Overview

The Woodcock-Johnson® IV (WJ IV®) (Schrank, McGrew, & Mather, 2014a) consists of three assessment instruments: the Woodcock-Johnson IV Tests of Cognitive Abilities (WJ IV COG) (Schrank, McGrew, & Mather, 2014b); the Woodcock-Johnson IV Tests of Oral Language (WJ IV OL) (Schrank, Mather, & McGrew, 2014b); and the Woodcock-Johnson IV Tests of Achievement (WJ IV ACH) (Schrank, Mather, & McGrew, 2014a). Consult the appropriate Examiner's Manual or the Woodcock-Johnson IV Technical Manual (McGrew, LaForte, & Schrank, 2014) for comprehensive information about these three assessment instruments.

The WJ IV Tests of Cognitive Abilities consists of 18 tests organized into a standard and an extended battery. Tests 1 through 7 serve as a core set of tests. Table 1 provides an overview of the organization of the WJ IV COG.

Table 1.Organization of the WJ IV COG Tests

WJ IV TESTS OF COGNITIVE ABILITIES		
Cognitive Ability/Factor	Standard Battery	Extended Battery
Comprehension-Knowledge (Gc)	Test 1: Oral Vocabulary Test 8: General Information	
Fluid Reasoning (Gf)	Test 2: Number Series Test 9: Concept Formation	Test 15: Analysis-Synthesis
Short-term Working Memory (Gwm)	Test 3: Verbal Attention Test 10: Numbers Reversed	Test 16: Object-Number Sequencing Test 18: Memory for Words
Cognitive Processing Speed (Gs)	Test 4: Letter-Pattern Matching	Test 11: Number-Pattern Matching Test 17: Pair Cancellation
Auditory Processing (Ga)	Test 5: Phonological Processing	Test 12: Nonword Repetition
Long-term Retrieval (GIr)	Test 6: Story Recall	Test 13: Visual-Auditory Learning
Visual Processing (Gv)	Test 7: Visualization	Test 14: Picture Recognition

The Examiner Training Workbook provides a reference to facilitate administration and scoring of the WJ IV. This workbook is to be used in conjunction with the *Woodcock-Johnson IV Tests of Cognitive Abilities Examiner's Manual* (Mather & Wendling, 2014b), not in place of the manual. The content focuses on manual scoring options including (a) item-level scoring, (b) raw score calculation, and (c) obtaining estimated age and grade equivalents. An illustration of the uniqueness of the scores available in the WJ IV is presented. Important administration points required for correct raw score calculation are covered. This includes basal and ceiling rules and directions on scoring tests with sets or blocks of items or multiple parts.

To aid examiners in building competency with the test, Practice Exercises are included to reinforce mastery of basal and ceiling rules, raw score calculation, and determination of estimated age and grade equivalents. In addition, two reproducible checklists are included. The first is the WJ IV General Test Observations Checklist that may be used by an experienced examiner when observing a new examiner. The second, the WJ IV Tests of Cognitive Abilities Examiner Training Checklist, is a test-by-test form that may be used as an observation or self-study tool.

Basal and Ceiling Rules

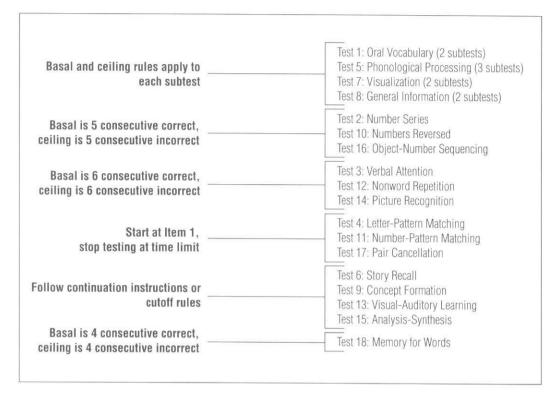
The purpose of basal and ceiling requirements is to limit the number of items administered but still be able to estimate, with high probability, the score that would have been obtained if all items were administered. By not administering items that are extremely easy or difficult, the number of administered items is minimized and the examinee's tolerance for the testing situation is maximized.

Many of the WJ IV COG tests require the examiner to establish a basal and a ceiling.

Exceptions are timed tests, such as Test 4: Letter-Pattern Matching, or tests with cutoffs, such as Test 9: Concept Formation. For some tests, all examinees begin with the sample item(s) and then proceed to Item 1; these tests require the examiner to establish a ceiling only (the basal is Item 1). Correct administration following the basal and ceiling rules is necessary to obtain the correct raw score. Figure 1 illustrates the basal and ceiling rules for each test in the WJ IV COG tests.

Figure 1.

Basal and ceiling rules for the WJ IV COG tests.



Meeting Basal and Ceiling Criteria

When required, the basal and ceiling criteria are included in each test in the Test Book and are stated briefly at the top of each test in the Test Record. Because the basal and ceiling criteria are not the same for each test, review the criteria before testing.

It is important to note that in cases where the basal criterion is not met on the first items administered, the examiner needs to test backward until either the basal is established or Item 1 is administered. If the specified number of correct responses is not obtained, Item 1 serves as the basal. In addition, if a ceiling criterion is not met, the examiner needs to continue testing until the last item is administered. The last item serves as the ceiling.

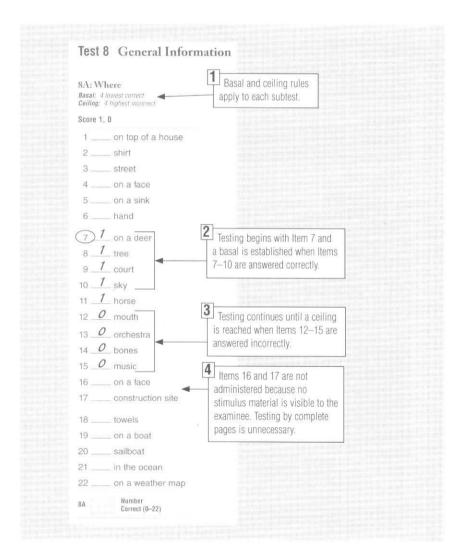
The best practice is to test by complete pages when stimulus material appears on the examinee's side of the Test Book. If an examinee reaches a ceiling in the middle of a test page and there is no stimulus material on the examinee's side, the examiner may discontinue testing. Because examinees do not see any of the pages that fall below the basal level or above the ceiling level, they are essentially unaware that there are other items in the test.

Applying Basal and Ceiling Rules to Subtests

Test 1: Oral Vocabulary, Test 5: Phonological Processing, Test 7: Visualization, and Test 8: General Information, consist of subtests (see Figure 1). The basal and ceiling rules apply to each of the subtests and all subtests in each test must be administered to obtain a score for that test. For each of the two subtests in Oral Vocabulary, the basal and ceiling rules are the same: the six lowest-numbered items correct, or Item 1, form the basal and the six highest-numbered items incorrect, or the last item, form the ceiling. For two of the three subtests

in Phonological Processing, 5A: Word Access and 5C: Substitution, the basal and ceiling rules are the same: six lowest-numbered items correct, or Item 1, form the basal and the six highest-numbered items incorrect, or the last item, form the ceiling. For subtest 5B: Word Fluency, both items are administered to all examinees and each item has a 1-minute time limit. Although each of the two subtests in Visualization has a different starting point, the ceiling rule is the same: five highest-numbered items incorrect, or the last item, form the ceiling. For the two subtests in General Information, the basal and ceiling rules are the same: the four lowest-numbered items correct, or Item 1, form the basal and the four highest-numbered items incorrect, or the last item, form the ceiling. Figure 2 illustrates the application of this principle for Test 8A: General Information-Where. Figure 2 also illustrates that testing by complete pages is unnecessary on tests that do not have stimulus material on the examinee's page. Testing began with Item 7 and the basal was established when the examinee answered Items 7 through 10 correctly. Testing continued until the examinee reached a ceiling when Items 12 through 15 were answered incorrectly. Because there are no stimuli visible to the examinee, the examiner did not need to complete the page, so Items 16 and 17 were not administered.

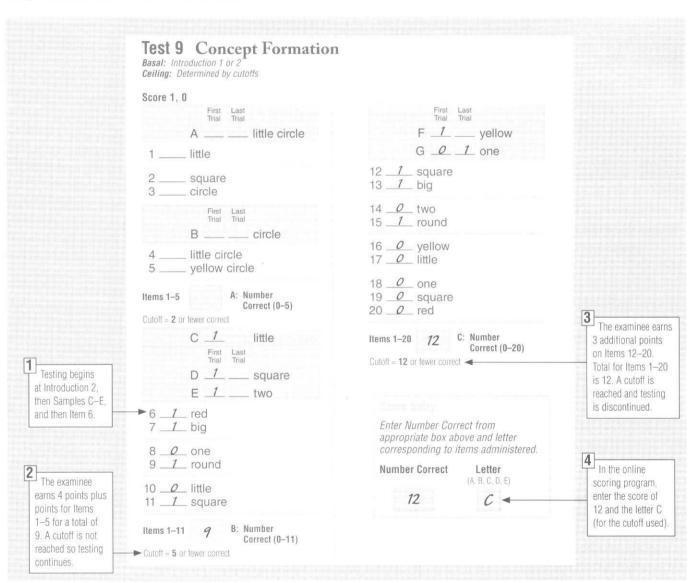
Figure 2.
Establishing a basal and ceiling on Test 8A: General Information—Where.



Following Cutoff Instructions

As noted in Figure 1, Test 9: Concept Formation does not have basal and ceiling rules, but rather it uses cutoff instructions. Figure 3 illustrates the application of the cutoff instructions in determining when to discontinue, or cutoff, administration of Test 9: Concept Formation. Testing began with Introduction 2, then Samples C through E, and then Item 6. On Items 6 through 11, the examinee got 4 correct. Note that the cutoff box after Item 11 indicates that the score entered is based on Items 1 through 11. Credit is given for Items 1 through 5 plus the 4 additional points earned on Items 6 through 11. The score of 9 is entered into the Number Correct box for Items 1 through 11. The cutoff instructions indicate that if 5 or fewer points were earned on Items 1 through 11, testing is discontinued. However, the examinee earned 9 points, so testing continues. On Items 12 through 20, the examinee earned 3 additional points. The cumulative total for Items 1 through 20 is 12. The cutoff instructions indicate that testing is discontinued at this point because the examinee earned 12 or fewer points on Items 1 through 20. When entering the score for Concept Formation in the online scoring program, include the letter of the cutoff as well as the number correct. In this case, the score would be 12 and the letter of the cutoff used would be C.

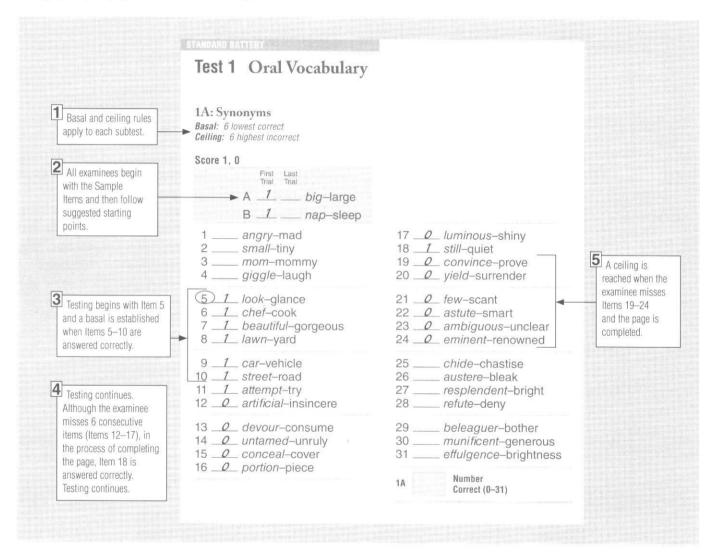
Figure 3.Using cutoff instructions on Test 9: Concept Formation.



Testing by Complete Pages Impacts Basal and Ceiling Rules

When stimulus material is visible on the examinee's page, the best practice is to test by complete pages. If a ceiling is reached in the middle of a page, testing should continue to complete that page. If the examinee answers any item correctly in the process of completing the page, testing should continue until a new ceiling is reached and the page is completed. Figure 4 illustrates this principle on Test 1A: Oral Vocabulary–Synonyms. Testing began with Item 5 and a basal was established when the examinee answered six consecutive items correctly (Items 5–10). Testing continued. Although the examinee answered six consecutive items incorrectly (Items 12–17), the examiner continued testing to complete the page because stimuli were visible to the examinee. In the process of completing the page, the examinee answered Item 18 correctly. Therefore, the examiner continued testing until the examinee missed six consecutive items and completed the page. The ceiling was reached when the examinee missed Items 19 through 24.

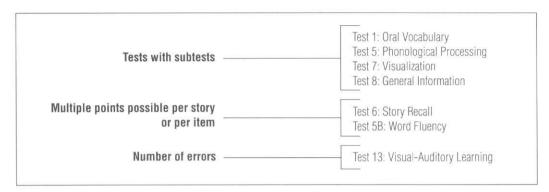
Figure 4.Testing by complete pages impacts basal and ceiling rules.



Computing the Raw Score

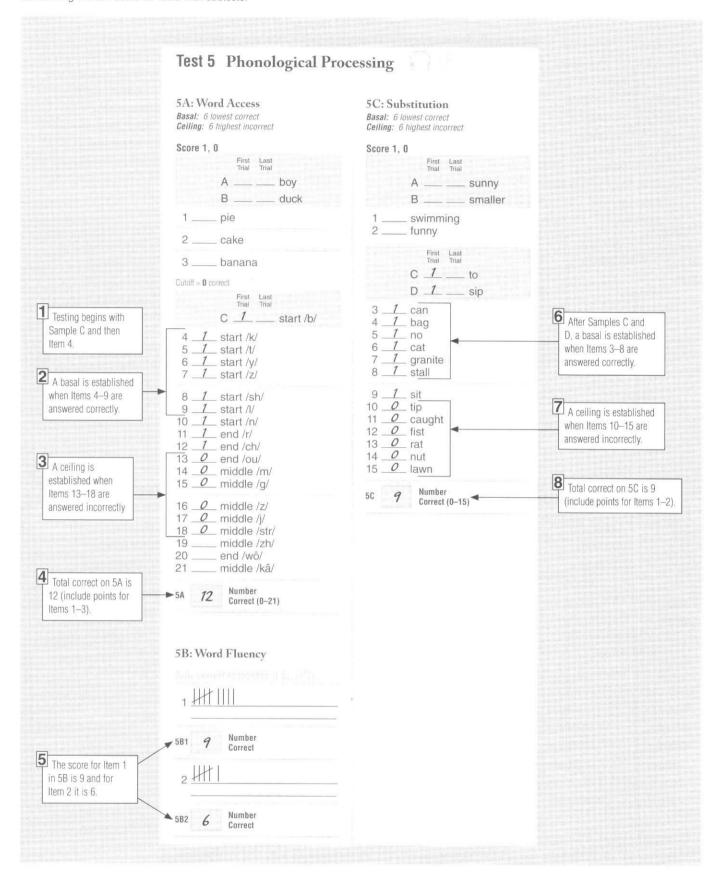
For most tests, the raw score is the number of correct responses, with each correct item receiving 1 point. There are several exceptions in the WJ IV COG as noted in Figure 5. Correct calculation of the raw score is essential to obtain accurate results. Figures 6, 7, and 8 illustrate each of the exceptions in calculating raw scores.

Figure 5.Tests with special procedures for computing the raw score.



Calculating the Raw Score for Tests With Subtests

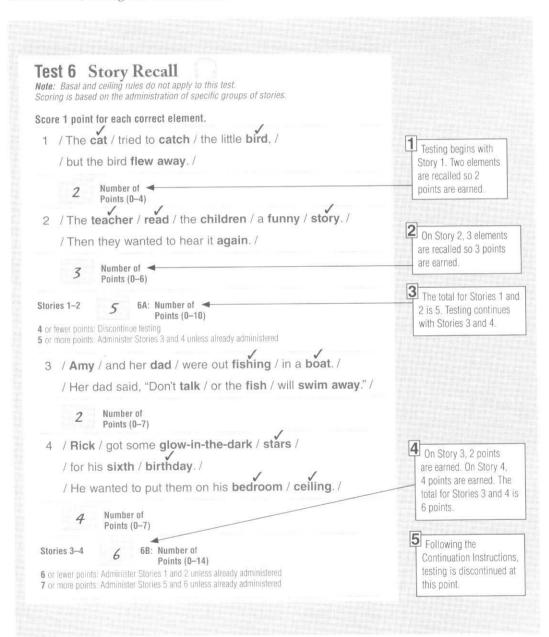
For tests consisting of subtests (Tests 1, 5, 7, and 8), all subtests must be administered to obtain an accurate raw score. Figure 6 illustrates how to calculate the raw score for Test 5: Phonological Processing, which consists of 5A: Word Access, 5B: Word Fluency, and 5C: Substitution. Because suggested starting points are available for subtests 5A and 5C, not all examinees begin with Item 1. In these cases, it is important to give credit for any unadministered items below the basal. In this example, testing for subtest 5A: Word Access begins with Sample C and then Item 4. Items 4 through 9 are correct, so a basal (six lowest-numbered items administered correct) is established. Testing continues until a ceiling is reached when Items 13 through 18 are answered incorrectly. There is no need to complete the page because no stimuli are visible to the examinee. When calculating the raw score, count the number of correct responses and add 1 point for each item below the basal (Items 1 through 3). The Number Correct for 5A: Word Access is 12. For subtest 5B: Word Fluency, there are two timed items and both must be administered. The Number Correct for Item 1 is 9 and for Item 2 is 6. For subtest 5C: Substitution, testing begins with Samples C and D and then Item 3. Items 3 through 8 are correct so a basal is established. Testing continues until a ceiling is reached when Items 10 through 15 are incorrect. When calculating the raw score, count the number of correct responses and add 1 point for each item below the basal (Items 1 and 2). The Number Correct for 5C: Substitution is 9. When using the scoring program, enter the separate scores for each subtest. For subtest 5B: Word Fluency, enter the number correct for each item. When obtaining the estimated age and grade equivalents from the "Scoring Table" in the Test Record, sum all of the scores. (See Obtaining Estimated Age- and Grade-Equivalent Scores.)



Calculating the Raw Score for Tests With Multiple Points

For tests that have multiple points possible per item (Test 5B: Word Fluency) or per story (Test 6: Story Recall), all points earned are recorded. Figure 7 illustrates this process for Test 6: Story Recall. Testing began with Story 1. (Note that check marks are placed above the recalled elements.) The examinee recalled two of the four elements so a score of 2 points was recorded for Story 1. On Story 2, the examinee recalled 3 of the 6 elements so a score of 3 points was recorded for Story 2. The cumulative total of 5 points for Stories 1 and 2 is used to determine whether testing continues or is discontinued. The Continuation Instructions indicate that if 5 or more points are scored, testing continues with Stories 3 and 4. On Story 3 the examinee recalled 2 elements and on Story 4 the examinee recalled 4 elements for a cumulative total of 6 points. Following the Continuation Instructions, when 6 or fewer points are earned on Stories 3 and 4, Stories 1 and 2 are administered. Because Stories 1 and 2 had already been administered, testing was discontinued.

Figure 7.
Calculating the raw score for tests with multiple points possible.



Calculating the Raw Score Based on Number of Errors

One test, Test 13: Visual-Auditory Learning, uses the number of errors as the raw score. Figure 8 illustrates how to calculate the raw score for Test 13: Visual-Auditory Learning. To obtain the score, count the errors (circled words). Figure 8 also indicates how to apply the cutoff rules.

All examinees begin with Test Story 1. Because no words are circled in Test Story 1, the score for Story 1 is 0, meaning no errors. Testing continues because the cutoff of 5 or more errors is not met. There is one error in Test Story 2, so the total number of errors for Test Stories 1 and 2 is 1. The cutoff for Test Stories 1 and 2 is 9 or more errors, so testing continues. The examinee makes 2 errors on Test Story 3 and 3 errors on Test Story 4. On Test Stories 1 through 4 the examinee has a cumulative total of 6 errors (cutoff for Test Stories 1 through 4 is 18 or more errors). This total is entered in the third shaded box and testing continues. After Test Stories 5 and 6 are administered, the cumulative total of errors is 15. Because the cutoff for Test Stories 1 through 6 is 31 or more errors, testing continues with Test Story 7. The total number of errors for all seven stories is 24. In this example, the examinee never reaches a cutoff level so all items are administered. The number of errors and the set of stories administered must be indicated for entry in the scoring program. Because Test Stories 1 through 7 were administered, the letter E was entered.

Important Reminders

- 1. Do not include sample items or practice exercises in the raw score.
- 2. Include 1 point for each unadministered item below the basal for Tests 1, 2, 5A, 5C, 7B, 8, 10, 12, 16, and 18.
- 3. Base raw score on number of errors for Test 13.
- 4. Give 1 point for each element recalled correctly on Test 6.
- 5. Administer all subtests for Tests 1, 5, 7, and 8 to obtain accurate raw scores.
- 6. Adhere to time limits on Tests 4, 11, and 17.
- 7. Apply basal and ceiling rules correctly.
- 8. Follow cutoff and continuation instructions carefully on Tests 6, 9, 13, and 15.
- 9. Test by complete pages when stimulus material is visible on the examinee's page.
- 10. Enter the raw score (Number Correct, Number of Points, or Number of Errors) in the tinted box at the end of each test or subtest in the Test Record.

Obtaining Estimated Age- and Grade-Equivalent Scores

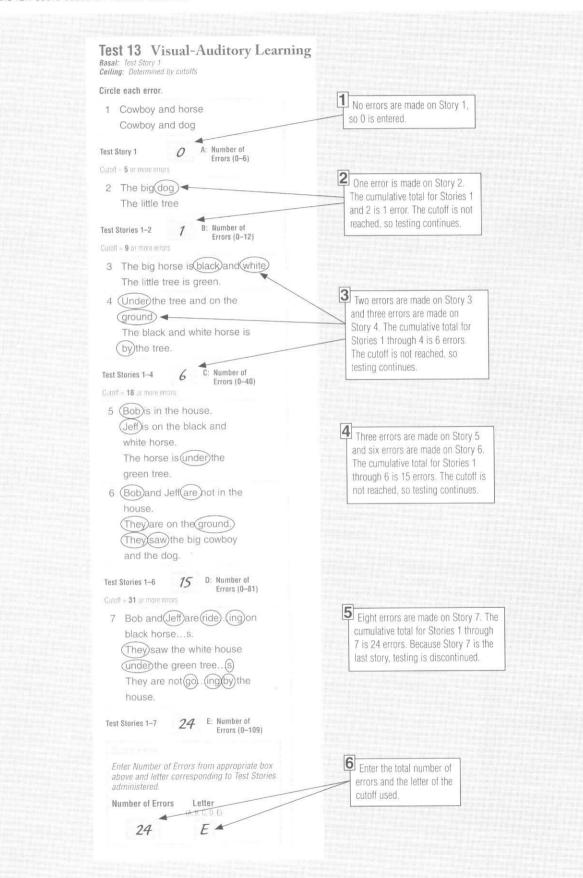
After the raw score is calculated, estimated age- and grade-equivalent scores are obtained by using the "Scoring Tables" in the Test Record. For each test, locate the examinee's raw score and encircle the entire row for that raw score. The last two columns indicate the estimated age equivalent (AE) and grade equivalent (GE). Estimated scores are available for all tests.

The only scores available manually are the estimated age- and grade-equivalent scores and raw scores for the individual tests. The purpose of these estimated scores is to give examiners immediate feedback regarding the examinee's level of performance. These results may suggest the need to adjust starting points on remaining tests or the need for further testing. The online score report provides precise age- and grade-equivalent scores for all tests and clusters.

To find estimated age- and grade-equivalent scores on tests with multiple subtests, such as Test 1: Oral Vocabulary, add together the Number Correct for each of the subtests. (Note: When the online scoring program is used, the Number Correct for each subtest is entered individually rather than summing the subtest scores.)

Figure 9 illustrates the completion of this step for a fourth-grade boy on Test 1: Oral Vocabulary. He has 9 correct on 1A: Synonyms and 12 correct on 1B: Antonyms for a total

Figure 8.
Calculating the raw score based on number of errors.



of 21. Locate 21 in the first column (Total Number Correct) of the "Scoring Table." Encircle that entire row, which includes the estimated age- and grade-equivalent scores. The estimated age equivalent is 8 years 4 months (8-4) and the estimated grade equivalent is 2.9.

Figure 10 illustrates how to obtain the estimated age- and grade-equivalent scores when there are different columns to consult for the raw score. This occurs when there are cutoffs or blocks of items that must be administered, as in Tests 6, 9, 13, and 15. In this example for Test 9: Concept Formation, testing was discontinued after Item 29 because the cutoff criterion (18 or fewer correct) was reached at that point. On Items 1 through 29, the examinee earned a total of 17 points. On the "Scoring Table," locate the column for Items 1 through 29. Within that column, locate 17 and encircle the row. Ignore the 18 in the next column for Items 1 through 40 because all of those items were not administered. For 17 correct on Items 1 through 29, the estimated age equivalent is 7 years 8 months (7-8) and the estimated grade equivalent is 2.2.

Figure 9.
Obtaining the estimated age equivalent and grade equivalent for Test 1: Oral Vocabulary.

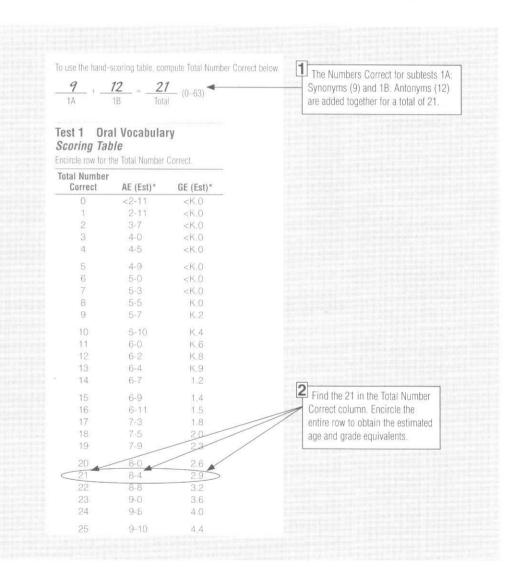
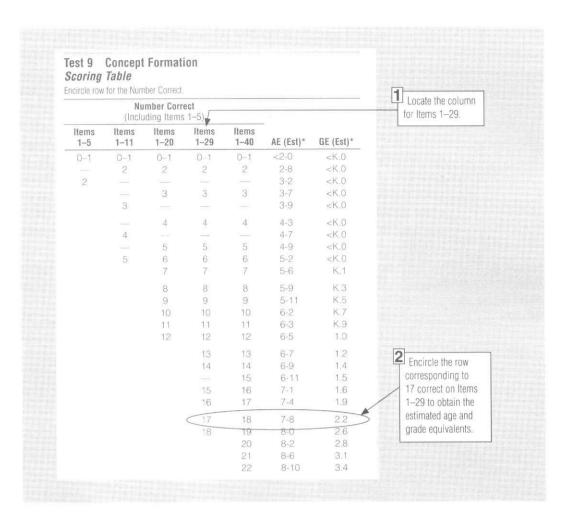


Figure 10.
Obtaining the estimated age equivalent and grade equivalent for Test 9:
Concept Formation.



Using the Woodcock-Johnson Online Scoring and Reporting Program

The Woodcock-Johnson online scoring and reporting program (Schrank & Dailey, 2014) calculates all derived scores, variations, and comparisons and reports them in a table of scores. Examiners enter identifying information, raw scores, and "Test Session Observations Checklist" information directly from the Test Record. The examinee's chronological age and grade placement are automatically calculated. Examinee data can be saved. Consult the Woodcock-Johnson Scoring and Reporting Guide for detailed information about the online scoring program.

Uniqueness of Scores

It is important that examiners understand the various scores available. There are four different levels of information in the WJ IV (consult the Examiner's Manual). Scores from each level provide different information and are not interchangeable. Table 2 illustrates this point for an individual who is 9 years 1 month of age and is in grade 3.8. In the first example, the child has a standard score of 90 and a percentile rank of 25 on the Number Facility cluster. The standard score/percentile rank communicates relative standing in a peer group. If the standard scores and percentile ranks are the only scores considered, valuable information will be missed. Proficiency or functionality on tasks is best described by the Relative Proficiency Index (RPI). Developmental or instructional information is best communicated by the age or grade equivalents and corresponding profiles. In this example,

although the person's relative standing is in the average range his actual performance on the task is below average, reflected in the age equivalent of 7-11, the grade equivalent of 2.5, and the RPI of 67/90. His relative standing is average (SS = 90) but his proficiency on the task is limited (RPI = 67/90).

In the second example, the child has a below-average standard score of 81 on the Long-term Retrieval cluster and percentile rank of 11. Although his relative standing is below average (SS = 81), his proficiency (RPI = 74/90) is in the limited to average range. Such score differences occur for three reasons: (1) different abilities develop at different rates, (2) population variance differs from ability to ability, and (3) population variance differs from age to age for the same ability.

Table 2.Uniqueness of Scores

Score	Number Facility	Long-term Retrieval
Percentile Rank/Standard Score	25/90	11/81
Age Equivalent	7-11	6-7
Grade Equivalent	2.5	1.2
Relative Proficiency Index	67/90	74/90
Skill Level	Limited	Limited to Average

For more information, see the Woodcock-Johnson IV Scoring and Reporting Guide.

Building Examiner Competency

Any person administering the WJ IV COG needs thorough knowledge of the exact administration and scoring procedures. To become proficient, examiners need to study the test material, including the Examiner's Manual, Test Books, and the Examiner Training Workbook. Additionally, the examiner needs to conduct practice administrations until administration is fluent and error-free.

Checklists

Use the reproducible checklists provided in this workbook (also available in Appendixes B and C of the Examiner's Manual) to build competency in scoring and administering the WJ IV COG. Both checklists are designed as observation or self-study tools to ensure proper administration. Permission is granted to reproduce the checklists for use in training or for self-study.