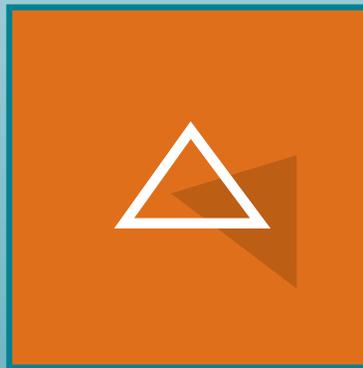
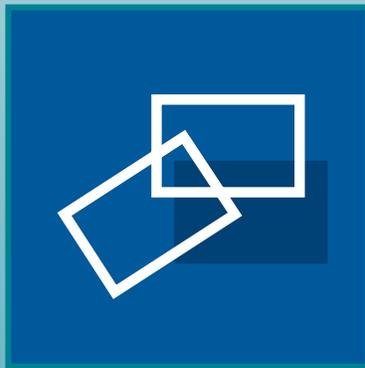


Stanford
BINET

Intelligence Scales
Fifth Edition



Gale H. Roid

Online Scoring and Report System
User's Guide



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Stanford
BINET
Intelligence Scales
Fifth Edition

Online Scoring and Report System User's Guide

Introduction to the SB5 Online Scoring and Report System

The *Stanford-Binet Intelligence Scales–Fifth Edition* (SB5; Roid, 2003) is an individually administered assessment of intelligence and cognitive abilities for individuals ages 2 through 85+ years. The complete scale, the Full Scale IQ, consists of all 10 subtests. The Abbreviated Battery IQ Scale consists of two routing subtests—Object Series/Matrices and Vocabulary—and can be used for assessments such as neuropsychological examinations in which an additional battery of tests supplements the SB5. The Nonverbal IQ is based on the five nonverbal subtests associated with each of the five cognitive factors measured by the SB5. It can be used to assess deaf or hard-of-hearing individuals as well as individuals with communication disorders, autism, specific learning disabilities, limited English-language background, traumatic brain injury, and other conditions that may constrain linguistic ability, such as aphasia or stroke. The SB5 also offers a Verbal IQ Scale that complements the Nonverbal IQ Scale. The Verbal IQ Scale is used for standard, full-scale administrations as well as for special cases where subjects have limited vision, orthopedic impairment, or other conditions that interfere with completion of the Nonverbal IQ Scale. Each subtest yields a scaled score with a mean of 10 and a standard deviation of 3. The Nonverbal IQ, Verbal IQ, and Full Scale IQ Scales yield a standard score with a mean of 100 and a standard deviation of 15.

The test is described completely in the *Stanford-Binet Intelligence Scales–Fifth Edition* Examiner's Manual and the *Stanford-Binet Intelligence Scales–Fifth Edition* Technical Manual, and you should read these manuals carefully before using this software. The information provided in this User's Guide describes the purposes of the *SB5 Online Scoring and Report System* and goes through the steps involved in using this software.

Purposes of the SB5 Online Scoring and Report System

The *SB5 Online Scoring and Report System* was designed to be a quick, efficient tool for (a) converting SB5 subtest item scores or total raw scores into scaled scores; (b) generating composite standard scores, percentile ranks, and

upper and lower confidence intervals; (c) comparing SB5 performances to identify significant intraindividual differences; and (d) obtaining a narrative report with a completed first page of the SB5 Record Form and graphs of results.

Converting Subtest Raw Scores Into Scaled Scores

The SB5 Online Scoring and Report System converts either individual subtest level scores or total raw scores to standard scores having a mean of 10 and a standard deviation of 3.

Generating Composite Standard Scores

The subtest scaled scores are automatically combined to generate Nonverbal IQ Scale, Verbal IQ Scale, and Abbreviated Battery IQ Scale standard scores. The Nonverbal and Verbal scaled scores are automatically combined to create the Full Scale IQ score. All of the composite scores have a mean of 100 and a standard deviation of 15.

Making IQ and Factor Index Comparisons

The student's performance on the IQ scales (i.e., Full Scale, Nonverbal, Verbal, and Abbreviated IQ) and the factor index scores (i.e., Fluid Reasoning, Knowledge, Quantitative Reasoning, Visual Spatial, and Working Memory) can be compared both individually and to the student's average to determine if a difference is statistically significant and to calculate the percentage of the normative sample that had a difference that large. For more detailed information, you are encouraged to read Chapter 5, Basic Interpretation of Scores, in the SB5 Examiner's Manual.

Generating Change-Sensitive Scores and Age Equivalents

The Nonverbal and Verbal raw scores are automatically combined to create the IQ and Factor Index change-sensitive scores (CSS), age equivalents, and CSS confidence interval scores.

Using the SB5 Online Scoring and Report System

This section includes a discussion of (a) initial setup procedures, including how to enter examiners; (b) how to enter examinee identifying information; (c) how to enter level or total scores; (d) how to view scores and IQ and Factor Index comparisons; (e) how to enter behavioral observations; (f) how to view scores; and (g) how to generate and print reports.

Initial Setup

The first time you navigate to the *SB5 Online Scoring and Report System*, you will see the screen shown in Figure 1. You will be required to accept the SB5 Users License Agreement before proceeding. Do this by clicking the link below the license window.

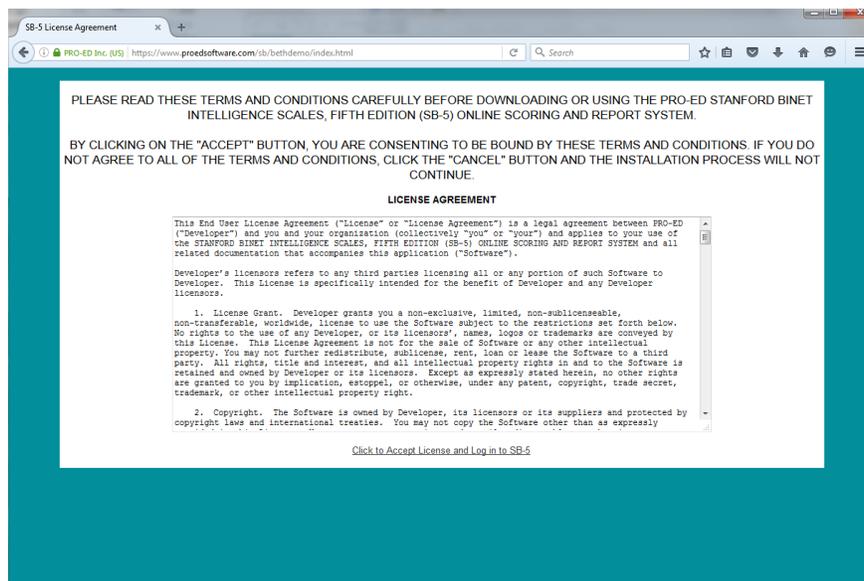


Figure 1

A temporary user name and password are provided to you when you purchase the software. Enter your temporary user name, and then select Connect to SB5. You will then be taken to the SB5 Examinee Selection screen (see Figure 2).

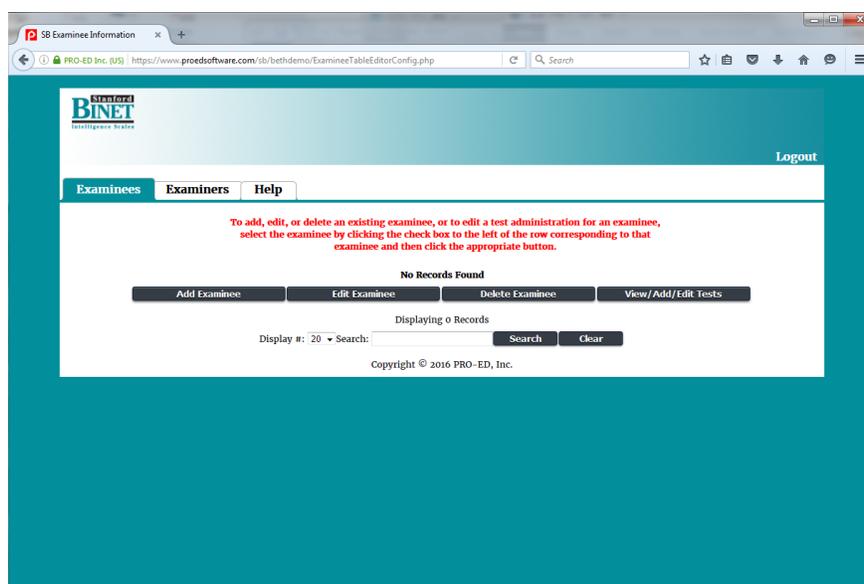


Figure 2

The Examinee Selection screen allows you several navigation choices. You can add, edit, or delete an examinee's information, add or edit an examiner's information, review the help files, or log out. You can choose an action from any one of the menus that appear across the top of the screen.

Before using the SB5 software, you will need to designate examiners and the level of access each examiner should have. Level of access is set by assigning a role to an examiner. Two role types—administrator and examiner—are available in the system. An administrator has the ability to add examinees and test administrations, add examiners or make examiners inactive, and change the password for any examiner in the system. An examiner can add examinees and test administrations, and can change his or her own password. You should set up at least one examiner to be an administrator, but you can have more than one administrator. By default, the Temp User account is granted administrator rights.

To edit or set up examiners, click on the Examiners tab. This will take you to the Examiner Selection screen (see Figure 3). To update the primary examiner information, click on the check box adjacent to the row for Temp User then click the Edit Examiner button. The Temp User information will now be editable (see Figure 4). When

you have updated the administrator/primary examiner information, click the Update button to save your information or the Cancel button to cancel your changes. NOTE: For security reasons, you should always replace the temporary user name and password that were set up for initial log-in with a permanent user name and secure password. Once you enter and save a user name and password, the password will appear encrypted when you return to edit the examiner. To change the password, simply replace the encrypted text with the password of your choosing and click the Update icon. If you forget your password, any individual with administrator access to this licensed version of the software can log in and change the password for you.

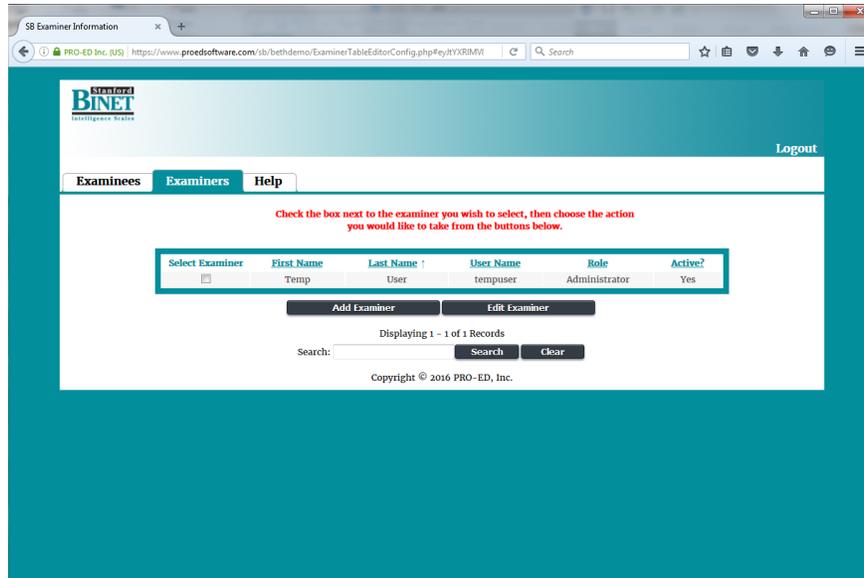


Figure 3

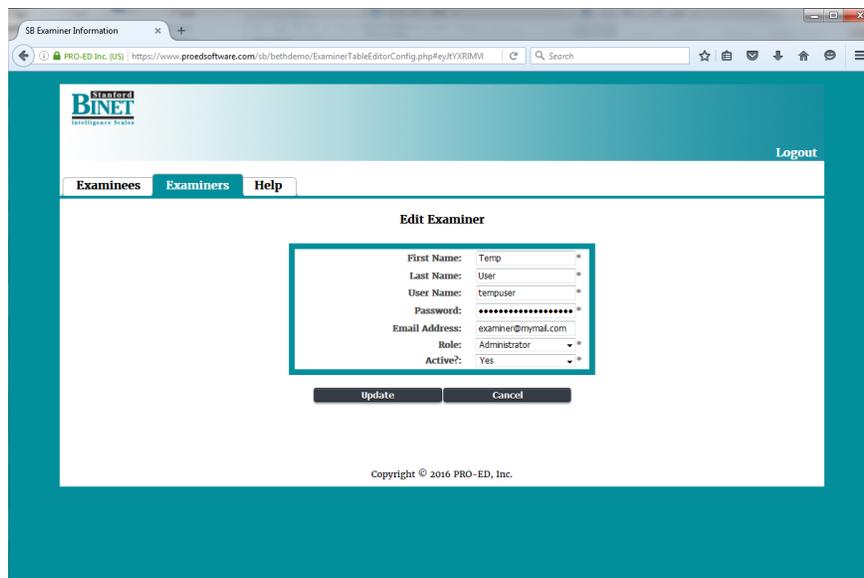


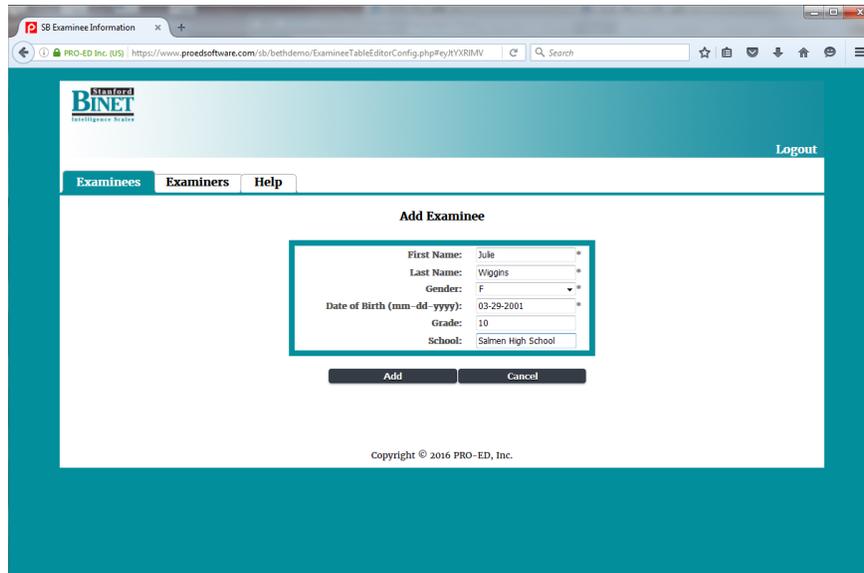
Figure 4

Your base software includes a license for up to five users (you may purchase additional user licenses at www.proedinc.com) who can use the software concurrently. Each user should have a unique user name and password and unique user information. You can have as many administrators or examiners as you have licensed users, but you should always have at least one administrator. To add additional administrators/examiners, simply complete the blank fields at the top of the columns and click on the Add Examiner button to save your changes. If you need to remove an examiner later, simply select the examiner by clicking the check box adjacent to his or her name, click Edit Examiner, set the examiner’s account to inactive by using the pull-down menu under the column titled “Active?,” and click the Update button. Inactive user information will appear in red text.

Adding, Editing, and Viewing Examinees

In the *SB5 Online Scoring and Report System*, you need enter an examinee only one time. Once an examinee is in the system, additional SB5 results can be entered by selecting the examinee from the existing examinee list, clicking the check box adjacent to his or her name, and clicking the View/Add/Edit Tests button.

To enter a new examinee, click the Add Examinee button and complete the blank fields in the box on the screen, then click the Add button (see Figure 5). This will take you to a new test administration for this examinee (see Figure 6).

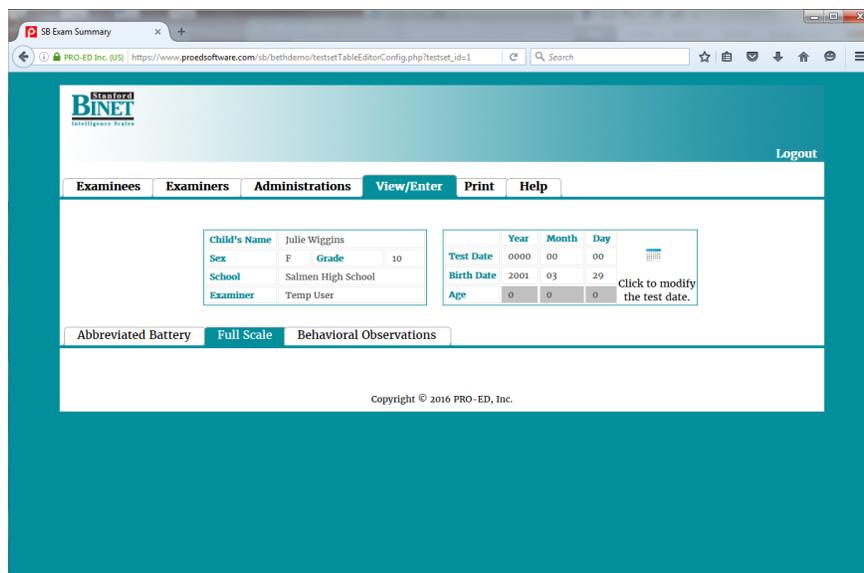


The screenshot shows a web browser window with the URL <https://www.proedsoftware.com/sb/bethdemo/ExamineeTableEditorConfig.php?eyjYXRIMV>. The page has a teal header with the BINET logo and a 'Logout' link. Below the header are tabs for 'Examinees', 'Examiners', and 'Help'. The main content area is titled 'Add Examinee' and contains a form with the following fields:

First Name:	Julie
Last Name:	Wiggins
Gender:	F
Date of Birth (mm-dd-yyyy):	03-29-2001
Grade:	10
School:	Salmen High School

At the bottom of the form are two buttons: 'Add' and 'Cancel'. The footer of the page reads 'Copyright © 2016 PRO-ED, Inc.'

Figure 5



The screenshot shows a web browser window with the URL https://www.proedsoftware.com/sb/bethdemo/testsetTableEditorConfig.php?testset_id=1. The page has a teal header with the BINET logo and a 'Logout' link. Below the header are tabs for 'Examinees', 'Examiners', 'Administrations', 'View/Enter', 'Print', and 'Help'. The main content area displays a summary for Julie Wiggins:

Child's Name	Julie Wiggins		
Sex	F	Grade	10
School	Salmen High School		
Examiner	Temp User		

Year	Month	Day	
0000	00	00	
Birth Date	2001	03	29
Age	0	0	0

There is a calendar icon next to the Birth Date field with the text 'Click to modify the test date.' Below the summary are tabs for 'Abbreviated Battery', 'Full Scale', and 'Behavioral Observations'. The footer of the page reads 'Copyright © 2016 PRO-ED, Inc.'

Figure 6

Before you enter any test scores, the date of testing must be entered. To do this, simply click on the Test Date fields and enter the data, or on the calendar icon beside it and select the month, year, and day of testing. The software will automatically save the test date and calculate chronological age once you select a day of testing. If you need to edit the test date, simply click the calendar icon and repeat these steps.

Existing examinees can be sorted for easy searching by clicking on the underlined header above any column. For example, by default the existing examinee list is sorted by last name. However, if you wish to sort the list by first name, simply click on the header link titled First Name, and the program will sort the data by the examinees' first names in ascending (i.e., alphabetical) order. If you wish to sort in descending order (i.e., from

Z to A), simply click the First Name header link a second time, and the list will be updated. The sorted field will display an arrow to the right of the field name. Existing examinees can be searched for by using the search field at the bottom of the list. If you wish to edit examinee information, select that existing examinee by clicking on the check box adjacent to his or her name, then click the Edit Examinee button.

Entering Performance Data

The *SB5 Online Scoring and Report System* allows you to enter either individual level scores or total raw scores. You can enter scores for a single subtest or as many subtests as desired. The software will calculate subtest scaled scores and composite scores where possible.

Subtest Total Scores. To enter subtest total scores, simply complete the blank Raw Score Total fields for the subtests that were administered. You can advance between fields by clicking the tab button. The scaled scores and composite scores will automatically be calculated as you progress through data entry (see Figure 7). If you administer the Abbreviated Battery of two subtests, simply leave blank the fields for the subtests that were not given.

The screenshot shows the 'View/Enter' tab in the SB5 Exam Summary application. The interface includes a navigation menu with options: Examinees, Examiners, Administrations, View/Enter (selected), Print, and Help. A 'Logout' link is in the top right. Below the menu, there are fields for entering total raw scores below, including Child's Name (Julie Wiggins), Sex (F), Grade (10), Test Date (2016-03-02), Birth Date (2001-03-29), Age (14-11-3), School (Salmen High School), and Examiner (Temp User). A note says 'Click on the calendar icon to modify the test date.' Below this are tabs for 'Abbreviated Battery', 'Full Scale', and 'Behavioral Observations'. The 'Full Scale' tab is active, showing two main sections: 'Subtest Performance' and 'Composite Performance'. The 'Subtest Performance' section has two tables: 'Nonverbal (NV) Domain' and 'Verbal (V) Domain'. Each table has columns for subtests (FR, KN, QR, VS, WM) and rows for levels (Level 1-6) and 'Raw Score Total'. The 'Composite Performance' section has a table with columns for 'Sum of Scaled Scores', 'Standard Score', 'Percentile Rank', and '90% CI' (LL, UL). Below this is a section for 'Change-Sensitive Scores, Standard Error, and Age Equivalent' with a 'Raw Score Totals' table and a table for 'CSS', 'SE', and 'AE' scores.

Figure 7

Subtest Level Scores. To enter subtest level data, simply complete the blank Level fields for the subtests that were administered. To advance to the next subtest within each level, click the tab button. Figure 8 illustrates the completed Nonverbal and Verbal Domains using level scores.

Entering Test Session Behavioral Observations

The *SB5 Online Scoring and Report System* allows you to enter the test session validity information and behavioral observations recorded on page 2 of the SB5 Record Form. You can enter as much or as little information as desired. The software will report this information in both the Standard and Detailed Summary Reports. To enter this data, navigate to the Behavioral Observations screen by clicking its respective tab.

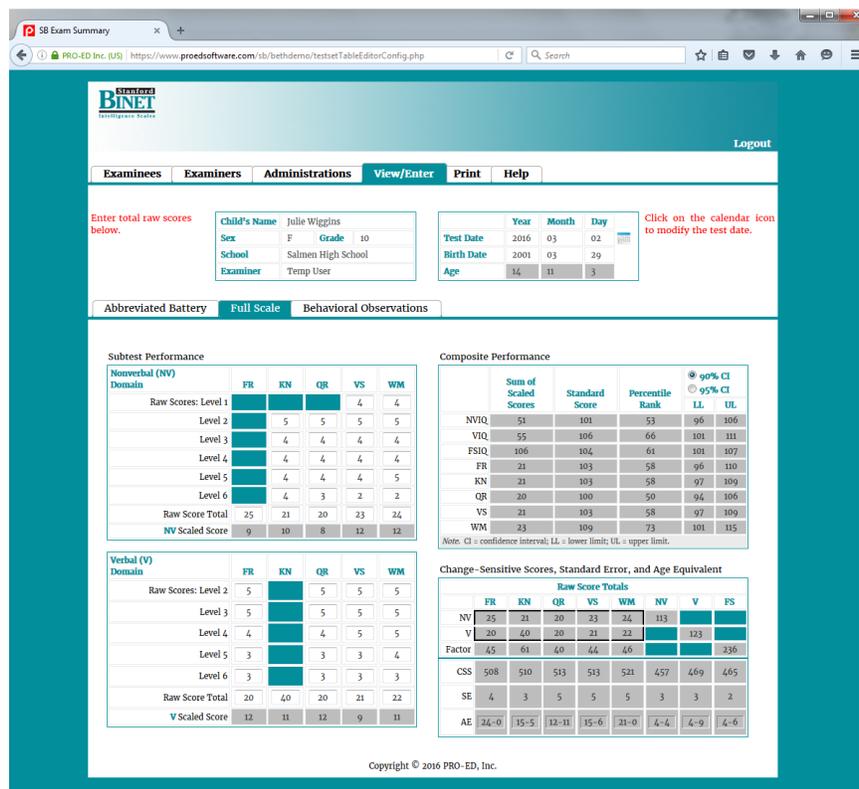


Figure 8

Viewing Scores

Once all domain level or subtest raw score total data have been entered, all available composites will be automatically calculated and displayed on the right side of the Full Scale screen. To review the Abbreviated Battery IQ scores and Change-Sensitive Scores, navigate to the Abbreviated Battery screen by clicking the Abbreviated Battery tab. Figure 8 illustrates a completed score example for Julie.

Generating Reports

The *SB5 Online Scoring and Report System* can generate a document that contains the data normally completed on pages 1 and 2 of the SB5 Record Form and a multipage interpretive report of all scores available. You can also generate a Descriptive Report that provides a summary of all of the IQ and Factor Index scores available on the SB5. To generate a report for printing or editing, click on the Print menu and select the type of document you want to generate (Standard Summary, Detailed Summary, or Descriptive Report) and what format you prefer for the report (MS Word or PDF). The following pages (see Figures 9, 10, and 11) illustrate all three reports.

If you have any questions about using the software, contact PRO-ED at testquestion@proedinc.com.

References

Roid, G. H. (2003). *Stanford-Binet intelligence scales* (5th ed.). Austin, TX: PRO-ED.

Student's Name: Julie Wiggins Sex: Female
 Examiner: Temp User
 School/Agency: Salmen High School Grade: 10

Stanford BINET

Intelligence Scales
Fifth Edition
Record Form

	Year	Month	Day
Testing Date	2016	03	02
Birth Date	2001	03	29
Age	14	11	3

Nonverbal (NV) Domain

	FR	KN	QR	VS	WM	
Raw Scores: Level 1				4	4	
Level 2		5	5	5	5	
Level 3		4	4	4	4	
Level 4		4	4	4	4	
Level 5		4	4	4	5	
Level 6		4	3	2	2	
Raw Score Total	25	21	20	23	24	Nonverbal Sum of Scaled Scores
NV Scaled Score	9	10	8	12	12	51

Verbal (V) Domain

	FR	KN	QR	VS	WM	
Raw Scores: Level 2	5		5	5	5	
Level 3	5		5	5	5	
Level 4	4		4	5	5	
Level 5	3		3	3	4	
Level 6	3		3	3	3	
Raw Score Total	20	40	20	21	22	Verbal Sum of Scaled Scores
V Scaled Score	12	11	12	9	11	55

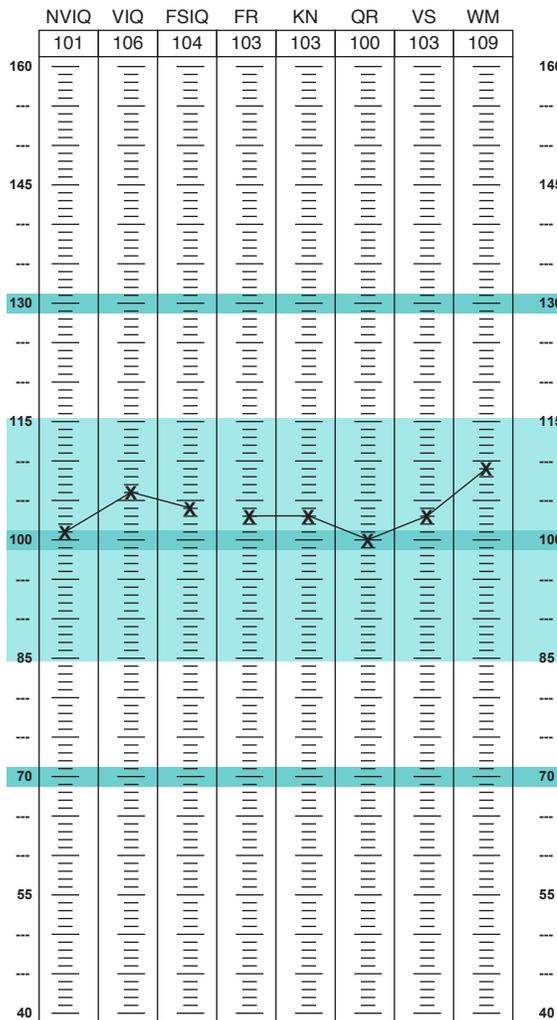
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	FR	KN	QR	VS	WM
Sum of NV and V Scaled Scores	21	21	20	21	23

	Sum of Scaled Scores	Standard Score	Percentile Rank	90% Confidence Interval
NVIQ	51	101	53	96 to 106
VIQ ⁺	55	106	66	101 to 111
FSIQ ⁼	106	104	61	101 to 107
FR	21	103	58	96 to 110
KN	21	103	58	97 to 109
QR	20	100	50	94 to 106
VS	21	103	58	97 to 109
WM	23	109	73	101 to 115

Composite Profile—Standard Scores



Subtest Profile—Scaled Scores

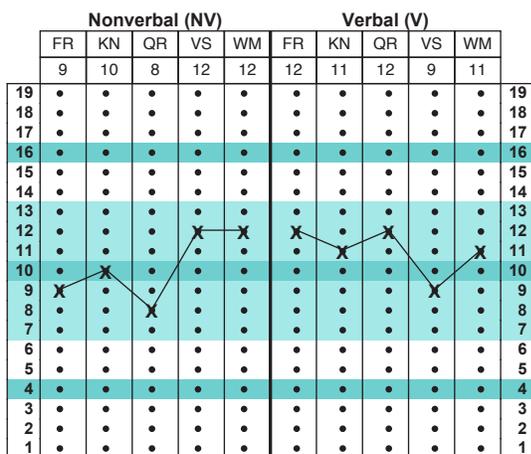


Figure 9

figure continues

Calculation of the Abbreviated Battery IQ

For the Abbreviated Battery IQ (ABIQ) to the right, enter the scaled scores for Nonverbal FR and Verbal KN from the previous page. Sum the two scores and use the ABIQ table in Appendix B to determine the standard score, percentile rank, and confidence interval.

NV FR Scaled Score	+	V KN Scaled Score
9		11
=		
ABIQ Sum of Scaled Scores		20
	Standard Score	Percentile Rank
	90% Confidence Interval	
ABIQ	100	50
		93 to 107

Calculation of Change-Sensitive Scores and Age Equivalents

To calculate the change-sensitive scores (CSS), first record the raw scores from the previous page for the appropriate subtests. Then sum the column scores for each factor and the row scores for each IQ. Locate the appropriate tables in Appendix C to determine each CSS, SE, and corresponding age equivalent.

	FR	KN	QR	VS	WM	NV	V	FS
NV Raw Score Total	25 +	21 +	20 +	23 +	24	= 113		
V Raw Score Total	20 +	40 +	20 +	21 +	22	=	123	
Factor Raw Score Total	45 +	61 +	40 +	44 +	46	=		236
CSS	508	510	513	513	521	508	512	510
SE	4	3	5	5	5	3	2	2
Age Equivalent	24-0	15-5	12-11	15-6	21-0	14-7	15-8	16-2

Change-Sensitive Scores (CSS) for the Abbreviated Battery (AB)

	AB
NV FR Raw Score Total	25
V KN Raw Score Total	40
Sum of Raw Scores	65
CSS	507
SE	3
Age Equivalent	17-0

Test Session Behavioral Observations

Test Session Validity

- Yes No Julie's English usage was adequate for testing.
- Yes No Julie adequately understood instructions.
- Yes No Julie's vision was adequate for testing.
- Yes No Julie's motor abilities were adequate for testing.
- Yes No Julie's health was adequate for testing.
- Yes No Julie was adequately cooperative.
- Yes No Testing conditions were adequate.
- Yes No Test session is considered a valid representation of Julie's current functioning.

Notes & Observations

Examinee's Physical Appearance (health, nutrition, dress):

Testing Situation (rapport, environment, attitude toward testing):

Mood and Activity Level (affect, interest, off-task behaviors):

Attention and Concentration (focus, distractibility, sustained effort):

Problem-Solving Behaviors (persistence, planfulness, organization):

Language Usage (preferred language, spontaneous verbalizations, second language):

Current Medications:

Other Information:

Figure 9 (continued)

Stanford-Binet Intelligence Scales, Fifth Edition Detailed Summary Report Confidential Report

Examinee: Julie Wiggins
Date of Birth: 03-29-2001
Date of Testing: 03-02-2016
Age: 14 years 11 months
Sex: Female

Examiner: Temp User
Date of Report: 04-04-2016
School/Agency: Salmen High School
Grade/Occupation: 10

IQ and Factor Index Score Results

	Sum of Scaled Scores	Standard Score	Percentile	90% Confidence Interval		Descriptive Classification
				Score Range	Percentile	
IQ Scores						
Full Scale IQ (FSIQ)	106	104	61	101–107	53–68	Average
Nonverbal IQ (NVIQ)	51	101	53	96–106	39–65	Average
Verbal IQ (VIQ)	55	106	66	101–111	53–77	Average
Abbreviated IQ (ABIQ)	20	100	50	93–107	32–68	Average
Factor Index Scores						
Fluid Reasoning (FR)	21	103	58	96–110	39–75	Average
Knowledge (KN)	21	103	58	97–109	42–73	Average
Quantitative Reasoning (QR)	20	100	50	94–106	35–65	Average
Visual Spatial (VS)	21	103	58	97–109	42–73	Average
Working Memory (WM)	23	109	73	101–115	53–84	Average

Note: The Standard Score is a normalized score with a mean of 100 and a standard deviation of 15.

Subtest Scores

Nonverbal	Raw	Scaled	%ile	Verbal	Raw	Scaled	%ile
Knowledge	21	10	50	Knowledge	40	11	63
Quantitative Reasoning	20	8	25	Quantitative Reasoning	20	12	75
Visual Spatial	23	12	75	Visual Spatial	21	9	37
Working Memory	24	12	75	Working Memory	22	11	63

Note: All scaled scores are normalized standard scores with a mean of 10 and a standard deviation of 3.

IQ / Factor Index Score Differences

Scores Contrasted	Standard Score Difference	Statistically Significant?	Cumulative Percentile
NVIQ vs. VIQ	5	No	59.5
FR vs. KN	0	No	99.9
FR vs. QR	3	No	84.2
FR vs. VS	0	No	99.9
FR vs. WM	6	No	69.5
KN vs. QR	3	No	85.3
KN vs. VS	0	No	99.9
KN vs. WM	6	No	67.3
QR vs. VS	3	No	82.8
QR vs. WM	9	No	46.7
VS vs. WM	6	No	66.4

**Subtest Scaled Scores Compared to the Average of Subtest Scores
for the NVIQ, VIQ and FSIQ**

NVIQ					
Subtests - 5	Scaled scores	Mean scaled score	Scaled score minus mean	Statistically different?	Normative frequency of the difference
Fluid Reasoning (NV)	9	10.2	-1.2	No	>25
Knowledge (NV)	10		-0.2	No	>25
Quantitative Reasoning (NV)	8		-2.2	No	<25
Visual Spatial (NV)	12		1.8	No	>25
Working Memory (NV)	12		1.8	No	>25
				Significance Level	.05

VIQ					
Subtests - 5	Scaled scores	Mean scaled score	Scaled score minus mean	Statistically different?	Normative frequency of the difference
Fluid Reasoning (V)	12	11	1	No	>25
Knowledge (V)	11		0	No	>25
Quantitative Reasoning (V)	12		1	No	>25
Visual Spatial (V)	9		-2	No	>25
Working Memory (V)	11		0	No	>25
				Significance Level	.05

FSIQ					
Subtests - 10	Scaled scores	Mean scaled score	Scaled score minus mean	Statistically different?	Normative frequency of the difference
Fluid Reasoning (NV)	9	10.6	-1.6	No	>25
Knowledge (NV)	10		-0.6	No	>25
Quantitative Reasoning (NV)	8		-2.6	No	<25
Visual Spatial (NV)	12		1.4	No	>25
Working Memory (NV)	12		1.4	No	>25
Fluid Reasoning (V)	12		1.4	No	>25
Knowledge (V)	11		0.4	No	>25
Quantitative Reasoning (V)	12		1.4	No	>25
Visual Spatial (V)	9		-1.6	No	>25
Working Memory (V)	11		0.4	No	>25
				Significance Level	.05

Figure 10 (continued)

figure continues

Significant Differences between Subtest Scaled Scores

Among the Nonverbal Subtests

Significant differences between the available Nonverbal Subtests were found for this examinee.

Subtest	Difference	Value for Significance <i>p</i> < .05
Quantitative Reasoning (NV) -- Visual Spatial (NV)	4	3.13
Quantitative Reasoning (NV) -- Working Memory (NV)	4	3.06

Among the Verbal Subtests

Significant differences between the available Verbal Subtests were found for this examinee.

Subtest	Difference	Value for Significance <i>p</i> < .05
Quantitative Reasoning (V) -- Visual Spatial (V)	3	2.99

Between the Nonverbal and Verbal Subtests

Significant differences between the available Nonverbal and Verbal subtests were found for this examinee.

VERBAL	NONVERBAL	Difference	Value for Significance <i>p</i> < .05
Fluid Reasoning	Quantitative Reasoning	4	3.22
Knowledge	Quantitative Reasoning	3	2.99
Quantitative Reasoning	Quantitative Reasoning	4	3.09
Visual Spatial	Working Memory	3	2.97

SB5 Scatter Indices

Scatter Profile for	Scatter Value of Scaled Scores	Frequency of Occurrence
FSIQ	4	93.7
NVIQ	4	70.9
VIQ	3	86.4

Note: Scatter is the difference between the highest and lowest scaled scores within a profile or set of scores. The lower the frequency of occurrence, the rarer the observed difference in the normative sample.

Change-Sensitive Score Information - Composite and Factor Scores

	Sum of Raw Scores	Change-Sensitive Scores (CSS)	Age Equivalent (AE)	Confidence Interval Scores
IQ Scores				
Full Scale IQ (FSIQ)	236	510	16-2	508-512
Nonverbal IQ (NVIQ)	113	508	14-7	505-511
Verbal IQ (VIQ)	123	512	15-8	510-514
Abbreviated IQ (ABIQ)	65	507	17-0	504-510
Factor Index Scores				
Fluid Reasoning (FR)	45	508	24-0	504-512
Knowledge (KN)	61	510	15-5	507-513
Quantitative Reasoning (QR)	40	513	12-11	508-518
Visual Spatial (VS)	44	513	15-6	508-518
Working Memory (WM)	46	521	21-0	516-526

Figure 10 (continued)

Stanford-Binet Intelligence Scales, Fifth Edition, IQ and Factor Index Descriptive Report

Full Scale IQ

The Full Scale IQ (FSIQ) is derived from the sum of all the tasks in the SB5. It covers both the Verbal and Nonverbal domains of cognitive ability in a balanced design and taps the five underlying factor index scales of the SB5. The FSIQ provides a global summary of the examinee's current general level of intellectual functioning as measured by the SB5. The FSIQ is considered a reliable measure of *g*, or the general ability to reason, solve problems, and adapt to the cognitive demands of the environment. The FSIQ measures more than acquired knowledge from schooling; it also measures the sum of five major facets of intelligence: reasoning, stored information, memory, visualization, and the ability to solve novel problems. In research, global scores such as the FSIQ have been found to be the most effective predictors of long-term educational attainment, school-based achievement, and vocational advancement. When Nonverbal IQ (NVIQ) and Verbal IQ (VIQ) scores are not significantly different, the FSIQ typically will be the most prominent score in the SB5 interpretation.

Nonverbal IQ

The SB5 Nonverbal IQ is based on the nonverbal subtests of the five factor index scales. It measures skills in solving abstract, picture-oriented problems; recalling facts and figures; solving quantitative problems shown in picture form; assembling designs; and recalling tapping sequences. The NVIQ measures the examinee's general ability to reason, solve problems, visualize, and recall information presented in pictorial, figural, and symbolic form, as opposed to information presented in the form of words and sentences (printed or spoken). The NVIQ does require a small degree of auditory skill for understanding brief examiner-spoken directions.

Verbal IQ

The SB5 Verbal IQ provides a composite of all the cognitive skills required to solve the items in the five verbal subtests. The VIQ measures general ability to reason, solve problems, visualize, and recall important information presented in words and sentences (printed or spoken). Additionally, the VIQ reflects the examinee's ability to explain verbal responses clearly, present rationales for response choices, create stories, and explain spatial directions. The VIQ subtests require the examinee to understand the examiner's spoken directions and then clearly vocalize responses to questions. General verbal ability, measured by VIQ, is one of the most powerful predictors of academic success in Western cultures, because of the heavy reliance on reading and writing in formal school programs.

Abbreviated Battery IQ

The Abbreviated Battery IQ (ABIQ) is based on two routing subtests—one nonverbal (Object Series/Matrices) and one verbal (Vocabulary). The ABIQ provides a quick estimate of two major cognitive factors: fluid reasoning and crystallized ability. Object Series/Matrices requires the examinee to identify patterns or series of objects and pictures, and to solve novel pictorial problems presented in the matrix-analogy format. The Vocabulary subtest requires examinees to use their verbal knowledge, acquired and stored in memory from years of exposure to printed and spoken English, in school, at home, or at work. The ABIQ can be used for assessments such as neuropsychological examinations, in which a battery of tests supplements the SB5, or for quick yet reliable assessments to verify the general cognitive status of an individual. The ABIQ measures the areas of Nonverbal Fluid Reasoning and Verbal Knowledge and includes two of the most important abilities predictive of academic and

vocational advancement.

Fluid Reasoning

Fluid Reasoning (FR) is the ability to solve verbal and nonverbal problems using inductive or deductive reasoning. Classic activities such as Matrices require the individual to determine the underlying rules or relationships among pieces of information (such as visual objects) that are novel to him or her. The ability to reason inductively (as in the Matrices or Verbal Analogies activities) requires the examinee to reason from the part to the whole, from the specific to the general, or from the individual instance to the universal principle. In deductive reasoning activities, the examinee is given general information and is required to infer a conclusion, implication, or specific example. In the SB5, the Early Reasoning activity items require the examinee to inspect pictures depicting human activities and deduce the underlying problem or situation by telling a story.

FLUID REASONING

Cognitive Areas

- Inductive and deductive reasoning
- General sequential reasoning
- Oral production and visual memory fluency

Primary Nonverbal Abilities

- Attention to visual cues
- Concentration for long periods
- Visualization of abstract stimuli
- Recognition of patterns
- Synthesis of information
- Mental verbal mediation
- Search strategies
- Tracking of visual sequences
- Visual discrimination
- Visual scanning
- Mental review of potential answers

Secondary Nonverbal Abilities

- Visualization of meaningful stimuli
- Inspection of objects by touch
- Freedom from visual neglect
- Toleration of ambiguity
- Patience with difficult tasks
- Trial-and-error strategies
- Cognitive flexibility
- Recognition and evaluation of pictures

Primary Verbal Abilities

- Rapid retrieval of words and explanations
- Attention to verbal cues

- Production of creative answers
- Mental review of potential answers
- Verbal fluency

Secondary Verbal Abilities

- Visualization of meaningful stimuli
- Concentration for long periods
- Freedom from distractibility
- Toleration of ambiguity
- Wide auditory attention span
- Relating of verbal parts to the whole
- Abstraction of verbal concepts
- Trial-and-error strategies
- Synthesis of information
- Cognitive flexibility
- Recognition and evaluation of pictures

Knowledge

Knowledge (KN) is a person's accumulated fund of general information acquired at home, school, or work. In research, this factor has been called *crystallized ability*, because it involves learned material, such as vocabulary, that has been acquired and stored in long-term memory. Therefore, the first two factor indexes represent the widely verified fluid and crystallized (knowledge) dimensions of intelligence.

KNOWLEDGE

Cognitive Areas

- Lexical knowledge
- General information
- Oral production and fluency
- Language development

Primary Nonverbal Abilities

- Visualization of meaningful stimuli
- Freedom from visual neglect
- Toleration of ambiguity
- Search strategies
- Visual discrimination

Secondary Nonverbal Abilities

- Attention to visual cues
- Freedom from distractibility
- Systematic visual scanning
- Fund of general information
- Trial-and-error strategies
- Synthesis of information

- Cognitive flexibility
- Recognition and evaluation of pictures
- Production of conventional answers

Primary Verbal Abilities

- Relating of verbal parts to the whole
- Fund of general information
- Rapid retrieval of words and explanations

Secondary Verbal Abilities

- Attention to verbal cues
- Wide auditory attention span
- Knowledge of culturally relevant facts
- Synthesis of information
- Production of conventional answers

Quantitative Reasoning

Quantitative Reasoning (QR) is an individual's facility with numbers and numerical problem solving, whether with word problems or with pictured relationships. Activities in the SB5 emphasize applied problem solving more than specific mathematical knowledge acquired through school learning.

QUANTITATIVE REASONING

Cognitive Areas

- Quantitative reasoning
- Mathematical knowledge

Primary Nonverbal Abilities

- Concentration for long periods
- Production of conventional answers

Secondary Nonverbal Abilities

- Attention to visual cues
- Precision of movement
- Systematic visual scanning
- Mental review of potential answers
- Visual discrimination
- Tracking of visual sequences
- Recognition of patterns
- Trial-and-error strategies
- Synthesis of information
- Cognitive flexibility
- Mental verbal mediation
- Patience with difficult tasks
- Recognition and evaluation of pictures
- Production of conventional answers

Primary Verbal Abilities

- Concentration for long periods
- Production of conventional answers

Secondary Verbal Abilities

- Attention to verbal cues
- Patience with difficult tasks
- Wide auditory attention span
- Mental review of potential answers
- Trial-and-error strategies
- Abstract verbal concepts
- Synthesis of information
- Cognitive flexibility
- Recognition and evaluation of pictures
- Production of creative answers

Visual-Spatial Processing

Visual-Spatial Processing (VS) measures an individual's ability to see patterns, relationships, spatial orientations, or the gestalt among diverse pieces of a visual display. Activities in the SB5 include Form Board and Form Patterns, where pieces are moved to complete the whole puzzle, and a collection of position and direction items.

VISUAL-SPATIAL PROCESSING

Cognitive Areas

- Visualization
- Spatial relations
- Closure speed

Primary Nonverbal Abilities

- Visualization of meaningful stimuli
- Inspection of objects by touch
- Freedom from visual neglect
- Precision of movement
- Planning
- Trial-and-error strategies
- Reproduction of models
- Visualization of whole from parts
- Recognition and evaluation of pictures
- Production of creative answers

Secondary Nonverbal Abilities

- Attention to visual cues
- Impulse control
- Concentration for long periods

- Patience with difficult tasks
- Precision of movement
- Systematic visual scanning
- Search strategies
- Visual discrimination
- Mental verbal mediation
- Cognitive flexibility

Primary Verbal Abilities

- Attention to verbal cues
- Recognition and evaluation of pictures

Secondary Verbal Abilities

- Visualization of meaningful stimuli
- Concentration for long periods
- Toleration of ambiguity
- Wide auditory attention span
- Search strategies
- Relating of verbal parts to the whole
- Verbal fluency
- Planning
- Visualization of whole from parts
- Production of creative answers
- Rapid retrieval of words and explanations

Working Memory

Working Memory (WM) is a class of memory processes in which diverse information stored in short-term memory is inspected, sorted, or transformed. For example, in the SB5 Last Word items, the examinee listens to a series of sentences and then sorts out the last word in each sentence for recall. The concept of Working Memory is derived from theory and research that have demonstrated the importance of working memory in school learning, vocational performance, and general problem-solving tasks.

WORKING MEMORY

Cognitive Areas

- Visual memory
- Memory span
- Serial perceptual integration

Primary Nonverbal Abilities

- Impulse control
- Freedom from distractibility
- Patience with difficult tasks
- Speed of movement
- Precision of movement
- Tracking of visual sequences

- Retention span

Secondary Nonverbal Abilities

- Attention to visual cues
- Concentration for long periods
- Freedom from visual neglect
- Visual discrimination
- Mental verbal mediation

Primary Verbal Abilities

- Impulse control
- Freedom from distractibility
- Patience with difficult tasks
- Wide auditory attention span
- Retention span

Secondary Verbal Abilities

- Attention to verbal cues
- Concentration for long periods
- Relating of verbal parts to the whole
- Rapid retrieval of words and explanations

Figure 11 (continued)