

Descriptions of the WJ III ACH Tests and Clusters

The WJ III ACH contains 22 tests measuring five curricular areas—reading, mathematics, written language, oral language, and academic knowledge—and two auxiliary writing evaluation procedures. Specific combinations, or groupings, of these 22 tests form clusters for interpretive purposes. (For administration and scoring procedures, see Chapters 3 and 4.) Each form (A and B) of the Standard Battery contains 12 tests and each form (A and B) of the Extended Battery contains 10 additional tests.

The tests in the Standard Battery combine to form 10 cluster scores, including a Total Achievement score. When used in conjunction with the tests in the Extended Battery, 9 additional clusters are derived. Although tests are the basic administration components of the WJ III ACH, clusters of tests provide the primary basis for test interpretation. Cluster interpretation minimizes the danger of generalizing from the score for a single, narrow ability to a broad, multifaceted ability. Cluster interpretation results in higher validity because more than one component of a broad ability comprises the score that serves as the basis for interpretation. The subject's performance on individual tests is primarily used to understand the broader cluster score and broad area of competence.

WJ III ACH Tests

The selective testing table, presented in Table 2-1, illustrates the scope of interpretive information available from the WJ III ACH and shows the combinations of tests that form the various cluster scores.

Test 1: Letter-Word Identification

Letter-Word Identification measures the subject's word identification skills. The initial items require the individual to identify letters that appear in large type on the subject's side of the Test Book and the remaining items require the person to pronounce words correctly. The individual is not required to know the meaning of any word. The items become increasingly difficult as the selected words appear less and less frequently in written English. Letter-Word Identification has a median reliability of .91 in the age 5 to 19 range and .94 in the adult range.

Test 2: Reading Fluency

Reading Fluency measures the person's ability to quickly read simple sentences in the Subject Response Booklet, decide if the statement is true, and then circle Yes or No. The difficulty level of the sentences gradually increases to a moderate level. The individual attempts to complete as many items as possible within a 3-minute time limit. Reading Fluency has a median reliability of .90 in the age 5 to 19 range and .90 in the adult range.

Table 2-1.
WJ III ACH Selective
Testing Table

Tests of Achievement		Reading		Oral Language			Math	Written Lang.	Other Clusters												
		Broad Reading	Basic Reading Skills	Reading Comprehension	Oral Language—Standard	Oral Language—Extended	Listening Comprehension	Oral Expression	Broad Math	Math Calculation Skills	Math Reasoning	Broad Written Language	Basic Writing Skills	Written Expression	Academic Knowledge	Phoneme/Grapheme Knowledge	Academic Skills	Academic Fluency	Academic Applications	Total Achievement	
Standard Battery	Test 1: Letter-Word Identification	■	■										■							■	
	Test 2: Reading Fluency	■																■		■	
	Test 3: Story Recall			■	■	■															
	Test 4: Understanding Directions			■	■	■															
	Test 5: Calculation						■	■						■						■	
	Test 6: Math Fluency						■	■										■		■	
	Test 7: Spelling								■	■				■						■	
	Test 8: Writing Fluency								■		■							■		■	
	Test 9: Passage Comprehension	■		■																■	■
	Test 10: Applied Problems						■	■												■	■
	Test 11: Writing Samples								■		■									■	■
	Test 12: Story Recall—Delayed																				
Extended Battery	Test 13: Word Attack		■										■								
	Test 14: Picture Vocabulary				■	■															
	Test 15: Oral Comprehension				■	■															
	Test 16: Editing									■											
	Test 17: Reading Vocabulary			■																	
	Test 18: Quantitative Concepts							■													
	Test 19: Academic Knowledge												■								
	Test 20: Spelling of Sounds													■							
	Test 21: Sound Awareness														■						
	Test 22: Punctuation & Capitalization																				

Test 3: Story Recall

Story Recall measures aspects of oral language including language development and meaningful memory. The task requires the subject to recall increasingly complex stories that are presented using an audio recording. After listening to a passage, the individual is asked to recall as many details of the story as he or she can remember. Story Recall has a median reliability of .87 in the age 5 to 19 range and .89 in the adult range.

Test 4: Understanding Directions

Understanding Directions is an oral language measure. The task requires the person to listen to a sequence of audio-recorded instructions and then follow the directions by pointing to various objects in a colored picture. The items gradually increase in linguistic complexity as the number of tasks to perform increases. Understanding Directions has a median reliability of .77 in the age 5 to 19 range and .90 in the adult range.

Test 5: Calculation

Calculation is a test of math achievement measuring the ability to perform mathematical computations. The initial items in Calculation require the individual to write single numbers. The remaining items require the person to perform addition, subtraction, multiplication, division, and combinations of these basic operations, as well as some geometric, trigonometric, logarithmic, and calculus operations. The calculations involve negative numbers, percents, decimals, fractions, and whole numbers. Because the calculations are presented in a traditional problem format in the Subject Response Booklet, the person is not required to make any decisions about what operations to use or what data to include. Calculation has a median reliability of .85 in the age 5 to 19 range and .89 in the adult range.

Test 6: Math Fluency

Math Fluency measures the ability to solve simple addition, subtraction, and multiplication facts quickly. The person is presented a series of simple arithmetic problems in the Subject Response Booklet. This test has a 3-minute time limit. Math Fluency has a median reliability of .89 in the age 7 to 19 range and .92 in the adult range.

Test 7: Spelling

Spelling measures the ability to write orally presented words correctly. The initial items measure prewriting skills such as drawing lines and tracing letters. The next set of items requires the person to produce uppercase and lowercase letters. The remaining items measure the person's ability to spell words correctly. The items become increasingly difficult as the words become more difficult. This test has a median reliability of .89 in the age 5 to 19 range and .95 in the adult range.

Test 8: Writing Fluency

Writing Fluency measures skill in formulating and writing simple sentences quickly. Each sentence must relate to a given stimulus picture in the Subject Response Booklet and include a given set of three words. This test has a 7-minute time limit. It has a median reliability of .86 in the age 7 to 19 range and .92 in the adult range.

Test 9: Passage Comprehension

The initial Passage Comprehension items involve symbolic learning, or the ability to match a rebus (pictographic representation of a word) with an actual picture of the object. The next items are presented in a multiple-choice format and require the person to point to the picture represented by a phrase. The remaining items require the person to read a short passage and identify a missing key word that makes sense in the context of that passage. The items become increasingly difficult by removing pictorial stimuli and by increasing passage length, level of vocabulary, and complexity of syntactic and semantic cues. Passage Comprehension has a median reliability of .83 in the age 5 to 19 range and .88 in the adult range.

Test 10: Applied Problems

Applied Problems requires the person to analyze and solve math problems. To solve the problems, the person must listen to the problem, recognize the procedure to be followed, and then perform relatively simple calculations. Because many of the problems include extraneous information, the individual must decide not only the appropriate mathematical operations to use but also which numbers to include in the calculation. Item difficulty

increases with complex calculations. This test has a median reliability of .92 in the age 5 to 19 range and .95 in the adult range.

Test 11: Writing Samples

Writing Samples measures skill in writing responses to a variety of demands. The person must produce written sentences that are evaluated with respect to the quality of expression. Item difficulty increases by increasing passage length, level of vocabulary, grammatical complexities, and level of concept abstraction. The individual is not penalized for errors in basic writing skills, such as spelling or punctuation. Writing Samples has a median reliability of .84 in the age 5 to 19 range and .91 in the adult range.

Handwriting

Two procedures are available to evaluate handwriting: (a) the Handwriting Legibility Scale, a standardized evaluation of the general appearance of the handwriting; and (b) an informal evaluation of six handwriting elements. The WJ III ACH Handwriting Legibility Scale (Appendix C) provides a norm-based evaluation of handwriting produced on the Writing Samples test or on samples collected from other sources.

Writing Evaluation Scale

The Writing Evaluation Scale (Mather & Woodcock, 1997), located in Appendix D, provides a more comprehensive profile of an individual's writing skill and is used to evaluate one or more samples of an individual's writing, such as a story or essay written in class. This informal procedure allows the examiner to assess writing competence in more detail and to obtain a more comprehensive profile of an individual's writing skill.

Test 12: Story Recall–Delayed

Story Recall–Delayed measures aspects of language development and meaningful memory using previously presented stories. The task requires the individual to recall, after 30 or more minutes on the same day or up to 8 days after administration, the story elements presented in Test 3: Story Recall. This test has a median reliability of .81 in the age 5 to 19 range and .81 in the adult range.

Test 13: Word Attack

Word Attack measures skill in applying phonic and structural analysis skills to the pronunciation of unfamiliar printed words. The initial items require the individual to produce the sounds for single letters. The remaining items require the person to read aloud letter combinations that are phonically consistent, or regular, patterns in English orthography but are nonwords or low-frequency words. The items become more difficult as the complexity of the nonwords increases. Word Attack has a median reliability of .87 in the age 5 to 19 range and .87 in the adult range.

Test 14: Picture Vocabulary

Picture Vocabulary measures oral language development and lexical (word) knowledge. The task requires the person to identify pictured objects. Although a few receptive items are offered at the beginning of the test, this is primarily an expressive language task at the single-word level. The items become increasingly difficult as the selected pictures appear less and less frequently in the environment. As in any vocabulary task, word retrieval is a component. This test has a median reliability of .77 in the age 5 to 19 range and .90 in the adult range.

Test 15: Oral Comprehension

Oral Comprehension is a test of oral language measuring the ability to comprehend a short audio-recorded passage and then supply the missing word using syntactic and semantic cues. This oral cloze procedure requires the use of listening, reasoning, and vocabulary abilities. The test begins with simple analogies and associations and progresses to more complex passages. Oral Comprehension has a median reliability of .80 in the age 5 to 19 range and .89 in the adult range.

Test 16: Editing

Editing measures skill in identifying and correcting errors in a written passage. The error in the passage may be incorrect punctuation or capitalization, inappropriate word usage, or a misspelling. Items increase in difficulty by increasing passage length, complexity, and use of uncommon or irregular words. This test has a median reliability of .91 in the age 5 to 19 range and .90 in the adult range.

Test 17: Reading Vocabulary

Reading Vocabulary measures skill in reading words and supplying appropriate meanings. This test includes three subtests: Synonyms, Antonyms, and Analogies. The first subtest requires reading a word and providing a synonym. The second subtest requires reading a word and then providing an antonym. The third subtest requires reading three words of an analogy and then providing the fourth word to complete the analogy. Items become increasingly difficult within each task. This test has a median reliability of .87 in the age 5 to 19 range and .92 in the adult range.

Test 18: Quantitative Concepts

Quantitative Concepts measures knowledge of mathematical concepts, symbols, and vocabulary. This test consists of two subtests: Concepts and Number Series. In the first subtest, the initial items require counting and identifying numbers, shapes, and sequences. The remaining items require knowledge of mathematical terms and formulas. The subject does not perform any paper-and-pencil calculations. In the second subtest, the task requires the person to look at a series of numbers, figure out the pattern, and then provide the missing number in the series. Quantitative Concepts has a median reliability of .90 in the age 5 to 19 range and .94 in the adult range.

Test 19: Academic Knowledge

Academic Knowledge includes three subtests: Science, Social Studies, and Humanities. It samples the individual's knowledge in the sciences, history, geography, government, economics, art, music, and literature. The early items on all three subtests require only a pointing response. For the remaining items, the person responds orally. Because of the breadth of coverage and length of this test it is interpreted as a cluster. It has a median reliability of .88 in the age 5 to 19 range and .91 in the adult range.

Test 20: Spelling of Sounds

Spelling of Sounds is a measure of spelling ability, particularly phonological and orthographical coding skills. The initial items require the individual to write single letters of sounds. The remaining items require the person to listen to the audio recording and then

spell letter combinations that are regular patterns in English spelling. The items are nonwords or low-frequency words. The items become more difficult as the nonwords involve more complex spelling patterns. Spelling of Sounds has a median reliability of .74 in the age 6 to 19 range and .82 in the adult range.

Test 21: Sound Awareness

Sound Awareness is a measure of phonological awareness. This test consists of four subtests: Rhyming, Deletion, Substitution, and Reversal. The initial items of the Rhyming subtest require a pointing response. The remaining items require the person to provide a word that rhymes with the stimulus that is presented orally. The Deletion subtest requires the person to remove part of a compound word or a letter sound from a word to make a new word. The Substitution subtest requires the individual to substitute a word, a word ending, or a letter sound to create a new word. The Reversal subtest requires the ability to first reverse parts of compound words and then reverse letter sounds of words to create new words. Items become increasingly difficult within each subtest and each subtest is more difficult than the one prior. Sound Awareness has a median reliability of .81 in the age 5 to 19 range and .86 in the adult range.

Test 22: Punctuation and Capitalization

Punctuation and Capitalization is a measure of certain written English formatting skills. The task requires the individual to punctuate or capitalize items correctly. This test has a median reliability of .77 in the age 5 to 19 range and .88 in the adult range.

Tests for Use With Preschool Children

The age level at which it is appropriate to administer the various achievement tests is a function of the opportunity the subject has had to acquire the skills and knowledge that will be measured. Few individuals below the age of six would be expected to perform on tests such as Editing, Reading Fluency, or Calculation. On the other hand, subjects of age two can generally perform the beginning tasks presented in Picture Vocabulary, Understanding Directions, or Academic Knowledge. Table 2-2 lists the 12 achievement tests that are the most usable with preschool children. In addition to preschool children, this set of tests can be administered to individuals of any age who have developmental delays or reduced functioning.

Table 2-2.
Twelve WJ III ACH Tests for Use With Preschool Children

Test Number	Test
Test 1	Letter-Word Identification
Test 3	Story Recall
Test 4	Understanding Directions
Test 7	Spelling
Test 9	Passage Comprehension
Test 10	Applied Problems
Test 12	Story Recall-Delayed
Test 13	Word Attack
Test 14	Picture Vocabulary
Test 15	Oral Comprehension
Test 19	Academic Knowledge
Test 21	Sound Awareness

Reading Clusters

One reading cluster score, Broad Reading, is derived from the Standard Battery. The Standard and Extended Batteries used together provide two additional cluster scores: Basic Reading and Reading Comprehension.

Broad Reading

The Broad Reading cluster provides a comprehensive measure of reading achievement including reading decoding, reading speed, and the ability to comprehend connected discourse while reading. This cluster is a combination of Test 1: Letter-Word Identification, Test 2: Reading Fluency, and Test 9: Passage Comprehension. It has a median reliability of .93 in the age 5 to 19 range and .94 in the adult range.

Basic Reading Skills

The Basic Reading Skills cluster is a combination of Test 1: Letter-Word Identification and Test 13: Word Attack and provides a measure of basic reading skills. It is an aggregate measure of sight vocabulary, phonics, and structural analysis. This cluster has a median reliability of .93 in the age 5 to 19 range and .95 in the adult range.

Reading Comprehension

The Reading Comprehension cluster is a combination of Test 9: Passage Comprehension and Test 17: Reading Vocabulary and provides a measure of reading comprehension skills. It is an aggregate measure of comprehension, vocabulary, and reasoning. This cluster has a median reliability of .90 in the age 5 to 19 range and .94 in the adult range.

Oral Language Clusters

One oral language cluster score, Oral Language-Standard, is derived from the Standard Battery. Three additional cluster scores are formed using both the Standard and Extended Batteries: Oral Language-Extended, Listening Comprehension, and Oral Expression.

Oral Language-Standard

The Oral Language-Standard cluster is an aggregate measure of linguistic competency, listening ability, and comprehension. It is a combination of Test 3: Story Recall and Test 4: Understanding Directions. This cluster has a median reliability of .86 in the age 5 to 19 range and .92 in the adult range.

Oral Language-Extended

The Oral Language-Extended cluster is a combination of Test 3: Story Recall, Test 4: Understanding Directions, Test 14: Picture Vocabulary, and Test 15: Oral Comprehension. It is an aggregate measure of expressive vocabulary, reasoning, listening comprehension, and memory. This cluster has a median reliability of .91 in the age 5 to 19 range, and .95 in the adult range.

Listening Comprehension

The Listening Comprehension cluster is an aggregate measure of listening ability and verbal comprehension. It is a combination of Test 4: Understanding Directions and Test 15: Oral Comprehension. This cluster has a median reliability of .86 in the age 5 to 19 range and .94 in the adult range.

Oral Expression

The Oral Expression cluster is a combination of Test 3: Story Recall and Test 14: Picture Vocabulary. It is an aggregate measure of linguistic competency and expressive vocabulary. This cluster has a median reliability of .83 in the age 5 to 19 range and .91 in the adult range.

Math Clusters

Two math cluster scores, Broad Math and Math Calculation Skills, are derived from the Standard Battery tests. One additional cluster score, Math Reasoning, is formed using both the Standard and Extended Batteries.

Broad Math

The Broad Math cluster provides a comprehensive measure of math achievement including problem solving, number facility, automaticity, and reasoning. This cluster includes Test 5: Calculation, Test 6: Math Fluency, and Test 10: Applied Problems. It has a median reliability of .95 in the age 5 to 19 range and .96 in the adult range.

Math Calculation Skills

The Math Calculation Skills cluster is an aggregate measure of computational skills and automaticity with basic math facts and provides a measure of basic mathematical skills. Test 5: Calculation and Test 6: Math Fluency comprise this cluster. It has a median reliability of .90 in the age 5 to 19 range and .94 in the adult range.

Math Reasoning

The Math Reasoning cluster is a combination of Test 10: Applied Problems and Test 18: Quantitative Concepts and provides a measure of mathematical knowledge and reasoning. It is an aggregate measure of problem solving, analysis, reasoning, and vocabulary. This cluster has a median reliability of .95 in the age 5 to 19 range and .97 in the adult range.

Written Language Clusters

Two written language cluster scores, Broad Written Language and Written Expression, are derived from the Standard Battery. The Standard and Extended Batteries used together form one additional cluster score: Basic Writing Skills.

Broad Written Language

The Broad Written Language cluster provides a comprehensive measure of written language achievement including spelling of single-word responses, fluency of production, and quality of expression. Test 7: Spelling, Test 8: Writing Fluency, and Test 11: Writing Samples comprise this cluster. It has a median reliability of .94 in the age 5 to 19 range and .97 in the adult range.

Basic Writing Skills

The Basic Writing Skills cluster is a combination of Test 7: Spelling and Test 16: Editing and provides a measure of basic writing skills in both isolated and contextually based formats. It is an aggregate measure of spelling single-word responses and identifying and correcting errors in spelling, punctuation, capitalization, and word usage. This cluster has a median reliability of .94 in the age 5 to 19 range and .96 in the adult range.

Written Expression

The Written Expression cluster is an aggregate measure of meaningful written expression and fluency providing a measure of written expression skills. This cluster is a combination of Test 8: Writing Fluency and Test 11: Writing Samples. It has a median reliability of .88 in the age 5 to 19 range and .94 in the adult range.

Academic Knowledge Cluster

The Academic Knowledge cluster is the same as Test 19: Academic Knowledge. This is a broad sample of the individual's range of scientific knowledge, social studies knowledge, and cultural knowledge.

Special Purpose Clusters

One general academic proficiency cluster score, Total Achievement, is based on nine tests in the Standard Battery. Various combinations of tests in the Standard and Extended Batteries used together form four additional cluster scores: Academic Skills, Academic Fluency, Academic Applications, and Phoneme/Grapheme Knowledge. The three academic clusters (skills, fluency, and applications) contain tests of reading, math, and written language, and can be used to determine whether the person exhibits significant strengths and/or weaknesses among these three types of tasks across academic areas. The Phoneme/Grapheme Knowledge cluster provides in-depth diagnostic information about basic understanding of sound/symbol relationships.

Academic Skills

The Academic Skills cluster is an aggregate measure of reading decoding, math calculation, and spelling of single-word responses providing an overall score of basic achievement skills. It is a combination of Test 1: Letter-Word Identification, Test 5: Calculation, and Test 7: Spelling. This cluster has a median reliability of .95 in the age 5 to 19 range and .97 in the adult range.

Academic Fluency

The Academic Fluency cluster is a combination of Test 2: Reading Fluency, Test 6: Math Fluency, and Test 8: Writing Fluency and provides an overall index of academic fluency. This cluster has a median reliability of .93 in the age 6 to 19 range and .94 in the adult range.

Academic Applications

The Academic Applications cluster is a combination of Test 9: Passage Comprehension, Test 10: Applied Problems, and Test 11: Writing Samples. These three tests require the application of academic skills to academic problems. This cluster has a median reliability of .94 in the age 5 to 19 range and .96 in the adult range.

Phoneme/Grapheme Knowledge

The Phoneme/Grapheme Knowledge cluster is a combination of Test 13: Word Attack and Test 20: Spelling of Sounds. It may be used to evaluate an individual's proficiency with both phonic (sound) generalizations, as well as common orthographic patterns (frequently occurring letter clusters) in both decoding (reading) and encoding (spelling). Its median reliability is .89 in the age 5 to 19 range and .90 in the adult range.

Total Achievement

The Total Achievement cluster is a combination of the nine tests included in Broad Reading, Broad Math, and Broad Written Language and can be viewed as representing a person's overall performance across the various achievement domains. Its median reliability is .97 in the age 5 to 19 range and .98 in the adult range.