

Tables 5-2, 5-3, and 5-4 provide further descriptions of the broad and narrow constructs measured by the WJ IV COG, OL, and ACH tests, respectively, as well as stimulus and response characteristics, task requirements, and inferred cognitive processes.

Table 5-2.
WJ IV COG Test Content,
Process, and Construct
Descriptions

Cognitive Test	Primary Broad CHC Ability Narrow Ability	Stimuli	Task Requirements	Cognitive Processes	Response
1: Oral Vocabulary A: Synonyms B: Antonyms	Comprehension- Knowledge (<i>Gc</i>) <i>Lexical knowledge</i> (VL) <i>Language development</i> (LD)	Auditory (words)	Listening to a word and providing a synonym; listening to a word and providing an antonym	Semantic activation, access, and matching	Oral (words)
2: Number Series	Fluid Reasoning (<i>Gf</i>) <i>Quantitative reasoning</i> (RQ) <i>Induction</i> (I)	Visual (numeric)	Determining a numerical sequence	Representation and manipulation of points on a mental number line; identifying and applying an underlying rule/ principle to complete a numerical sequence	Oral (numbers)
3: Verbal Attention	Short-Term Working Memory (<i>Gwm</i>) <i>Working memory capacity</i> (WM) <i>Attentional control</i> (AC)	Auditory (words, numbers)	Listening to a series of numbers and animals intermingled and answering a specific question regarding the sequence	Controlled executive function; working memory capacity; recoding of acoustic, verbalized stimuli held in immediate awareness; selective auditory attention; attentional control	Oral (words)
4: Letter-Pattern Matching	Processing Speed (<i>Gs</i>) <i>Perceptual speed</i> (P)	Visual (letters)	Rapidly locating and circling identical letters or letter patterns	Speeded visual perception and matching; visual discrimination; orthographic processing; divided attention	Motoric (circling)
5: Phonological Processing A: Word Access B: Word Fluency C: Substitution	Auditory Processing (<i>Ga</i>) <i>Phonetic coding</i> (PC) <i>Word fluency</i> (<i>Glr-FW</i>) <i>Speed of lexical access</i> (<i>Glr-LA</i>)	Auditory (words)	Providing a word with a specific phonic element; naming as many words as possible that begin with a specified sound; substituting part of a word to make a new word	Semantic activation, access; speed of lexical access	Oral (words)
6: Story Recall	Long-Term Retrieval (<i>Glr</i>) <i>Meaningful memory</i> (MM) <i>Listening ability</i> (<i>Gc-LS</i>)	Auditory (text)	Listening to and recalling details of stories	Construction of propositional representations and recoding	Oral (passages)
7: Visualization A: Spatial Relations B: Block Rotation	Visual Processing (<i>Gv</i>) <i>Visualization</i> (Vz)	Visual (shapes, designs)	Identifying two- dimensional pieces that form a shape; identifying two three- dimensional rotated block patterns that match a target	Visual feature detection; manipulation (mental rotation) of visual images in space; matching	Oral (letters) or Motoric (pointing)
8: General Information A: Where B: What	Comprehension- Knowledge (<i>Gc</i>) <i>General (verbal)</i> <i>information</i> (K0)	Auditory (questions)	Identifying where an object is found and what people typically do with an object	Semantic activation and access to declarative generic knowledge	Oral (phrases, sentences)
9: Concept Formation	Fluid Reasoning (<i>Gf</i>) <i>Induction</i> (I)	Visual (drawings)	Identifying, categorizing, and determining rules	Rule-based categorization; rule switching; induction/ inference	Oral (words)
10: Numbers Reversed	Short-Term Working Memory (<i>Gwm</i>) <i>Working memory capacity</i> (WM) <i>Attentional control</i> (AC)	Auditory (numbers)	Listening to and recalling a sequence of digits in reversed order	Span of apprehension and recoding in working memory; working memory capacity, attentional capacity	Oral (numbers)

Table 5-2. (cont.)
*WJ IV COG Test Content,
 Process, and Construct
 Descriptions*

Cognitive Test	Primary Broad CHC Ability Narrow Ability	Stimuli	Task Requirements	Cognitive Processes	Response
11: Number-Pattern Matching	Processing Speed (<i>Gs</i>) <i>Perceptual speed</i> (P)	Visual (numbers)	Rapidly locating and circling identical numerals from a defined set	Speeded visual perception and matching; visual discrimination; divided attention	Motoric (circling)
12: Nonword Repetition	Auditory Processing (<i>Ga</i>) <i>Phonetic coding</i> (PC) <i>Memory for sound patterns</i> (UM) <i>Memory span</i> (<i>Gwm</i> -MS)	Auditory (nonsense words)	Listening to a nonsense word and repeating it exactly	Analysis of a sequence of acoustic phonological elements in immediate awareness; efficiency of the phonological loop	Oral (words)
13: Visual-Auditory Learning	Long-Term Retrieval (<i>Glr</i>) <i>Associative memory</i> (MA)	Visual (rebuses) Auditory (words)	Learning and recalling pictographic representations of words	Paired-associative encoding via directed spotlight attention; storage and retrieval	Oral (sentences)
14: Picture Recognition	Visual Processing (<i>Gv</i>) <i>Visual memory</i> (MV)	Visual (pictures)	Recognizing a subset of previously presented pictures within a field of similar distracting pictures	Formation of iconic memories and matching of visual stimuli to stored visual representations	Oral (words) or Motoric (pointing)
15: Analysis-Synthesis	Fluid Reasoning (<i>Gf</i>) <i>General sequential reasoning</i> (RG)	Visual (drawings)	Analyzing puzzles (using symbolic formulations) to determine missing components	Algorithmic reasoning; deduction	Oral (words)
16: Object-Number Sequencing	Short-Term Working Memory (<i>Gwm</i>) <i>Working memory capacity</i> (WM)	Auditory (words, numbers)	Listening to a series of numbers and words intermingled and recalling in two reordered sequences	Recoding of acoustic, verbalized stimuli held in immediate awareness; working memory capacity	Oral (words, numbers)
17: Pair Cancellation	Processing Speed (<i>Gs</i>) <i>Perceptual speed</i> (P) <i>Spatial scanning</i> (<i>Gv</i> -SS) <i>Attentional control</i> (<i>Gwm</i> -AC)	Visual (drawings)	Rapidly locating and marking a repeated pattern	Executive processing; attentional control; inhibition and interference control; sustained attention	Motoric (circling)
18: Memory for Words	Short-Term Working Memory (<i>Gwm</i>) <i>Memory span</i> (MS)	Auditory (words)	Listening to and repeating a sequence of unrelated words	Formation of echoic memories and verbalizable span of echoic store	Oral (words)