# Woodcock-Johnson V Virtual Test Library

## Test Descriptions

Below are descriptions of the different tests included in the Woodcock-Johnson V Virtual Test Library and their corresponding CHC Abilities. For more detailed descriptions of the different CHC abilities, please reference pages 4-6 of this document.

| Test | CHC Abilities | Description |
|---|---|---|
| **Nonsense Word Repetition** | Broad:<br>Auditory Processing (Ga) and Auditory Working Memory Capacity (Gwm)<br><br>Narrow:<br>Memory for Sound Patterns (UM) and Auditory Short-Term Storage (Wa) | The examinee hears a nonsense word from an audio recording and then must repeat the word exactly as presented. |
| **Rapid Picture Naming** | Broad:<br>Cognitive Processing Speed (Gs) and Retrieval Fluency (Gr)<br><br>Narrow:<br>Naming Facility (NA) | The examinee sees pictures of common objects in successive rows and must name the pictures within a 1-minute time limit.<br><br>Contributes to the following clusters:<br>• RAN-Reading |
| **Animal-Number Sequencing** | Broad:<br>Auditory Working Memory Capacity (Gwm)<br><br>Narrow:<br>Working Memory Capacity (Wc) and Auditory Short-Term Storage (Wa) | The examinee hears an intermingled series of animals and digits from an audio recording and must reorder the information, naming the animals first in order and then naming the digits in order. |

| Test | CHC Abilities | Description |
|---|---|---|
| **Sound Reversal** | Broad:<br>Auditory Processing (Ga)<br><br>Narrow:<br>Memory for Sound Patterns (UM) | The examinee hears words presented orally by the examiner and then says the sounds in the word backward to form a different word. |
| **Rapid Letter Naming** | Broad:<br>Cognitive Processing Speed (Gs) and Retrieval Fluency (Gr)<br><br>Narrow:<br>Naming Facility (NA) | The examinee sees letters presented in successive rows and must name the letters as quickly as they can within a 1-minute time limit.<br><br>Contributes to the following clusters:<br>• RAN-Reading |
| **Understanding Directions** | Broad:<br>Auditory Working Memory Capacity (Gwm) and Fluid Reasoning (Gf)<br><br>Narrow:<br>Working Memory Capacity (Wc), Auditory Short-Term Storage (Wa), and Quantitative Reasoning (RQ) | The examinee studies a detailed picture scene on the tablet screen for 10 seconds and then follows instructions from an audio recording to tap elements of the picture in a specific order. |
| **Sound Blending** | Broad:<br>Auditory Processing (Ga)<br><br>Narrow:<br>Phonetic Coding (PC) | The examinee hears a series of syllables or phonemes from an audio recording and must blend the sounds together to say the whole word.<br><br>Contributes to the following clusters:<br>• Phonological Awareness |
| **Rapid Phoneme Naming** | Broad:<br>Cognitive Processing Speed (Gs), Retrieval Fluency (Gr), and Auditory Processing (Ga)<br><br>Narrow:<br>Naming Facility (NA)<br>Phonetic Coding (PC) | The examinee sees phonemes (letters inside of slash marks, such as /m/) presented in successive rows and must say the phonemes as quickly as they can within a 1-minute time limit.<br><br>Contributes to the following clusters:<br>• RAN-Reading |

| Test | CHC Abilities | Description |
|---|---|---|
| **Memory for Words** | Broad:<br>Auditory Working Memory (Gwm)<br><br>Narrow:<br>Auditory Short-Term Storage (Wa) | The examinee hears a list of unrelated words from an audio recording and must say them in the same order.<br><br>Contributes to the following clusters:<br>• Auditory Memory Span |
| **Segmentation** | Broad:<br>Auditory Processing (Ga)<br><br>Narrow:<br>Phonetic Coding (PC) | The examinee hears a word and then says the word in parts ranging from compound words (accompanied with pictures on the tablet screen) to syllables to individual speech sounds (phonemes).<br><br>Contributes to the following clusters:<br>• Phonological Awareness |
| **Rapid Number Naming** | Broad:<br>Cognitive Processing Speed (Gs) and Retrieval Fluency (Gr)<br><br>Narrow:<br>Number Facility (N) and Naming Facility (NA) | The examinee sees numbers presented in successive rows and must name the numbers as quickly as they can within a 1-minute time limit.<br><br>Contributes to the following clusters:<br>• RAN-Math |
| **Sentence Repetition** | Broad:<br>Auditory Working Memory (Gwm)<br><br>Narrow:<br>Auditory Short-Term Storage (Wa) | The examinee hears a list of words, phrases, and sentences from an audio recording and must say each exactly as it was presented.<br><br>Contributes to the following clusters:<br>• Auditory Memory Span |
| **Sound Deletion** | Broad:<br>Auditory Processing (Ga)<br><br>Narrow:<br>Phonetic Coding (PC) | The examinee must delete a word part or phoneme from a word presented from an audio recording and then say the new word.<br><br>Contributes to the following clusters:<br>• Phonological Manipulation |

| Test | CHC Abilities | Description |
|---|---|---|
| **Rapid Quantity Naming** | Broad:<br>Cognitive Processing Speed (Gs), Retrieval Fluency (Gr) and Visual Processing (Gv)<br><br>Narrow:<br>Number Facility (N), Naming Facility (NA), and Visualization (Vz) | The examinee sees rows of rectangles, each containing five different groups of dots, and must say the number of dots in each group as quickly as they can within a 1-minute time limit.<br><br>Contributes to the following clusters:<br>• RAN-Math |
| **Sound Substitution** | Broad:<br>Auditory Processing (Ga)<br><br>Narrow:<br>Phonetic Coding (PC) | The examinee must replace part of a word with a new part presented from an audio recording and then say the new word.<br><br>Contributes to the following clusters:<br>• Phonological Manipulation |

# Woodcock-Johnson V Virtual Test Library

## Definitions of CHC Abilities

### Auditory Processing (Ga)

The ability to discriminate, remember, reason, and work creatively on auditory stimuli, which may consist of tones, environmental sounds, and speech units.

### Auditory Working Memory Capacity (Gwm)

The ability to maintain and manipulate information in one's immediate awareness. It is a temporary, limited capacity storage system. Auditory Working Memory Capacity is an important ability because performance in many areas, including higher level cognitive functions such as complex reasoning, relies on its efficiency. It is significantly related to all academic areas and limits in this ability can limit new learning and may negatively impact performance on all nonautomatic tasks.

### Memory for Sound Patterns (UM)

The ability to retain (on a short-term basis) auditory codes such as tones, tonal patterns, or speech sounds.

### Auditory Short-Term Storage (Wa)

The ability to encode and maintain verbal information in primary memory. In earlier CHC and psychometric literature this was often referred to as a form of Memory Span (MS).

### Cognitive Processing Speed (Gs)

The ability to quickly perform both simple and complex cognitive tasks, particularly when measured under pressure to sustain controlled attention and concentration. Cognitive processing speed is an aspect of cognitive efficiency.

### Retrieval Fluency (Gr)

The individual's ability to access information stored in long-term memory both accurately and quickly. Retrieval Fluency abilities include recall of ideas, words, and figures.

### Naming Facility (NA)

The ability to rapidly call objects by their names.This ability is often called Rapid Automatized Naming (RAN) in the reading and learning disability literature.

### Working Memory Capacity (Wc)

The ability to actively manipulate information in primary memory. Working Memory Capacity (Wc) is technically not a narrow ability; instead, it is the combination of short-term storage (either Auditory Short-Term Storage [Wa] or Visual-Spatial Short-Term Storage [Wv]) plus Attentional Control (AC). Working memory tasks vary in the degree of demand placed on short-term storage and the degree of attentional control (AC) active manipulation of information while in short-term memory.

### Fluid Reasoning (Gf)

Includes the broad ability to reason, form concepts, and solve problems using unfamiliar information or novel procedures. It is a complex mixture of many mental operations, such as identifying relations, drawing inferences, recognizing, and forming concepts, identifying conjunctions, and recognizing disjunctions. It also requires deliberate and flexible control of attention to solve on-the-spot problems.

### Quantitative Reasoning (RQ)

The ability to reason, either with induction, or deduction, with quantities, mathematical relations, and operations.

### Phonetic Coding (PC)

The ability to distinctly hear phonemes; blend sounds into words; and segment words into parts, sounds, or phonemes. This ability is also frequently referred to as phonological processing, phonological awareness, and phonemic awareness.

### Number Facility (N)

The speed, fluency, and accuracy of manipulating numbers, comparing number patterns, or completing basic arithmetic.

### Visual Processing (Gv)

The ability to perceive, analyze, synthesize, and think with visual patterns. Includes the ability to store and recall visual representations (visual working memory and long-term retrieval of visual elements).

### Visualization (Vz)

The ability to perceive complex patterns and mentally simulate how they might look when transformed (e.g., rotated, changed in size, partially obscured. Visualization is the core Visual Processing (Gv) ability.