



**Jonah's Cognitive Score Changes**

Cognitive Function	3 Year Progress
Perceptual reasoning (ability to make sense of what is observed)	Went from 1 <sup>st</sup> %ile (an IQ of 66) to 47 <sup>th</sup> %ile (an IQ of 97). Jonah <i>changed</i> the ability of his brain to process and reason with visual information.
Matrix reasoning (ability to discover patterns with visual designs)	Went from 9 <sup>th</sup> %ile to 63 <sup>rd</sup> %ile
Picture concepts (ability to recognize similar visual concepts)	Went from 5 <sup>th</sup> %ile to 63 <sup>rd</sup> %ile
Block design (ability to measure spatial awareness)	Went from 1 <sup>st</sup> %ile to 16 <sup>th</sup> %ile
Visual-motor integration (Beery-Buktenica developmental test)	Went from 12 <sup>th</sup> %ile to 50 <sup>th</sup> %ile
Writing samples (Woodcock-Johnson Tests of Achievement)	Went from 6 <sup>th</sup> %ile to 74 <sup>th</sup> %ile

**James' Cognitive Score Changes**

Test	Description	2004	2007
<b>Visual motor integration BEERY</b>	Cognitive skills required for printing and copying	10 <sup>th</sup> %ile (low)	55 <sup>th</sup> %ile (average)
<b>Processing speed WISC</b>	Cognitive skills required for speed of copying and printing	12 <sup>th</sup> %ile (low)	45 <sup>th</sup> %ile (Average)
<b>Phonemic awareness WJC-R subtest</b>	Measure of language development and awareness of phonics	1 <sup>st</sup> %ile (low)	28 <sup>th</sup> %ile (average)
<b>Verbal intelligence WISC</b>	Knowledge of word meanings, ability to expressive this knowledge	4 <sup>th</sup> %ile (low)	26 <sup>th</sup> %ile (low average)
<b>Sound blending WJC-R</b>	Ability to hear sound	1 <sup>st</sup> %ile (low)	32 <sup>nd</sup> %ile (average)
<b>Concept formation WJC-R</b>	Fluid reasoning and concept formation	4 <sup>th</sup> %ile (low)	25 <sup>th</sup> %ile (Average)
<b>Nonverbal intelligence</b>	Measure of abstract reasoning ability	32 <sup>nd</sup> %ile (low average)	58 <sup>th</sup> %ile (average.)

**Clare's Cognitive Score Changes**

**ARROWSMITH PROGRAM****Eaton Arrowsmith School Students' Cognitive Changes on Standardized Measures**[www.eatonarrowsmithschool.com](http://www.eatonarrowsmithschool.com)

Test	Description	2004	2007
<b>Woodcock-Johnson cognitive efficiency</b>	Capacity of cognitive system to process information automatically, including processing speed and short-term memory.	6 <sup>th</sup> %ile	65 <sup>th</sup> %ile (Average)
<b>Woodcock-Johnson Reading fluency</b>	Reading achievement	16 <sup>th</sup> %ile	46 <sup>th</sup> %ile (Average)
<b>Woodcock-Johnson Writing fluency</b>	Writing achievement	17 <sup>th</sup> %ile	30 <sup>th</sup> %ile (Average)

**Matt's Cognitive Score Changes**

Test	Description	2004	2007
<b>BEERY</b>	Cognitive skills required for printing and copying	6 <sup>th</sup> %ile	34 <sup>th</sup> %ile (Average)
<b>WISC - Coding</b>	Cognitive skills required for speed of copying and printing	5 <sup>th</sup> %ile	75 <sup>th</sup> %ile (Average)
<b>Woodcock-Johnson Verbal Ability</b>	Measure of language development and ability to retrieve words from memory	67 <sup>th</sup> %ile	94 <sup>th</sup> %ile (Superior)
<b>WISC – Vocabulary</b>	Knowledge of word meanings, ability to expressive this knowledge	63 <sup>rd</sup> %ile	91 <sup>st</sup> %ile (Superior)
<b>WISC – Processing Speed</b>	Reflects attention and speed of visual processing	26 <sup>th</sup> %ile	66 <sup>th</sup> %ile (Average)
<b>Test of Nonverbal Intelligence – 3rd</b>	Measure of abstract reasoning ability	50 <sup>th</sup> %ile	88 <sup>th</sup> %ile (High Average)



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**3 Case Studies Conducted by Howard Eaton 2004** Eaton Learning Centre

Pre and Post Tested 3 Arrowsmith students after one, two and three years in the Arrowsmith Program

Test Measure: Woodcock-Johnson III Cognitive and Achievement Tests

**What were the improvements:**

- Faster cognitive efficiency
- Improved visual-motor integration
- Improved visual-perceptual functioning
- Improved auditory processing for speech sounds and discourse
- Improved semantic knowledge
- Improved achievement skills

**Student One:** 8 year old boy - 3 years in Arrowsmith Program

Woodcock-Johnson III	Score in 2000	Score in 2004
Working Memory for Numbers	2 <sup>nd</sup> %ile	43 <sup>rd</sup> %ile
Visual-Motor Copying Speed	5 <sup>th</sup> %ile	50 <sup>th</sup> %ile
Visual Processing Speed	12 <sup>th</sup> %ile	45 <sup>th</sup> %ile
Academic Fluency – Reading Speed; Writing Speed; Math Calculation Speed	Below grade level expectation	At grade level expectation
Math Calculation Skills	1 <sup>st</sup> %ile	62 <sup>nd</sup> %ile

**Student Two:** 12 year old girl - 2 years in Arrowsmith Program

Woodcock-Johnson III	Score in 1999	Score in 2003
Visual-Spatial Awareness	11 <sup>th</sup> %ile	Average
Working Memory	4 <sup>th</sup> %ile	Average
Visual Processing Speed	38 <sup>th</sup> %ile	90 <sup>th</sup> %ile



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**Student Three:** 18 year old girl - 1 year in Arrowsmith Program

Woodcock-Johnson III	Score in 2001	Score in 2004
Writing Fluency	2 <sup>nd</sup> %ile	53 <sup>rd</sup> %ile
Math Fluency	28 <sup>th</sup> %ile	75 <sup>th</sup> %ile
Visual Auditory Learning	4 <sup>th</sup> %ile	61 <sup>st</sup> %ile
Cognitive Efficiency	18 <sup>th</sup> %ile	64 <sup>th</sup> %ile
WISC Non Verbal IQ	8 <sup>th</sup> %ile	Average