

## **Neuropsychological Exams**

The following 21 (7 tests) contain a battery of Neuropsychological testing. Be sure to carefully follow the instructions during the administration of each test. In addition, if a proxy is involved in the interview they should not be present during the testing. The testing should be administered in a quiet area to assure participant concentration.

## (MMS) MINI-MENTAL STATE EXAMINATION

*You will need: a pencil, a watch, a sheet of paper and the paper that reads close your eyes.*

**Instructions:** *I would like to ask you some questions to check your concentration and your memory. Most of them will be easy.*

QUESTIONS	RESPONSES	SCORE
<p><b>ORIENTATION</b></p> <p>1. What year is it? 2. What month is it? 3. What is today's date?</p> <p style="text-align: center;"><i>(Score 1 point for each correct answer)</i></p>	<p>Year: _____ Month: _____ Date: _____</p>	<p>0    1    2    3</p>
<p>2. What is the season?</p> <p style="text-align: center;"><i>(Score 1 point if correct)</i></p>	<p>Winter ____ Spring ____ Summer ____ Fall ____</p>	<p>0            1</p>
<p>3. What day of the week is it?</p> <p style="text-align: center;"><i>(Score 1 point if correct)</i></p>	<p>Day: _____ <i>(record answer)</i></p>	<p>0            1</p>
<p>4. What city are we in? What part/neighborhood of the city are we in? What state are we in?</p> <p style="text-align: center;"><i>(Score 1 point for each correct answer)</i></p>	<p>City: _____ Part of city: _____ State: _____</p>	<p>0    1    2    3</p>
<p>5. What is the address of this place?</p> <p style="text-align: center;"><i>(Score 1 point for any appropriate answer)</i></p>	<p>_____ <i>(record answer)</i></p>	<p>0            1</p>
<p>6. What floor of the building/house are we on?</p> <p style="text-align: center;"><i>(Score 1 point if correct)</i></p>	<p>_____ <i>(record answer)</i></p>	<p>0            1</p>
<p><b>REGISTRATION</b></p> <p>7. I am going to name 3 objects. After I have said them I want you to repeat them back to me.</p>	<p>____ APPLE ____ TABLE ____ PENNY</p> <p><i>Check correct answers</i></p>	<p>0    1    2    3</p>
<p><b>ATTENTION AND CALCULATION</b></p> <p>8. Please subtract 7 from 100, and then subtract 7 from the answer you get and keep subtracting 7 until I tell you to stop?</p> <p style="text-align: center;"><i>(1 point for each correct. Stop at five answers)</i></p>	<p>Record: __ _ _ _ _</p> <p>Write in numbers. Scoring can be done later. Score 1 point when difference between numbers is 7.</p>	<p>0    1    2    3    4    5</p>
<p><b>RECALL</b></p> <p>9. What are the 3 objects I asked you to remember a few moments ago?</p>	<p>____ APPLE ____ TABLE ____ PENNY</p> <p><i>Check correct answers</i></p>	<p>0    1    2    3</p>

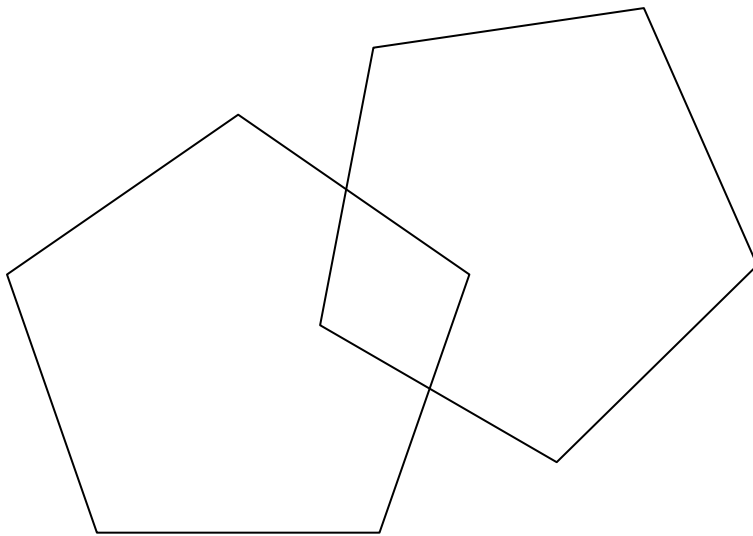
<p><b>LANGUAGE TESTS</b></p> <p><i>Show wristwatch:</i> 10. What is this called?  (Score 1 point if correct)</p>	<p>WATCH (Score 1 if correct response)</p>	<p>0      1</p>
<p><i>Show pencil:</i> 11. What is this called?  (Score 1 point if correct)</p>	<p>PENCIL (Score 1 if correct response)</p>	<p>0      1</p>
<p>12. Please repeat the following: "NO IFS, ANDS, or BUTS."  (Allow only one try)</p>	<p>Score 1 if correct</p>	<p>0      1</p>
<p><i>Hand "close your eyes" sheet:</i> 13. Please read the following and do what it says:  (Score 1 point if correct)</p>	<p>Score 1 if respondent closes eyes.  ____ Check here if low vision/illiteracy and score 0</p>	<p>0      1</p>
<p><i>Read full statement and then hand over the paper:</i> 14. "I'm going to give you a piece of paper. When I do, take the paper in your right hand, fold the paper in half with both hands, and put the paper down on your lap."</p>	<p>Score 1 for each correctly performed act.  ____ Check here if low vision and score 0</p>	<p>0    1    2    3</p>
<p>15. Please write any complete sentence on this page for me (hand next page and a pencil).</p>	<p>Sentence should have a subject and a verb, and make sense. Spelling and grammar errors are okay. ____ Check here if low vision/illiteracy and score 0</p>	<p>0      1</p>
<p>16. Here is a drawing. Please copy the drawing on this same page.  (Hand "drawing" sheet in next page)</p>	<p>Check if the two-sided figures intersect so that their juncture forms a four-sided figure, and if all angles in the five-sided figures are preserved.</p>	<p>0      1</p>
<p>17. <b>TOTAL POINTS:</b></p>	<p>Add scores. Can be done later. <b>(Maximum possible: 30 points)</b></p>	<p>_____</p>

**Sentence:**

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## Neuropsychological Battery in English Word List Learning

Instrument developed by L. Artiola y Fortuny, PhD © 1999 as a part of the "California Verbal Learning Test"  
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**LIST A**

**First Try:** "I am going to read from a list of words. Please listen attentively. Once I have finished I would like for you to repeat the list as best as you can. The order in which you repeat the words does not matter. The most important thing is that you remember as many as you can. Are you ready?"

**Second Try:** "I am going to repeat the list of words. Once again, I would like for you to repeat as many words as you can in whatever order. Please remember to repeat the words you already said the first time."

**Third Try:** "I am going to repeat once again the same list of words. Once again, I would like for you to repeat all the words that you can in whatever order, including the ones you have said before."

1. grandfather	5. hippopotamus	9. couch	13. dresser
2. giraffe	6. sofa	10. zebra	14. panther
3. leg	7. eye	11. uncle	15. cousin
4. bed	8. mother	12. hand	16. nose

LIST A	1st Attempt	2nd Attempt	3rd Attempt	4th Attempt	5th Attempt
1. bed					
2. couch					
3. cousin					
4. dresser					
5. eye					
6. giraffe					
7. grandfather					
8. hand					
9. hippopotamus					
10. leg					
11. mother					
12. nose					
13. panther					
14. sofa					
15. uncle					
16. zebra					
17.					
18.					
19.					
20.					
<b>CORRECT</b>	_____	_____	_____	_____	_____

**LIST B.**

**Instructions:** *“Now I am going to read a totally different list. Pay attention and repeat it in the order in which you please.”*

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<b>1. piano</b>	<b>9. finger</b>
<b>2. elephant</b>	<b>10. bear</b>
<b>3. shirt</b>	<b>11. dress</b>
<b>4. head</b>	<b>12. trumpet</b>
<b>5. leopard</b>	<b>13. rhinoceros</b>
<b>6. violin</b>	<b>14. coat</b>
<b>7. foot</b>	<b>15. ear</b>
<b>8. skirt</b>	<b>16. drum</b>

<b>LIST B</b>	
<b>1. bear</b>	
<b>2. coat</b>	
<b>3. dress</b>	
<b>4. drum</b>	
<b>5. ear</b>	
<b>6. elephant</b>	
<b>7. finger</b>	
<b>8. foot</b>	
<b>9. head</b>	
<b>10. leopard</b>	
<b>11. piano</b>	
<b>12. rhinoceros</b>	
<b>13. skirt</b>	
<b>14. shirt</b>	
<b>15. trumpet</b>	
<b>16. violin</b>	
<b>17.</b>	
<b>18.</b>	
<b>19.</b>	
<b>20.</b>	
<b>CORRECT</b>	_____

### SHORT TERM RECALL

**Instructions:**

“Now I would like you to repeat the words from the first list that I read 5 times”

SHORT TERM RECALL
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.
CORRECT _____

### SHORT TERM RECALL FACILITATED BY CLUES

**Instructions:**

“Please tell me all of the words from the first list that I read you that include animals, family members, etc.”

SHORT TERM RECALL FACILITATED BY CLUES
<b>1. ANIMALS</b>
2.
3.
4.
5.
<b>6. FAMILY MEMBERS</b>
7.
8.
9.
10.
<b>11. FURNITURE</b>
12.
13.
14.
15.
<b>16. BODY PARTS</b>
17.
18.
19.
20.
CORRECT _____

STOP TIME \_\_\_ : \_\_\_

**LONG TERM RECALL**

**20 minutes** after Short Term Recall  
Facilitated by Clues

**START TIME:** \_\_\_ : \_\_\_

**Instructions:**

*“A little while ago I read you a list of words. I would like you to repeat all the words from the first list, the one I read five times. Please begin.”*

<b>LONG TERM RECALL</b>
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.
<b>CORRECT</b> _____

**LONG TERM RECALL  
FACILITATED BY CLUES**

**Instructions:**

*“Please tell me all of the words from the first list that are family members, etc.”*

<b>LONG TERM RECALL FACILITATED BY CLUES</b>
<b>1. FAMILY MEMBERS</b>
2.
3.
4.
5.
<b>6. BODY PARTS</b>
7.
8.
9.
10.
<b>11. ANIMALS</b>
12.
13.
14.
15.
<b>16. FURNITURE</b>
17.
18.
19.
20.
<b>CORRECT</b> _____



**RECOGNITION**

**Instructions:**

*“Now let’s try this in a different way. I am going to read a list of words. After each word, I would like for you to indicate whether that word was included in the first list or not.”*

**Interviewer:** Mark the correct responses in the space provided to the right of the word. Do not mark any incorrect responses.

	Items	Yes
1	piano	
2	ear	
3	violin	
4	soap	
5	word	
6	father	
7	dresser	
8	tree	
9	cousin	
10	eye	
11	giraffe	
12	coat	
13	elephant	
14	coma	
15	grandfather	
16	book	
17	hippopotamus	
18	movie	
19	garlic	
20	leg	
21	spoon	
22	arm	
23	couch	
24	drum	
25	mother	
26	hall	
27	foot	
28	zebra	
29	aspirin	
30	hand	
31	bed	
32	tiger	
33	racetrack	
34	uncle	
35	panther	
36	bear	
37	rock	
38	pepper	
39	nose	
40	shirt	
41	table	
42	sofa	
43	jam	
44	handsaw	
	<b>TOTAL</b>	
	Possible	16

**Naming Words-** *This test is to see the speed with which you can read these words. You will read these words as fast as you can, by column. I will tell you when you should start. Read the first, second, third, fourth and fifth column until I say "STOP". Remember, continue reading in a loud voice, as fast as possible until I say "STOP". If you make a mistake I will say "No", correct the error and continue reading without stopping, until I say "STOP". Ready? Begin! (After 45 seconds): "STOP!"*  
**[Interviewer:** Keep the test page on the table so that it will be easier to correct the subject if there is a mistake.]

1. RED		21. BLUE		41. GREEN		61. RED		81. BLUE	
2. GREEN		22. GREEN		42. RED		62. BLUE		82. GREEN	
3. BLUE		23. RED		43. BLUE		63. GREEN		83. RED	
4. GREEN		24. BLUE		44. RED		64. RED		84. BLUE	
5. RED		25. RED		45. GREEN		65. BLUE		85. GREEN	
6. BLUE		26. GREEN		46. BLUE		66. GREEN		86. RED	
7. RED		27. BLUE		47. GREEN		67. BLUE		87. GREEN	
8. BLUE		28. GREEN		48. RED		68. GREEN		88. RED	
9. GREEN		29. RED		49. BLUE		69. RED		89. BLUE	
10. BLUE		30. GREEN		50. GREEN		70. BLUE		90. GREEN	
11. GREEN		31. RED		51. BLUE		71. RED		91. RED	
12. RED		32. BLUE		52. RED		72. GREEN		92. BLUE	
13. GREEN		33. RED		53. BLUE		73. RED		93. GREEN	
14. BLUE		34. BLUE		54. RED		74. GREEN		94. RED	
15. RED		35. GREEN		55. GREEN		75. BLUE		95. BLUE	
16. BLUE		36. BLUE		56. RED		76. GREEN		96. RED	
17. RED		37. GREEN		57. BLUE		77. RED		97. GREEN	
18. GREEN		38. RED		58. GREEN		78. BLUE		98. BLUE	
19. RED		39. BLUE		59. RED		79. GREEN		99. RED	
20. GREEN		40. RED		60. GREEN		80. BLUE		100. GREEN	

**Score: Number Correct** \_\_\_\_\_

**Naming Colors-** *This part of the test is to see how quickly you can name these colors. I am going to tell you when to start. Name the colors in a loud voice, as fast as you can. Start with the first column, then the second, etc., just like in the previous task, until I say “STOP”. When you finish the fifth column continue with the first column until I say “STOP”. If you make a mistake, I will let you know. Correct your mistake and continue naming colors in a loud voice as fast as possible. Ready? “Begin” (After 45 seconds): “STOP!”* **[Interviewer:** Keep the test page on the table so that it will be easier to correct the subject if there is a mistake.]

1. RED		22. RED		41. BLUE		61. GREEN		81. BLUE	
2. BLUE		22. BLUE		42. GREEN		62. RED		82. GREEN	
3. GREEN		23. RED		43. BLUE		63. BLUE		83. RED	
4. RED		24. GREEN		44. RED		64. RED		84. BLUE	
5. BLUE		25. BLUE		45. GREEN		65. GREEN		85. GREEN	
6. RED		26. GREEN		46. BLUE		66. RED		86. BLUE	
7. GREEN		27. RED		47. GREEN		67. GREEN		87. GREEN	
8. BLUE		28. BLUE		48. RED		68. BLUE		88. RED	
9. RED		29. RED		49. BLUE		69. GREEN		89. GREEN	
10. GREEN		30. BLUE		50. GREEN		70. BLUE		90. BLUE	
11. BLUE		31. GREEN		51. RED		71. RED		91. RED	
12. GREEN		32. BLUE		52. GREEN		72. BLUE		92. BLUE	
13. BLUE		33. RED		53. BLUE		73. RED		93. RED	
14. RED		34. GREEN		54. RED		74. GREEN		94. GREEN	
15. GREEN		35. BLUE		55. GREEN		75. BLUE		95. RED	
16. BLUE		36. RED		56. RED		76. GREEN		96. GREEN	
17. RED		37. GREEN		57. BLUE		77. RED		97. BLUE	
18. GREEN		38. BLUE		58. RED		78. GREEN		98. GREEN	
19. BLUE		39. RED		59. GREEN		79. BLUE		99. RED	
20. RED		40. GREEN		60. BLUE		80. RED		100. BLUE	

Score: Number Correct \_\_\_\_\_

**Naming Colors/Ignoring Words-** *This part of the test is very similar to the one you have just finished. I am going to ask that you name the color of the ink in which the words are written, and ignore the word that it says. Do not read the words. Only name the color of the ink in which it is written. For example, what will you say here? (Point to the first word of the first column; show another example if necessary). Remember, name the color of the ink in a loud voice, as fast as you can, following the order of the columns. I am going to tell you when to start. I will also indicate when you have made a mistake. Correct yourself and continue as fast as you can. Ready? Begin. (After 45 seconds): "STOP!" [Interviewer: Keep the test page on the table so that it will be easier to correct the subject if there is a mistake.]*

1. BLUE		21. RED		41. BLUE		61. GREEN		81. RED	
2. RED		22. BLUE		42. GREEN		62. RED		82. BLUE	
3. GREEN		23. GREEN		43. RED		63. BLUE		83. GREEN	
4. BLUE		24. RED		44. BLUE		64. GREEN		84. RED	
5. GREEN		25. GREEN		45. RED		65. RED		85. BLUE	
6. RED		26. BLUE		46. GREEN		66. BLUE		86. GREEN	
7. GREEN		27. GREEN		47. RED		67. GREEN		87. RED	
8. RED		28. RED		48. BLUE		68. RED		88. BLUE	
9. BLUE		29. BLUE		49. GREEN		69. BLUE		89. GREEN	
10. RED		30. RED		50. RED		70. GREEN		90. BLUE	
11. BLUE		31. BLUE		51. GREEN		71. BLUE		91. GREEN	
12. GREEN		32. GREEN		52. BLUE		72. RED		92. RED	
13. RED		33. BLUE		53. RED		73. BLUE		93. BLUE	
14. GREEN		34. GREEN		54. GREEN		74. RED		94. GREEN	
15. BLUE		35. RED		55. BLUE		75. GREEN		95. RED	
16. GREEN		36. GREEN		56. GREEN		76. BLUE		96. BLUE	
17. BLUE		37. RED		57. RED		77. GREEN		97. RED	
18. RED		38. BLUE		58. BLUE		78. RED		98. GREEN	
19. GREEN		39. RED		59. GREEN		79. BLUE		99. BLUE	
20. BLUE		40. GREEN		60. BLUE		80. RED		100. RED	

Score: Number Correct \_\_\_\_\_

Neuropsychological Test Battery  
**LETTER FLUENCY**

L. ARTIOLA i FORTUN Y D. HERMOSILLO ROMO © 1999

**Instructions:**

“I am going to say a letter of the alphabet and I want you to say as quickly as you can all the words that you can think of which begin with that letter. You may say any words at all, except proper names such as the names of people or places. So you would not say Rochester or Robert. Also do not use the same word again with a different ending such as eat and eating. For example, if I say S, you could say son, sit, strong, or state. Can you think of other words beginning with the letter S? If the subject has succeeded in giving two appropriate words beginning with the demonstration letter, say, “That is fine. Now I am going to give you another letter and again you say all the words beginning with that letter that you can think of. Remember, no names of people or places, just ordinary words. Also, if you draw a blank, I want you to keep on trying until the time limit is up. You will have one minute for each letter. The first letter is C (The second letter is F, the third letter is L).” **[Interviewer:** For each letter, you are allowed to remind the subject of the rules one time, i.e. word endings, proper nouns, and the letter that they are on]

<i>C</i>	<i>F</i>	<i>L</i>
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
21.		
22.		

Score: \_\_\_\_\_

## DIGIT SPAN

L. ARTIOLA I FORTUNY Y D. HERMOSILLO ROMO ©1999  
**INSTRUCTIONS FOR ADMINISTRATION OF THE DIGIT SPAN**

### I. Digits Forward

**Instructions:** “I am going to say some numbers. Listen carefully, and when I am through, I want you to say them right after me. Just say exactly what I say. So for example, if I say 1-2-3, you would say... The sets of numbers will grow longer as I go.” **Interviewer:** Read the number sequences at a slow pace. Say one number at a time. Stop when the subject has both sequences incorrect in the same section.

	Sequence 1	Correct y/n	Sequence 2	Correct y/n
1.	9-3		1-5	
2.	5-8-2		6-9-4	
3.	6-4-3-9		7-2-8-6	
4.	4-2-7-3-1		7-5-8-3-6	
5.	6-1-9-4-7-3		3-9-2-4-8-7	
6.	5-9-1-7-4-2-8		4-1-7-9-3-8-6	
7.	5-8-1-9-2-6-4-7		3-8-2-9-5-1-7-4	
8.	2-7-5-8-6-2-5-8-4		7-1-3-9-4-2-5-6-8	

**Digits Forward (AtVerIde) =** \_\_\_\_\_

### II. Digits Backward

**Instructions:** “Now I am going to say some more numbers. But this time when I stop, I want you to say them backward. For example, if I say 1-2-3, now you would say...” [3-2-1]

**Interviewer:** Wait for the subject to respond. If the subjects response is correct, say “Correct”; then begin. If the subject does not respond or the reponse is incorrect; tell them the correct response and give another example.

	Sequence 1	Correct y/n	Sequence 2	Correct y/n
1.	2-4		5-8	
2.	6-2-9		4-1-5	
3.	3-2-7-9		4-9-6-8	
4.	1-5-2-8-6		6-1-8-4-3	
5.	5-3-9-4-1-8		7-2-4-8-5-6	
6.	8-1-2-9-3-6-5		4-7-3-7-1-2-8	
7.	9-4-3-7-6-2-5-8		7-2-8-1-9-6-5-3	

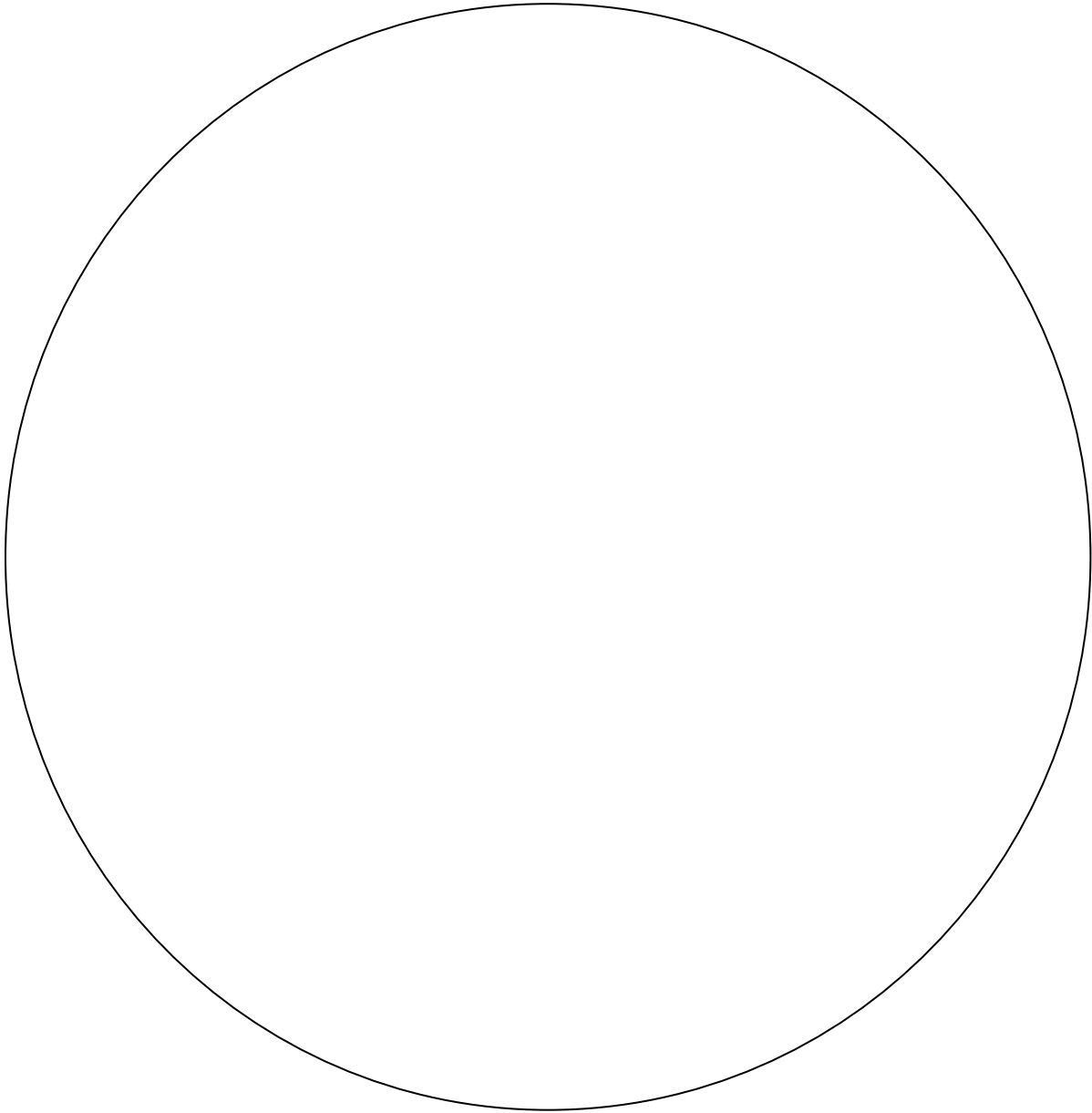
**Digits Backward (AtVerInv)=** \_\_\_\_\_

## CLOCK DRAWING INSTRUCTIONS

**Instructions:** “Pretend this is the face of a clock. Draw a picture of a clock, with numbers and hands that show the time is ten after eleven.”

**Interviewer:** The circle is provided on the answer sheet. Only use this circle, since the results of the test are affected by the size of the circle (i.e. the smaller the circle, the easier the task). Give one point for the numbers 1 through 12, one point for each correct positioning of the numbers, and one point for two hands of the clock.

Score	Points
12 numbers (1-12)	0 1
12 numbers in the correct position	0 1
2 hands are on the clock	0 1



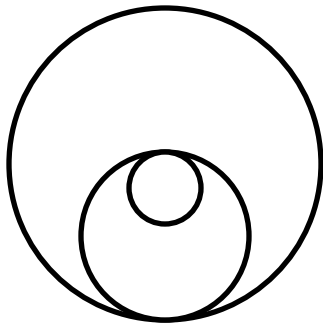
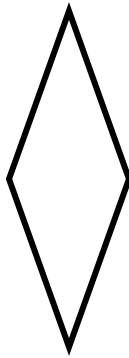
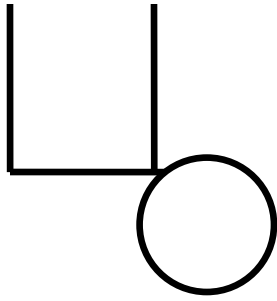


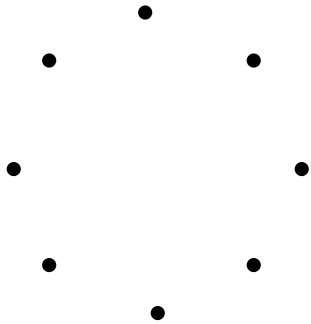
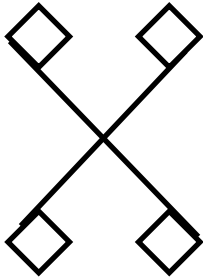
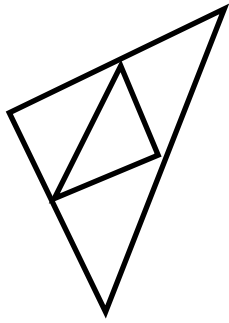
## Figure Copying

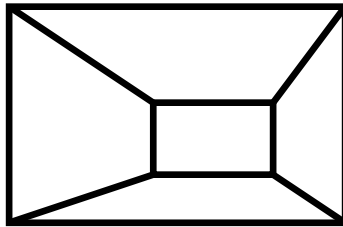
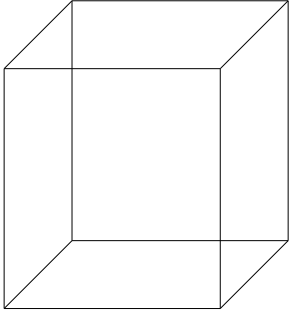
**Instructions:** *“I’m going to give you some pages with designs on them. I’d like you to copy these designs. Copy them here (hold the pages on the long side, and point to the bottom half of the first page). There are 3 pages of designs for you to copy.”*

**Interviewer:**

1. Give the subject a pencil (or a pen). Allow the subject to erase if he/she desires; however, if he/she continues to erase, assure the subject that the figure looks fine and continue with the examination. If the subject wishes to try a drawing again, ask him to make a second drawing to the side of the first. In this case, score the second drawing.
2. If the subject stops after the first page, prompt him to continue to the other pages.
3. Give the subject one or two minutes to complete the drawing of each figure. If the subject has not started to draw the figure in one minute, reassure him, and turn to the next one. If the subject cannot draw 3 figures in a row, discontinue the test.







## Neuropsychological Examination Scoring Sheet

**Instructions:** Score subject's neuropsychological examination after completion of interview.

### 1. Mini-mental State Examination (MMSE)

**a. Orientation**

Question 1	___/3
Question 2	___/1
Question 3	___/1
Question 4	___/3
Question 5	___/1
Question 6	___/1

**b. Registration**

Question 7	___/3
Question 8	___/5

**c. Recall**

Question 9	___/3
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**d. Language Tests**

Question 10	___/1
Question 11	___/1
Question 12	___/1
Question 13	___/1
Question 14	___/3
Question 15	___/1
Question 16	___/1

### 2. Word List Learning

**a. List A**

1 <sup>st</sup> Attempt	___/16
2 <sup>nd</sup> Attempt	___/16
3 <sup>rd</sup> Attempt	___/16
4 <sup>th</sup> Attempt	___/16
5 <sup>th</sup> Attempt	___/16

**b. List B** \_\_\_/16

**c. Short-term Recall** \_\_\_/16

**d. Short-term Recall facilitated** \_\_\_/16

**e. Long-term Recall** \_\_\_/16

**f. Long-term facilitated** \_\_\_/16

**g. Recognition** \_\_\_/16

- 3. Stroop
  - c. **Stroop 1** \_\_\_\_\_
  - d. **Stroop 2** \_\_\_\_\_
  - e. **Stroop 3** \_\_\_\_\_
  
- 4. Letter Fluency
  - f. **1<sup>st</sup> Letter** \_\_\_\_\_
  - g. **2<sup>nd</sup> Letter** \_\_\_\_\_
  - h. **3<sup>rd</sup> Letter** \_\_\_\_\_
  
- 5. Digit Span
  - a. Digits Forward**
    - i. Highest # digits attained \_\_\_\_\_/9
    - ii. Total Score Forward \_\_\_\_\_
  
  - b. Digits Backward**
    - i. Highest # digits attained \_\_\_\_\_/9
    - ii. Total Score Backward \_\_\_\_\_
  
- 6. Clock Drawing
  - a. **Score** \_\_\_\_\_/3
  
- 7. Figure Copying
  - a. **Figure 1** \_\_\_\_\_/1
  - b. **Figure 2** \_\_\_\_\_/1
  - c. **Figure 3** \_\_\_\_\_/1
  - d. **Figure 4** \_\_\_\_\_/1
  - e. **Figure 5** \_\_\_\_\_/1
  - f. **Figure 6** \_\_\_\_\_/1
  - g. **Figure 7** \_\_\_\_\_/1
  - h. **Figure 8** \_\_\_\_\_/1
  - i. **Figure 9- MMSE** \_\_\_\_\_/1

SUBJECT ID: \_\_\_\_\_