none"> <li>○ Number alignment during computation</li> <li>○ Reading and interpreting graphs</li> </ul> </li> </ul>
Instructional Adaptations (Accom.)	Instructional Interventions
<ul style="list-style-type: none"> <li>● Provide spatial and sequential guides</li> <li>● Provide visual markers to indicate starting location and organization</li> <li>● Provide graphic organizers to organize information</li> <li>● Provide oral explanations for visual concepts</li> <li>● Highlight margins during writing tasks</li> <li>● Provide graph paper to assist with number alignment</li> <li>● Reduce visual clutter</li> </ul>	<ul style="list-style-type: none"> <li>● Provide multi-sensory learning using visual, kinesthetic, vocal, and auditory channels</li> <li>● Use manipulatives during instruction</li> <li>● Use language to describe visual forms in information as they are manipulated</li> <li>● Provide copying, tracing and drawing activities</li> <li>● Provide verbal description of graphics and visually-based concepts</li> <li>● Use color coding to illustrate steps</li> <li>● Review spatial concepts and support comprehension through the use of hands-on activities and manipulatives (e.g., use models to demonstrate the moon's orbital path)</li> <li>● Teach orthographic strategies for decoding (word length, word shape)</li> </ul>

- Provide direct handwriting practice

# Executive Functioning-Ef

## (Organizing & Executing)



A person's ability to engage in purposeful, organized, strategic, and goal directed behavior.

Characteristics	Academic Difficulties
<ul style="list-style-type: none"> <li>• Difficulty identifying goals and setting goals</li> <li>• Begins tasks without necessary materials</li> <li>• Difficulty getting started on tasks</li> <li>• Does not allocated enough time to complete tasks</li> <li>• Skips steps in multiple step problems</li> <li>• Does not know what is important</li> <li>• Disorganized</li> <li>• Doesn't participate in large-group discussions</li> <li>• Does not check work for errors</li> <li>• Difficulty foreseeing consequences</li> <li>• Difficulty focusing and sustaining attention/effort</li> <li>• Student comes late to class and doesn't have appropriate materials</li> <li>• Student appears unmotivated or is unable to complete in-class work</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Reading</b> <ul style="list-style-type: none"> <li>○ Quick response leads to misinterpretation or misreading words</li> <li>○ Sequencing and telling a story chronologically</li> <li>○ Extracting main idea &amp; other important information</li> <li>○ Drawing inferences from text</li> <li>○ Does not apply known strategies for comprehension</li> </ul> </li> <li>• <b>Math</b> <ul style="list-style-type: none"> <li>○ Remembering order of operations</li> <li>○ Prioritizing what is important when solving word problems &amp; Attending to math signs</li> </ul> </li> <li>• <b>Writing</b> <ul style="list-style-type: none"> <li>○ Generating ideas to write about</li> <li>○ Sequencing a story</li> <li>○ Prioritizing main events in the story</li> <li>○ Lack of elaboration despite knowledge</li> </ul> </li> </ul>
Instructional Adaptations (Accom.)	Instructional Adaptations (Accomm.) Cont.
<p><u>Adaptations for Teaching:</u></p> <ul style="list-style-type: none"> <li>• Give step-by-step instructions and have the student repeat them back. (Write step-by-step instructions in google and have student verbally read them back.)</li> <li>• Give the student an outline of the lesson.</li> <li>• Say to the student, "this is important to know because..." (Bullet important info in Google Docs)</li> <li>• Have a daily routine that doesn't change</li> <li>• Give a short review before teaching new skills</li> <li>• Check frequently to ensure the student understands the work.</li> <li>• <u>Adaptations for the Classroom:</u></li> <li>• Post schedules and directions, and make sure the student sees them</li> <li>• Highlight key words and ideas on worksheets</li> <li>• Give the student colored strips to place under</li> </ul>	<p><u>Adaptations for Organization and Time Management:</u></p> <ul style="list-style-type: none"> <li>• Keep a daily to-do list on the desk so the student can check off assignments</li> <li>• Create an assignment notebook for teacher and parent to check</li> <li>• Provide extra set of books for student's home</li> <li>• Keep folders and baskets of supplies available</li> <li>• Break down big projects into smaller pieces with more deadlines</li> <li>• Create checklists of steps for complex assignments.</li> <li>• Simple Timer app provides visual for amount of time left</li> <li>• <u>Adaptations for Work and Test Taking:</u></li> <li>• Provide a rubric that describes what a successful assignment contains</li> <li>• Allow different ways to answer questions, such as circling or saying them</li> <li>• Give student the test format ahead of time so he can focus</li> </ul>



sentences when reading.

on content

- Use computer speech-to-text software for writing
- Use organizers and mind-mapping software