

CHC Cognitive-Achievement Relations

Basic Reading				Reading Comprehension			
	6-8	9-13	14-19		6-8	9-13	14-19
Broad CHC				Broad CHC			
Comprehension-Knowledge (Gc)	M	M	H	Auditory Processing (Ga)	M		
Long-Term Retrieval (Glr)	L			Comprehension-Knowledge (Gc)	<i>H</i>	<i>H</i>	<i>H</i>
Processing Speed (Gs)	M	M		Long-term Retrieval (Glr)		L	
Short-term memory (Gsm)	L	H	H	Short-Term Memory (Gsm)	L		L
Fluid Reasoning (Gf)	H	H	H	Processing Speed (Gs)	T/S	T/S	
Auditory Processing (Ga)	M	M	M	Fluid Reasoning (Gf)	H	H	<i>H</i>
Narrow CHC				Narrow CHC			
Phonetic Coding (Ga-PC)	M	M	M	Visual Processing (Gv)			
<i>Naming Facility (RAN) (Glr- NA)</i>	<i>H</i>	<i>H</i>					
General Information (Gc-K0)	L	M	M				
Memory Span (Gsm-MS)		M	M				
Working Memory (Gsm-MW)	M	M	M	Narrow CHC			
Associative Memory (Glr-MA)	L			Working Memory (Gsm-MW)	H	H	H
Perceptual Speed (Gs-P)	L	M	L	Memory Span (Gsm-MS)			M
Listening Ability (Gc – LS)	M			Phonetic Coding (Ga-PC)	L	T/S	L
<i>Language Development (LD)</i>	<i>M/H</i>	<i>M/H</i>	<i>M/H</i>	Perceptual Speed (Gs – P)	M	M	L
(Quantitative Rsng) -Number Series (Gf – RQ)	H	H	H				
Quantitative Rsng Number Series (Gf – RQ)	M	M	M	(Quantitative Rsng – Number Series (Gf-RQ))	H	H	H
				<i>Inductive Reasoning (Gf-I)</i>	<i>M</i>	<i>M</i>	<i>M</i>
				<i>Listening Ability (Gc-LS)</i>	<i>H</i>	<i>H</i>	<i>H</i>
				<i>Language Development (Gc- LD)</i>	<i>M/H</i>	<i>M/H</i>	<i>M/H</i>

CHC Cognitive-Achievement Relations

Reading Fluency							
<i>Comprehension- Knowledge (Gc)</i>							
<i>Fluid Reasoning (Gf)</i>							
<i>Processing Speed (Gs)</i>	H	H	H				
<i>Short Term Memory (Gsm)-ages)</i>	M/H						
<i>Auditory Processing (Ga)</i>							
<i>Long Term Retrieval (Glr)</i>	L						
Narrow CHC							
<i>Naming Facility (Glr- NA)</i>	H	H	?		<i>Knowledge (Gc-KO)</i>	<i>H</i>	<i>H</i>
					<i>Deductive Reasoning (Gf-RG)</i>	<i>M</i>	<i>M</i>
<i>Perceptual Speed (Glr – P)</i>	H	H	M/H		<i>Meaningful Memory (Glr-MM)</i>		<i>H</i>
					<i>Naming Facility (Glr-NA)</i>		<i>M</i>
<i>Phonological Processing (Ga-PA)</i>	M/H	H					<i>L</i>

CHC Cognitive-Achievement Relations			
Basic Math			
	6-8	9-13	14-19
Broad CHC			
Comprehension-Knowledge (Gc)		M	M
Fluid Reasoning (Gf)	M	M	M
Processing Speed (Gs)	M	M	M
Short Term Memory (Gsm)			L
Narrow CHC			
Phonetic Coding (Ga-PC)	M	M	T/S
Perceptual Speed (Gs-P)	H	H	H
Working Memory (Gsm-MW)	H	H	H
<i>Naming Facility (RAN) (Glr- NA)</i>	M/L	M/L	M/L
<i>Inductive Reasoning (Gf-I)</i>	H	H	H
<i>Deductive Reasoning (Gf-RG)</i>	H	H	H
<i>Lexical Knowledge (Gc- VL)</i>		L	H
<i>Language Develepment (Gc-LD)</i>		L	H
<i>Spatial Scanning (Gv- SS)(mc)</i>	L		
Math Reasoning			
	6-8	9-13	14-19
Broad CHC		M	H
Comprehension-Knowledge (Gc)	L	H	M
Fluid Reasoning (Gf)	H	M	
Processing Speed (Gs)	M		
			L
Short-Term Memory (Gsm)			LT/T/S
Visual Processing (Gv)	n		
Narrow CHC		L	L
Phonetic Coding (Ga-PC)	M		
Memory Span (Gsm-MS)	L		HHH
Naming Facility (RAN) (Glr-NA)	M/H	M	H
<i>Lexical Knowledge (Gc- VL)</i>	L	M	H
<i>Language Develepment (Gc-LD)</i>	L	mH	H
Working Memory (Gsm-WM)	H	HHHH	H
<i>Inductive Reasoning (Gf-I)</i>	H	HHHH	H
<i>Deductive Reasoning (Gf-RG)</i>	H	HH	HHHH

CHC Cognitive -Achievement Relations			
Written Expression			
Broad CHC			
Comprehension-Knowledge (Gc)		M	M
Processing Speed (Gs)	M	H	H
Fluid Reasoning (Gf)	H	L	H
Auditory Processing (Ga)	M		
Narrow CHC			M/H
Working Memory (Gsm-MW)			
Basic Writing			
Broad CHC		H	H
Comprehension- Knowledge (Gc)		M	
Processing Speed (Gs)	M	M	M
Auditory Processing (Ga)	M		
Fluid Reasoning (Gf)	H		
Narrow CHC		M	M
Working Memory (Gsm-MW)	M		

REFERENCES

Consistency of significance: High(80% or above), Medium(50-79%), Low(30-49%), or Tentative/Speculative

Based on research from: McGrew, K. S. & Wendling, B. J. (2009). CHC cognitive-achievement relations: What we have learned from the past 20 years of research. (Institute for Applied Psychometrics). Retrieved September, 2009 from <http://www.iapsych.com/chccogachmeta2/map.htm>

Cormier, D., McGrew, K., Bulut, O., & Funamoto, A.(2016). *Revisiting the Relationships Between Broad Cattell-Horn-Carroll (CHC) Cognitive Abilities and Reading Achievement During the School-Age Years. Journal of Psychoeducational Assessment, 1-24.*

CURRENT RESOURCES FOR CHC AND ACHIEVEMENT CORRELATIONS

<https://www.gonzaga.edu/academics/colleges-and-schools/school-of-education/Conferences/files/flanagan->

Flanagan, Ortiz, Alfonso, & Mascolo (2006).

Cormier, D., Bulut, McGrew, K., Frison, J. (2016). The Role of Cattell-Horn-Carroll (CHC) Cognitive Abilities in Predicting Writing Achievement