



# Neuropsychological Battery

**Tests reported on Form C2,  
Uniform Data Set (UDS) v3.0**

**Version 3.0, March 2015**

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Revisions made to this document since UDS3 implementation (March 15, 2015)

Date yyyy-mm-dd	Description	Test(s) affected	Question(s) affected	Data element(s) affected
2017-08-28	Scoring criteria for Element #8 clarified	Benson immediate, delayed	Element #8	N/A
2016-08-01	Missing word, "metal," added to end of definition of item 29, "anvil."	MINT	29	N/A
2015-11-20	Missing table headers ("Incorrect") restored to MINT scoresheets	MINT	N/A	N/A
2015-04-24	Worksheet instructions changed to allow only 4 minutes for completion of the drawing.	Benson Immediate	N/A	N/A

Subject ID \_\_\_\_\_ Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Examiner's initials \_\_\_\_\_

# Montreal Cognitive Assessment (MoCA)

<b>VISUOSPATIAL / EXECUTIVE</b>						<b>POINTS</b>						
<div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>[ ]</span> <span>[ ]</span> </div>	<p>Copy cube</p>	<p>Draw CLOCK (Ten past eleven) (3 points)</p> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <span>[ ]</span> <span>[ ]</span> <span>[ ]</span> </div> <p style="text-align: center;">Contour      Numbers      Hands</p>			___/5							
<b>NAMING</b>												
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>[ ]</span> <span>[ ]</span> <span>[ ]</span> </div>					___/3							
<b>MEMORY</b>												
Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.		FACE	VELVET	CHURCH	DAISY	RED	No points					
1st trial												
2nd trial												
<b>ATTENTION</b>												
Read list of digits (1 digit/ sec.). Subject has to repeat them in the forward order		[ ] 2 1 8 5 4				___/2						
Subject has to repeat them in the backward order		[ ] 7 4 2										
Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors		[ ] FBACMNAAJKLBAFAKDEAAAJAMOFAAB				___/1						
Serial 7 subtraction starting at 100		[ ] 93	[ ] 86	[ ] 79	[ ] 72	[ ] 65	___/3					
		4 or 5 correct subtractions: <b>3 pts</b> , 2 or 3 correct: <b>2 pts</b> , 1 correct: <b>1 pt</b> , 0 correct: <b>0 pt</b>										
<b>LANGUAGE</b>												
Repeat : I only know that John is the one to help today. [ ] The cat always hid under the couch when dogs were in the room. [ ]						___/2						
Fluency / Name maximum number of words in one minute that begin with the letter F		[ ] _____ (N ≥ 11 words)				___/1						
<b>ABSTRACTION</b>												
Similarity between e.g. banana - orange = fruit		[ ] train - bicycle    [ ] watch - ruler				___/2						
<b>DELAYED RECALL</b>												
Has to recall words	FACE	VELVET	CHURCH	DAISY	RED	Points for UNCUED recall only	___/5					
<b>WITH NO CUE</b>	[ ]	[ ]	[ ]	[ ]	[ ]							
Category cue												
Multiple choice cue												
<b>Optional</b>												
<b>ORIENTATION</b>												
[ ] Date		[ ] Month		[ ] Year		[ ] Day		[ ] Place		[ ] City		___/6
© Z.Nasreddine MD <a href="http://www.mocatest.org">www.mocatest.org</a> Normal ≥ 26 / 30 <b>TOTAL</b> ___/30												
Add 1 point if ≤ 12 yr edu												

## Rules for single-item scoring and index score calculations for the MoCA\*

ITEMS	Points towards total score	Memory***	INDEX SCORES				
			Executive	Attention/ concentration	Language	Visuospatial	Orientation
Trails	1	–	1	–	–		–
Cube	1	–	–	–	–	1	–
Clock Circle	1	–	1	–	–	1	–
Clock Hands	1	–	1	–	–	1	–
Clock Time	1	–	1	–	–	1	–
Language Naming	3	–	–	–	3	3	–
Memory: Registration (2 learning trials, total possible = 10)	0, not scored	–	–	Immediate recall, 2 trials total, max=10	–	–	–
Attention: Digits	2	–	2	2	–	–	–
Attention: Letter A	1	–	1	1	–	–	–
Attention: Serial 7s	3	–	3	3	–	–	–
Language: Repetition	2	–	–	2	2	–	–
Language: Fluency	1	–	1	–	1	–	–
Abstraction	2	–	2	–	–	–	–
Delayed Recall with no cue	5	=3x number words recalled freely (max=15)	–	–	–	–	–
Delayed Recall with category cue	0**	=2x number of words retrieved with category cue (max=10)	–	–	–	–	–
Delayed Recall, recognition	0**	=1x number of words recognized (max=5)	–	–	–	–	–
Orientation: date	1	–	–	–	–	–	1
Orientation: month	1	–	–	–	–	–	1
Orientation: year	1	–	–	–	–	–	1
Orientation: day	1	–	–	–	–	–	1
Orientation: place (name)	1	–	–	–	–	–	1
Orientation: city	1	–	–	–	–	–	1
<b>TOTALS</b>	<b>30</b>	<b>15</b>	<b>13</b>	<b>18</b>	<b>6</b>	<b>7</b>	<b>6</b>

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\*\*The standard administration of the MoCA does not score category and recognition responses, even if administered.

\*\*\*If all five words are freely recalled, then cued and category recall are not administered and the total score would be 15 (3 points for each word recalled). After free recall, category cues are given *only for items not recalled*. Each word correct with category cue is awarded 2 points. After category cues, only words not correct are then tested with recognition. Award 1 point for each word correct on recognition (max=5). Here is an example: subject gets 2 free recall, 2 cued, and recognizes the fifth word; Memory Index Score: (2x3) + (2x2) + (1x1) = 11/15.

Subject ID \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Examiner's initials \_\_\_\_

## Craft Story 21 Recall (Immediate)

INSTRUCTIONS: Making sure you have the participant's attention, read the following instructions aloud. Then read the story slowly, articulating clearly and with normal inflection.

SAY: "I am going to read you a story. Listen carefully, and when I am through, I want you to tell me everything you can remember. Try to use the same words I use but you may also use your own words. The story is ..."

Maria's / child / Ricky / played / soccer / every / Monday /

at 3:30. / He / liked / going / to the field / behind / their / house /

and joining / the game. / One / day, / he / kicked / the ball / so / hard /

that it / went / over / the neighbor's / fence / where three / large /

dogs / lived. / The dogs' / owner / heard / loud / barking, / came /

out, / and helped / them / retrieve / the ball.

Record time administration ended:

Total story units recalled (VERBATIM SCORING): \_\_\_\_ / 44

Total story units recalled (PARAPHRASE SCORING): \_\_\_\_ / 25

As soon as the story is over, give the recall instruction:

SAY: "Now tell me the story I just told you. Try to remember as much as you can."

Record the participant's recall, writing between the lines of the story above. For rapid and accurate transcribing of the story, use abbreviations as needed, omit filler words and irrelevant verbiage, and if absolutely necessary, say "A little slower, please," rather than miss story elements. Make sure your transcription of the story is legible before proceeding.

After transcribing the story, you must give the delayed recall cue.

SAY: "Later on, I will ask you to tell me this story again, so try not to forget it." Note the time so that later you can calculate the time that has elapsed between Craft Story 21 Recall (Immediate) test and the Craft Story 21 Recall (delayed) test.

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## CRAFT STORY 21 RECALL (IMMEDIATE): VERBATIM SCORING

PERFECT VERBATIM RESPONSE (1.0 POINT): Give the subject 1 point for every bit for which content words are recalled exactly and completely. Allowances can be made for variations of verbs (e.g., “likes” for “liked,” “join” for “joining”) and minor omissions (e.g., “neighbor” for “neighbor’s”) or changes in number (e.g., “games” for “game”). The content words do not need to be recalled by the subject in the same order they were read to receive credit. The words can appear anywhere in the recall.

Maria’s	
child	
Ricky	
played	
soccer	
every	
Monday	
three thirty	
he	
liked	
going	
field	
behind	
their	
house	
joining	
game	
one	
day	
he	
kicked	
ball	
so	

hard	
it	
went	
over	
neighbor’s	
fence	
three	
large	
dogs	
lived	
dogs’	
owner	
heard	
loud	
barking	
came	
out	
helped	
them	
retrieve	
ball	
<b>TOTAL</b>	

## SCORING

Number of items recalled for verbatim scoring: Immediate Recall Score: \_\_\_\_\_ /44 maximum

# **GUIDELINES FOR PARAPHRASE SCORING, CRAFT STORY 21**

Item	General rule	Alternative 1-point responses	0-point responses	Points
<b>Maria's</b>	"Maria" or a variant of the name	Mary, Marie	Martha, Anna	
<b>child</b>	"child" or a phrase denoting it was a young person	son, kid, boy, teenager, young man	guy, children, daughter	
<b>Ricky</b>	"Ricky" or a variant of the name	Rick, Rich, Richie, Richard, Ricardo	Randy, Rusty, Robert	
<b>played</b>	"played" is required	to play, plays	did (soccer)	
<b>soccer</b>	"soccer" is required	futbol	baseball, volleyball, other sport	
<b>every Monday</b>	"Monday" or an indication that it occurred on a weekday	—	every day, another day of the week	
<b>at 3:30</b>	an indication that the activity took place in the afternoon	after school, every afternoon	after dinner, at night, in the morning	
<b>He liked going to the field</b>	an indication that he went to an outdoor area	went outside, went to the yard, going to the backyard	went to the school, gym	
<b>behind their house</b>	"house" or word denoting a house	home, residence, where they lived	any other building	
<b>and joining</b>	an indication that he participated in a game	played w/ other kids, became part of the team, playing w/ the team	watching, played in the park	
<b>the game.</b>	"game" in any context	—	—	
<b>One day</b>	"One day" is required	—	—	
<b>he kicked</b>	indication that he performed the activity with his foot	booted, punted	threw, hit (with no mention of the foot)	
<b>the ball</b>	"Ball" is required	football, soccer ball	baseball, volleyball	
<b>so hard</b>	an indication that force was used	so much force, so strongly, (kicked it) so far	—	
<b>that it went over</b>	"Over" is required	—	—	
<b>the neighbor's</b>	an indication that the person lived in the same area	nearby resident	friend's	
<b>fence</b>	"fence" or a word denoting a fence of some kind	garden wall, wall	property line, street	
<b>where three</b>	"Three" is required	three (boys)	—	
<b>large dogs lived.</b>	an indication that there were dogs present	hounds, doggies	puppies, cats, kittens, other animals	
<b>The dogs' owner</b>	an indication that the person was responsible for the dogs	neighbor (if owner implied and "neighbor" mentioned twice)	a bystander, the police	
<b>heard loud barking</b>	an indication that the dogs were making noise	yelping, baying, yapping, heard the dogs	saw the dogs running around	
<b>came out</b>	a word or phrase indicating that the owner was present	(owner) saw the ball	his mother came out, the dogs came out	
<b>and helped them</b>	a word or phrase indicating that help was provided	assisted, aided, had to help	—	
<b>retrieve the ball.</b>	an indication that they got the ball back	gave him the ball, return the ball, (helped him) get the ball —		

Number of items recalled for **paraphrase scoring**: Immediate Recall Score: \_\_\_\_\_ /25 maximum

Subject ID \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Examiner's initials \_\_\_\_

## Benson Complex Figure Copy (Immediate)

Give subject a pen, place sheet with figure in front of subject.









SAY: **"Please copy this design as best you can."**

Please do not use colored pencils for each element because this can be disruptive and will not be consistent with other ADCs. Instead, please write notes to track progress. Have subject make his or her copy in the lower half of the page below the figure. When design is completed, leave the figure in front of the subject for 5 seconds and say,

SAY: **"Be sure to remember this design, because I'll ask you to draw it again later from memory."**

A maximum of 4 minutes should be allowed for completing the drawing. Do not administer other figure-copy tests during the delay, and do not administer the Rey-Osterrieth before the Benson on the same day.

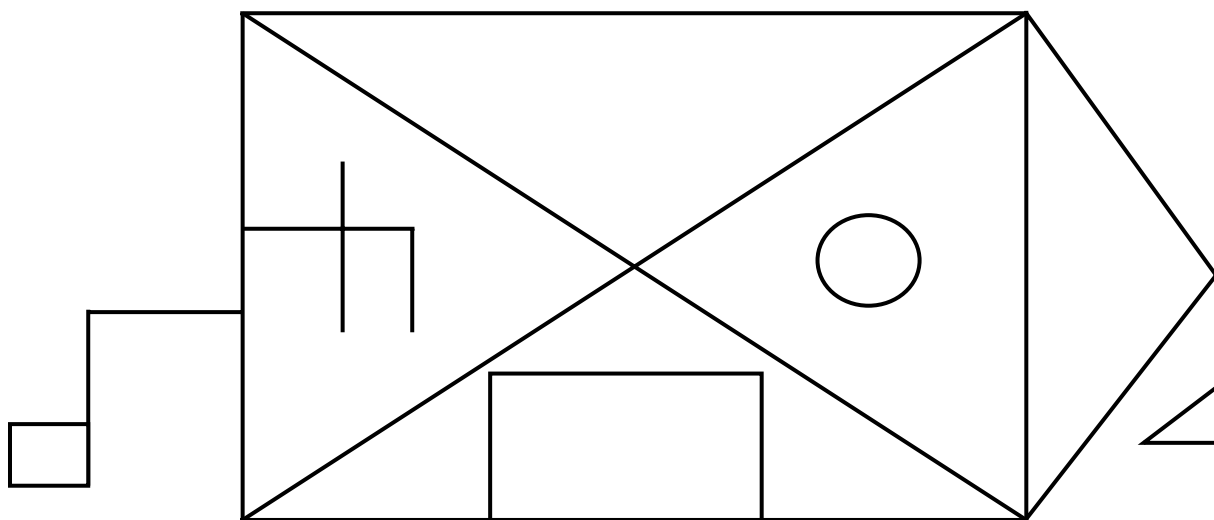
Allow approximately 10 – 15 minutes before administering the delayed recall portion of the test.

	1. Four-sided, 90° angles, width > height, any gaps or overlaps < 8mm	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	2. Reasonably straight lines; any gaps or overlaps < 8mm	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	3. Connects at middle third, no overlap with diagonals	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	4. Reasonably round, doesn't touch sides	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	5. Vertical lines > 1/2 distance to diagonals, width > height, 90° angles	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	6. Connects below #3, top of square above bottom	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	7. Vertex corresponds to middle third; any gaps or overlaps < 8mm	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	8. Gap between #8 and #7 < 5mm, angle at end of stem = 90°	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
BONUS		<input type="checkbox"/> 0	<input type="checkbox"/> 1	

Time of day design completed: \_\_\_\_ : \_\_\_\_ ☐ AM ☐ PM

TOTAL SCORE (circle one): 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

SCORING: For scoring guidelines, please see *NACC Uniform Data Set (UDS) Instructions for Neuropsychological Tests*. Each figural element is scored as 2 points if the element is drawn accurately and placed correctly in the figure (1 point for accuracy, 1 point for placement). Score 1 point if the element is poorly drawn but placed correctly or is correctly drawn but misplaced, and 0 points if the element is neither accurately drawn nor correctly placed.



Subject ID \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Examiner's initials \_\_\_\_

## Number Span Test: Forward

SAY: "I am going to ask you to repeat some numbers for me. Wait until I finish saying the numbers and then repeat them in the same order. For example, if I say 1-8-7, you would say 1-8-7. If I say 2-9-8, what would you say?" If the subject gives the wrong answer, say, "Actually, you would say 2-9-8."

SAY: "Repeat only the numbers I say each time." Then start with the test items. Before each item, say, "Ready?"

Stop testing after two consecutive failures of the same span length.

Span length		Response	Response code <i>incorrect = 0</i> <i>correct = 1</i>
3	1-8-4		_____
	2-7-9		_____
4	4-1-6-2		_____
	8-1-9-5		_____
5	6-4-9-2-8		_____
	7-3-8-6-1		_____
6	3-9-2-4-7-5		_____
	6-2-8-3-1-9		_____
7	9-6-4-7-1-5-3		_____
	7-4-9-2-6-8-1		_____
8	4-7-2-5-8-1-3-9		_____
	2-9-5-7-3-6-1-8		_____
9	6-8-4-1-9-3-5-2-7		_____
	1-3-9-2-7-5-8-6-4		_____
Total correct:			_____
Length of longest correct series:			_____

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Subject ID \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Examiner's initials \_\_\_\_

## Number Span Test: Backward

SAY: "I am now going to ask you to repeat some numbers for me but to reverse them from the way I say them. Wait until I finish saying the numbers and then repeat them in reverse order, or backward. For example, if I say 3-7-4, you would say 4-7-3. If I say 7-3-6, what would you say?" If the subject gives the wrong answer, say, "Actually, you would say 6-3-7."

SAY: "Repeat only the numbers I say each time, backward, in reverse order." Then start with the test items. Before each item, say, "Ready?"

Stop testing after two consecutive failures of the same span length.

Span length		Response	Response code <i>incorrect = 0</i> <i>correct = 1</i>
2	2 - 5		_____
	4 - 7		_____
3	2 - 9 - 6		_____
	3 - 7 - 4		_____
4	7 - 1 - 8 - 6		_____
	5 - 1 - 6 - 3		_____
5	5 - 2 - 4 - 9 - 1		_____
	9 - 1 - 7 - 3 - 6		_____
6	6 - 8 - 5 - 7 - 9 - 2		_____
	8 - 1 - 6 - 3 - 5 - 9		_____
7	1 - 5 - 2 - 9 - 7 - 3 - 8		_____
	7 - 3 - 1 - 6 - 8 - 5 - 2		_____
8	3 - 6 - 4 - 9 - 5 - 2 - 7 - 1		_____
	6 - 3 - 5 - 7 - 1 - 8 - 2 - 9		_____
Total correct:			_____
Length of longest correct series:			_____

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Subject ID \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Examiner's initials \_\_\_\_

## Category Fluency

### INSTRUCTIONS

SAY: **"I am going to give you a category and I want you to name, as fast as you can, all of the things that belong in that category. For example, if I say 'articles of clothing,' you could say 'shirt,' 'tie,' or 'hat.' Can you think of other articles of clothing?"**

Allow up to 20 seconds for the subject to produce two responses. Circle the number corresponding to the subject's responses, and read the associated instruction.

Response code	Instruction
0 (No response)	"You could have said 'shoes' or 'coat' since they are articles of clothing."
1 (One or more incorrect responses, no correct response)	"No, ____ is (are) not an article(s) of clothing. You could have said 'shoes' or 'coat' since they are articles of clothing."
2 (One or more correct response, no incorrect responses)	"That's right. You also could have said 'shoes' or 'coat'."
3 (One or more correct responses, one or more incorrect responses)	"____ is (are) correct, but ____ is (are) not an article of clothing. You also could have said 'shoes' or 'coat'."
4 (Two or more correct responses)	"That's right."

Next, read the instructions for the Animals category (worksheet follows this instruction page):

SAY: **"Now I want you to name things that belong to another category: Animals. You will have one minute. I want you to tell me all the animals you can think of in one minute. Ready? Begin."**

Start timer as you say "Begin." Write actual responses as legibly as possible on the Worksheet for Category Fluency — Animals. Stop the procedure at 60 seconds. One prompt (**"Tell me all the animals you can think of"**) is permitted if the participant makes no response for 15 seconds or expresses incapacity (e.g., "I can't think of any more"). It is also permissible to repeat the instruction or category if the subject specifically requests it.

Next, read the instructions for the Vegetables category (worksheet follows this instruction page):

SAY: **"Now I want you to name things that belong to another category: Vegetables. You will have one minute. I want you to tell me all the vegetables you can think of in one minute. Ready? Begin."**

Start timer as you say "Begin." Write actual responses as legibly as possible on the Worksheet for Category Fluency — Vegetables. Stop the procedure at 60 seconds. One prompt (**"Tell me all the vegetables you can think of"**) is permitted if the participant makes no response for 15 seconds or expresses incapacity (e.g., "I can't think of any more"). It is also permissible to repeat the instruction or category if the participant specifically requests it.

## Worksheet for Category Fluency — Animals

1. _____	27. _____	53. _____
2. _____	28. _____	54. _____
3. _____	29. _____	55. _____
4. _____	30. _____	56. _____
5. _____	31. _____	57. _____
6. _____	32. _____	58. _____
7. _____	33. _____	59. _____
8. _____	34. _____	60. _____
9. _____	35. _____	61. _____
10. _____	36. _____	62. _____
11. _____	37. _____	63. _____
12. _____	38. _____	64. _____
13. _____	39. _____	65. _____
14. _____	40. _____	66. _____
15. _____	41. _____	67. _____
16. _____	42. _____	68. _____
17. _____	43. _____	69. _____
18. _____	44. _____	70. _____
19. _____	45. _____	71. _____
20. _____	46. _____	72. _____
21. _____	47. _____	73. _____
22. _____	48. _____	74. _____
23. _____	49. _____	75. _____
24. _____	50. _____	76. _____
25. _____	51. _____	77. _____
26. _____	52. _____	

## Worksheet for Category Fluency — Vegetables

1. _____	27. _____	53. _____
2. _____	28. _____	54. _____
3. _____	29. _____	55. _____
4. _____	30. _____	56. _____
5. _____	31. _____	57. _____
6. _____	32. _____	58. _____
7. _____	33. _____	59. _____
8. _____	34. _____	60. _____
9. _____	35. _____	61. _____
10. _____	36. _____	62. _____
11. _____	37. _____	63. _____
12. _____	38. _____	64. _____
13. _____	39. _____	65. _____
14. _____	40. _____	66. _____
15. _____	41. _____	67. _____
16. _____	42. _____	68. _____
17. _____	43. _____	69. _____
18. _____	44. _____	70. _____
19. _____	45. _____	71. _____
20. _____	46. _____	72. _____
21. _____	47. _____	73. _____
22. _____	48. _____	74. _____
23. _____	49. _____	75. _____
24. _____	50. _____	76. _____
25. _____	51. _____	77. _____
26. _____	52. _____	

# Trail Making Test

## PART A

Place the form for SAMPLE A in front of the subject. Read aloud the instructions:

SAY: **"There are numbers in circles on this page. Please take the pencil and draw a line from one number to the next, in order. Start at 1 [point to the number], then go to 2 [point to the number], then go to 3 [point to the number] and so on. Please try not to lift the pencil as you move from one number to the next. Work as quickly as you can. Begin here [point to "Begin" number] and end here [point to "End" number]."**

If the subject makes an error, mark through the line and go back to the point at which the error was made and say, for example, **"You were at number 2. What is the next number?"** Wait for the subject's response. If the subject indicates 3, say **"Please start here [point to the 2] and continue."** If the subject indicates any other number, say **"The next number would be 3."** Then point to 2 and say **"Please start here and continue."** If the subject cannot complete the sample and clearly does not comprehend the task, do not administer Test A. In that event, on the recording form enter the appropriate code (996=cognitive/ behavioral problem).

If the subject completes the sample, go to TEST A.

SAY: **"On this page there are more numbers in circles. Please take the pencil and draw a line from one circle to the next, in order. Start at 1 [point to "Begin" number] and end here [point to "End" number]. Please try not to lift the pencil as you move from one circle to the next. Work as quickly as you can."** Start timing as soon as the instruction is given to begin.

NOTE: In giving the instructions for the test form (as opposed to the sample), the examiner tells the subject to move from one circle to the next and does not use the word "number."

If the subject makes an error, mark through the line and say **"That one was not correct."** Point to the last correct number and say **"Please start here and continue."** This is done for each error. The examiner should attempt to provide corrections as quickly as possible. Stop timing when the Trail is completed, or stop subject when the maximum time is reached. Allow a maximum of 150 seconds for the test.

## PART B

Place the form for SAMPLE B in front of the subject. Present the sample for Part B even if the subject failed the sample for Part A. Read aloud the instructions:

[SAY]: **"There are numbers and letters in circles on this page. Please take the pencil and draw a line, alternating in order between the numbers and letters. Start at number 1 [point to the number], then go to the first letter, A [point to the letter], then go to the next number, 2 [point to the number], and then the next letter, B [point to the letter], and so on. Please try not to lift the pencil as you move from one number or letter to the next. Work as quickly as you can."**

If the subject makes an error, mark through the line and go back to the point at which the error was made and say, for example, **"You were at number 2. What is the next letter?"** Wait for the subject's response. If it is correct, say **"Please start here [point to the 2] and continue."** If the subject picks the wrong item, say **"The next letter would be B [point to the B]."** Then point to the 2 and say **"Please start here and continue."** If the

subject cannot complete the sample and clearly does not comprehend the task, do not administer the test. Enter the appropriate code (996 = cognitive/behavioral problem).

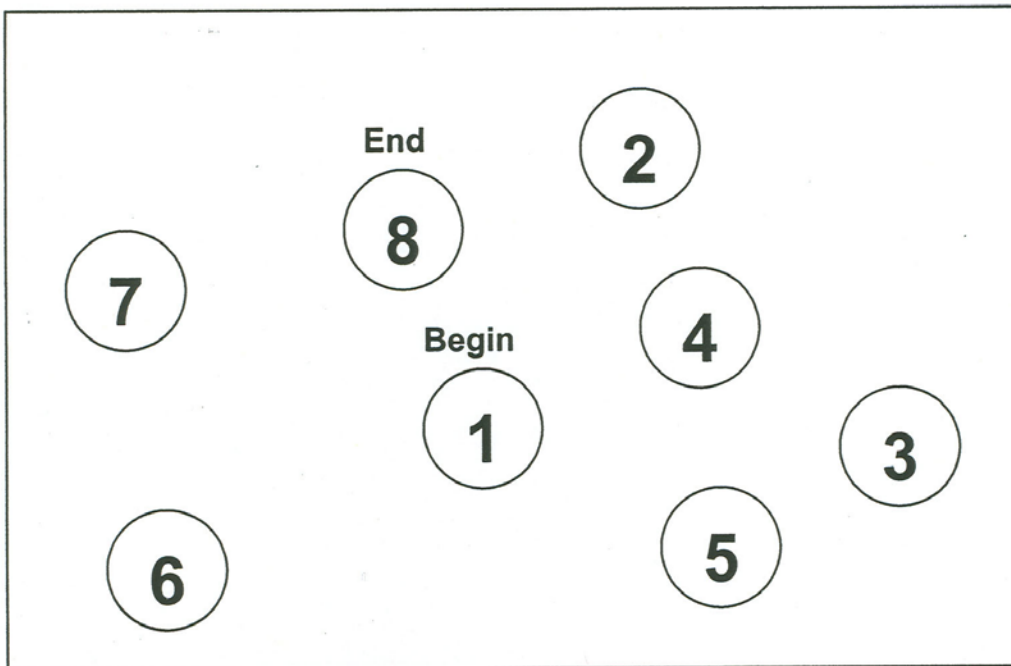
If the subject completes the sample correctly, go to TEST B.

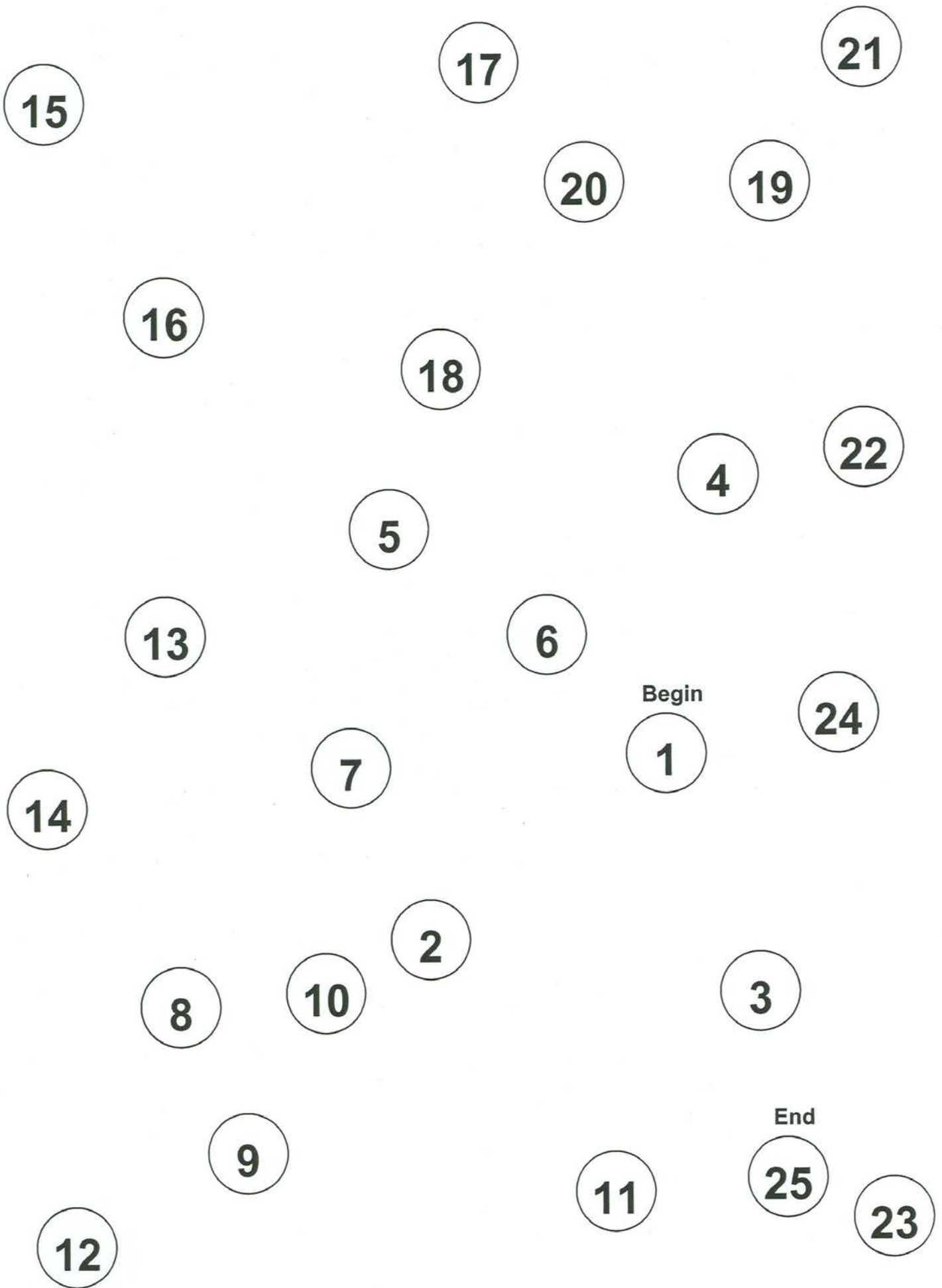
SAY: **“On this page, there are more numbers and letters in circles. Please take the pencil and draw a line from one circle to the next, alternating in order between the numbers and letters. Start at 1** [point to the “Begin” number] **and end here** [point to the “End” number]. **Please try not to lift the pencil as you move from one circle to the next. Work as quickly as you can.”** Start timing as soon as the instruction is given to begin.

NOTE: In giving the instructions for the test form (as opposed to the sample), the examiner tells the subject to move from one circle to the next and does not use the words “number” or “letter.”

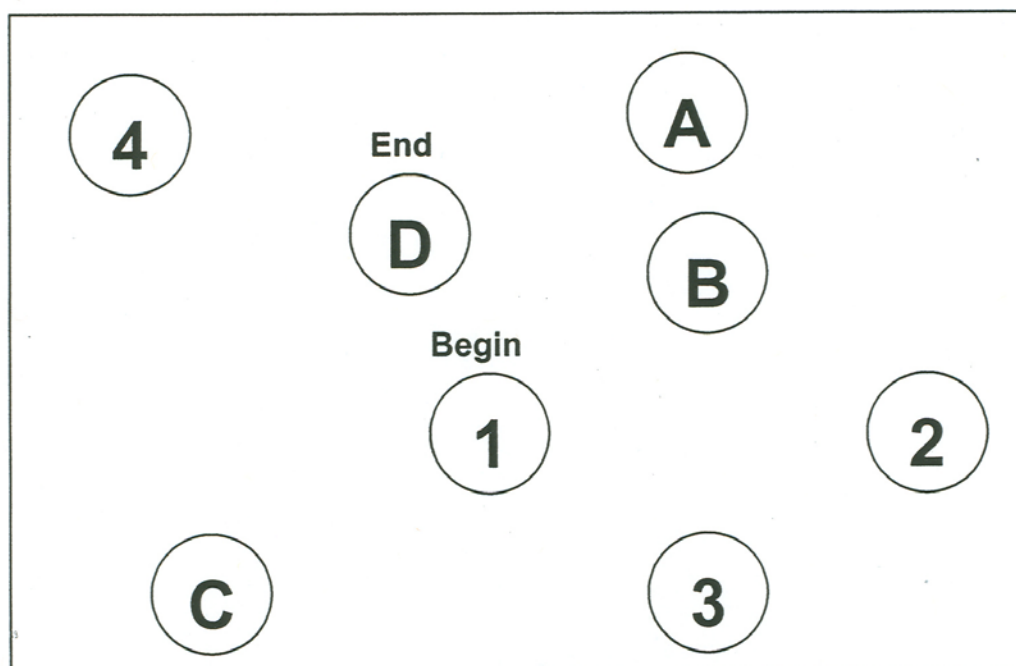
If the subject makes an error, mark through the line and say, **“That one was not correct.”** Point to the last correct item and say, **“Please start here and continue.”** This is done for each error. Do not indicate whether the next item should be a number or a letter. The examiner should attempt to provide corrections as quickly as possible. Stop timing when the Trail is completed, or stop subject when the maximum time is reached. Allow a maximum of 300 seconds for the test.

## Sample A





## Sample B



End

13

10

9

I

D

8

B

4

3

Begin

7

1

5

H

C

12

G

A

J

L

2

6

E

F

11

K

Subject ID \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Examiner's initials \_\_\_\_

## Craft Story 21 Recall (Delayed)

INSTRUCTIONS: Administer this test approximately 20 minutes after Craft Story 21 Recall (Immediate), making note of the time administration of Craft Story 21 Recall (Delayed) began. NOTE: If 20 minutes have not elapsed, do not add other tests to fill the interval. You may obtain other data, such as blood pressure, weight, etc. Administer Craft Story 21 Recall (Delayed) and record the actual time elapsed.

SAY: **"I read you a story a few minutes ago. Can you tell me what you remember about that story now?"**

If the subject does not recall the story or having been told a story, make a note as indicated below and

SAY: **"It was a story about a boy. Can you tell it to me now?"**

**Maria's / child / Ricky / played / soccer / every / Monday /**

**at 3:30. / He / liked / going / to the field / behind / their / house /**

**and joining / the game. / One / day, / he / kicked / the ball / so / hard /**

**that it / went / over / the neighbor's / fence / where three / large /**

**dogs / lived. / The dogs' / owner / heard / loud / barking, / came /**

**out, / and helped / them / retrieve / the ball.**

Record time administration began:

Total story units recalled (VERBATIM SCORING): \_\_\_\_\_ / 44

Total story units recalled (PARAPHRASE SCORING): \_\_\_\_\_ / 25

Time elapsed since Craft Story 21 Recall (Delayed): \_\_\_\_\_ minutes

Cue ("boy") needed: ☐ No ☐ Yes

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### CRAFT STORY 21 RECALL (DELAYED): VERBATIM SCORING

PERFECT VERBATIM RESPONSE (1.0 POINT): Give the subject 1 point for every bit for which content words are recalled exactly and completely. Allowances can be made for variations of verbs (e.g., “likes” for “liked,” “join” for “joining”) and minor omissions (e.g., “neighbor” for “neighbor’s”). The content words do not need to be recalled by the subject in the same order they were read to receive credit. The words can appear anywhere in the recall.

Maria’s	
child	
Ricky	
played	
soccer	
every	
Monday	
three thirty	
he	
liked	
going	
field	
behind	
their	
house	
joining	
game	
one	
day	
he	
kicked	
ball	

so	
hard	
it	
went	
over	
neighbor’s	
fence	
three	
large	
dogs	
lived	
dogs’	
owner	
heard	
loud	
barking	
came	
out	
helped	
them	
retrieve	
ball	
<b>TOTAL</b>	

### SCORING

Number of items recalled for verbatim scoring: Delayed Recall Score: \_\_\_\_\_ /44 maximum

# **GUIDELINES FOR PARAPHRASE SCORING, CRAFT STORY 21**

Item	General rule	Alternative 1-point responses	0-point responses	Points
<b>Maria's</b>	"Maria" or a variant of the name	Mary, Marie	Martha, Anna	
<b>child</b>	"child" or a phrase denoting it was a young person	son, kid, boy, teenager, young man	guy, children, daughter	
<b>Ricky</b>	"Ricky" or a variant of the name	Rick, Rich, Richie, Richard, Ricardo	Randy, Rusty, Robert	
<b>played</b>	"played" is required	to play, plays	did (soccer)	
<b>soccer</b>	"soccer" is required	futbol	baseball, volleyball, other sport	
<b>every Monday</b>	"Monday" or an indication that it occurred on a weekday	—	every day, another day of the week	
<b>at 3:30</b>	an indication that the activity took place in the afternoon	after school, every afternoon	after dinner, at night, in the morning	
<b>He liked going to the field</b>	an indication that he went to an outdoor area	went outside, went to the yard, going to the backyard	went to the school, gym	
<b>behind their house</b>	"house" or word denoting a house	home, residence, where they lived	any other building	
<b>and joining</b>	an indication that he participated in a game	played w/ other kids, became part of the team, playing w/ the team	watching, played in the park	
<b>the game.</b>	"game" in any context	—	—	
<b>One day</b>	"One day" is required	—	—	
<b>he kicked</b>	indication that he performed the activity with his foot	booted, punted	threw, hit (with no mention of the foot)	
<b>the ball</b>	"Ball" is required	football, soccer ball	baseball, volleyball	
<b>so hard</b>	an indication that force was used	so much force, so strongly, (kicked it) so far	—	
<b>that it went over</b>	"Over" is required	—	—	
<b>the neighbor's</b>	an indication that the person lived in the same area	nearby resident	friend's	
<b>fence</b>	"fence" or a word denoting a fence of some kind	garden wall, wall	property line, street	
<b>where three</b>	"Three" is required	three (boys)	—	
<b>large dogs lived.</b>	an indication that there were dogs present	hounds, doggies	puppies, cats, kittens, other animals	
<b>The dogs' owner</b>	an indication that the person was responsible for the dogs	neighbor (if owner implied and "neighbor" mentioned twice)	a bystander, the police	
<b>heard loud barking</b>	an indication that the dogs were making noise	yelping, baying, yapping, heard the dogs	saw the dogs running around	
<b>came out</b>	a word or phrase indicating that the owner was present	(owner) saw the ball	his mother came out, the dogs came out	
<b>and helped them</b>	a word or phrase indicating that help was provided	assisted, aided, had to help	—	
<b>retrieve the ball.</b>	an indication that they got the ball back	gave him the ball, return the ball, (helped him) get the ball —		

Number of items recalled for **paraphrase scoring**: Delayed Recall Score: \_\_\_\_\_ /25 maximum

Subject ID \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_









Examiner's initials \_\_\_\_

## Benson Complex Figure Copy (Delayed)

The interval between copy and recall of the Benson figure should be 10–15 minutes.

SAY: **"Remember that figure that I asked you to copy a while ago? I want you to draw as much of it as you can remember."**

Note order of completion.

	1. Four-sided, 90° angles, width > height, any gaps or overlaps < 8mm	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	2. Reasonably straight lines; any gaps or overlaps < 8mm	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	3. Connects at middle third, no overlap with diagonals	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	4. Reasonably round, doesn't touch sides	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	5. Vertical lines > 1/2 distance to diagonals, width > height, 90° angles	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	6. Connects below #3, top of square above bottom	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	7. Vertex corresponds to middle third; any gaps or overlaps < 8mm	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
	8. Gap between #8 and #7 < 5mm, angle at end of stem = 90°	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2
BONUS		<input type="checkbox"/> 0	<input type="checkbox"/> 1	

Time of day design completed: \_\_\_\_ : \_\_\_\_ ☐ AM ☐ PM

TOTAL SCORE (circle one): 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

### RECOGNITION

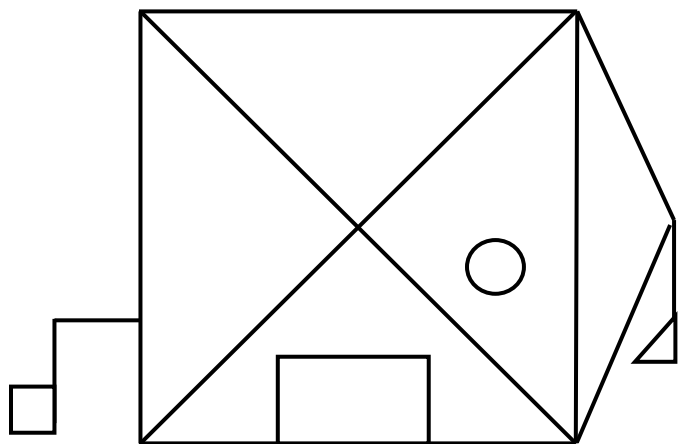
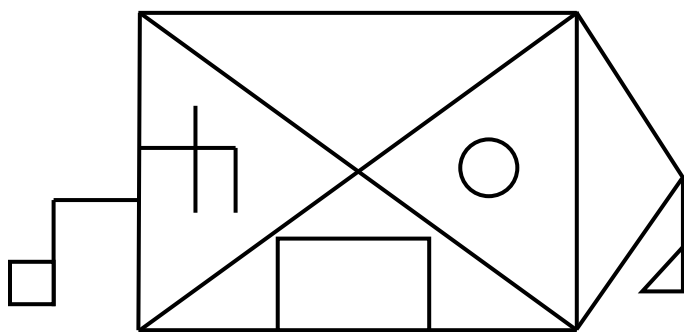
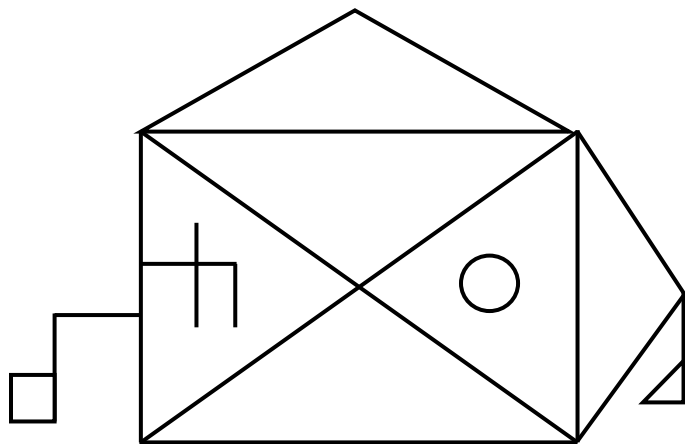
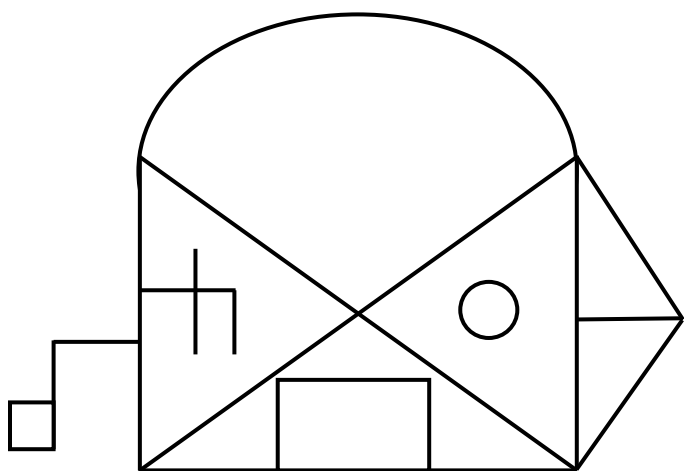
SAY: **Which of the figures was the one you copied before?**

Did subject recognize original stimulus from among four options? ☐ 0 No ☐ 1 Yes

SCORING: For scoring guidelines, please see *NACC Uniform Data Set (UDS) Instructions for Neuropsychological Tests*. Each figural element is scored as 2 points if the element is drawn accurately and placed correctly in the figure (1 point for accuracy, 1 point for placement). Score 1 point if the element is poorly drawn but placed correctly or is correctly drawn but misplaced, and 0 points if the element is neither accurately drawn nor correctly placed.

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Subject ID \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Examiner's initials \_\_\_\_

# MINT (Multilingual Naming Test)

## INSTRUCTIONS AND CUEING

SAY: "I am going to show you some pictures of objects, one at a time. Please tell me the name of each object, that is, tell me what it is called. If you cannot think of the name try to make your best guess. If you don't know what the object is, I will try to help you. Do you have any questions?"

Stop testing after six consecutive failures.

Item #	English	Semantic cue	Spontaneous Response(s)	Uncued	Semantic cue		Phonemic cue	
				correct	correct	incorrect	correct	incorrect
1	<b>Butterfly</b>	an insect						
2	<b>Glove</b>	an article of clothing						
3	<b>Lightbulb</b>	used to see better and is turned on electrically						
4	<b>Watch</b>	used to tell the time						
5	<b>Candle</b>	is used in the dark to make light						
6	<b>Clown</b>	found in a circus						
7	<b>Kite</b>	a toy that uses the wind to make it fly						
8	<b>Rainbow</b>	it's colorful and is found in the sky after it rains						
9	<b>Witch</b>	a woman with magical powers						
10	<b>Seesaw</b>	found on a playground						
11	<b>Flashlight</b>	used to see better and is battery-operated						
12	<b>Peacock</b>	a bird						
13	<b>Snail</b>	an animal						
14	<b>Whale</b>	an ocean animal						
15	<b>Cage</b>	an enclosure for animals						
16	<b>Nest</b>	it's where birds lay their eggs						

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Item #	English	Semantic cue	Spontaneous Response(s)	Uncued	Semantic cue		Phonemic cue	
				correct	correct	incorrect	correct	incorrect
17	<u>P</u> lug	found on electronic devices						
18	<u>W</u> ig	it's worn on the head						
19	<u>S</u> crew	it's like a nail but it grooves into wood or a wall						
20	<u>S</u> carf	clothing worn on the neck						
21	<u>W</u> ell	used to obtain water						
22	<u>D</u> ustpan	used to remove dust and trash						
23	<u>P</u> a rachute	used to jump from airplane						
24	<u>B</u> lind	used to block out light						
25	<u>H</u> inge	part of a door						
26	<u>F</u> unnel	used for pouring liquid from one container to another						
27	<u>G</u> auge	used to measure air pressure						
28	<u>P</u> orthole	found on a ship						
29	<u>A</u> nvil	used for shaping metal						
30	<u>M</u> ortar	used to grind different substances						
31	<u>P</u> estle	used to grind different substances						
32	<u>A</u> xle	a supporting shaft on which wheels revolve						

### SCORING:

(1.0 point for each correct answer under Uncued or Semantic columns, 0.0 points for correct answer under Phonemic column)

a. Total correct without a cue ("Uncued" column): \_\_\_\_\_

b. Total correct with a semantic cue given ("Semantic" column): \_\_\_\_\_

c. Total correct (sum of a + b, maximum of 32): \_\_\_\_\_

# MiNT

## Multilingual Naming Test

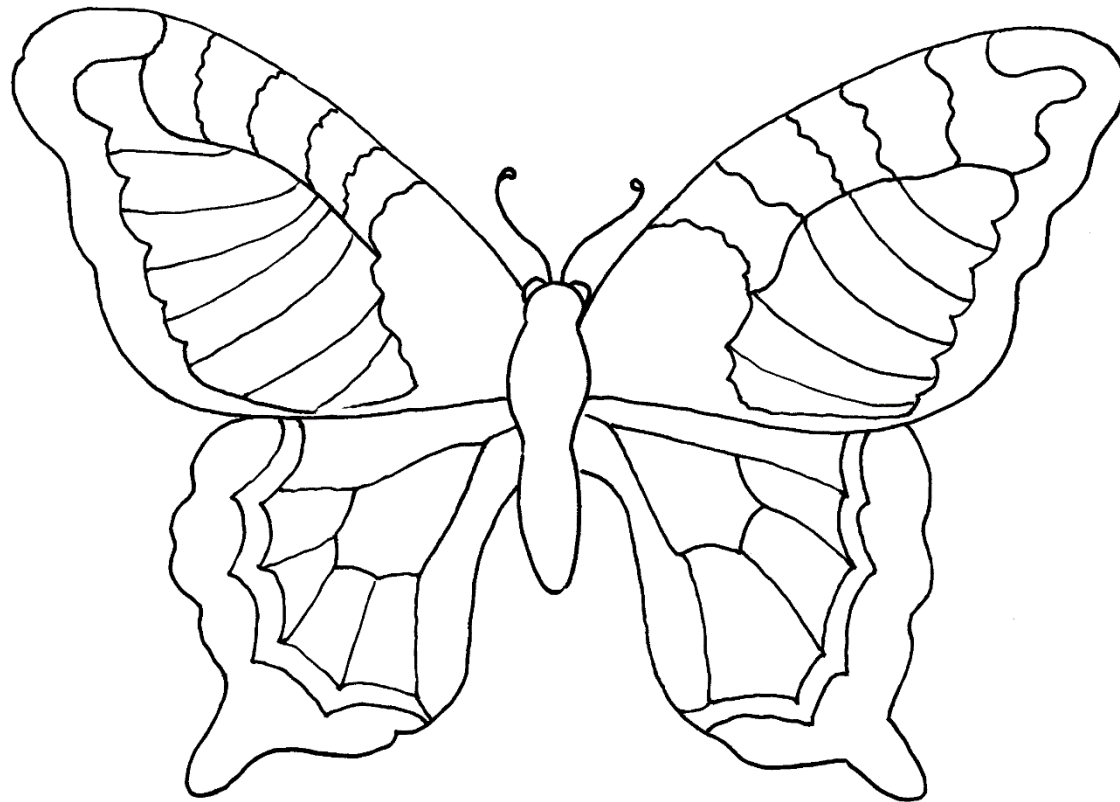
*For speakers of English, Spanish, Mandarin, Hebrew, or any combination of these languages*

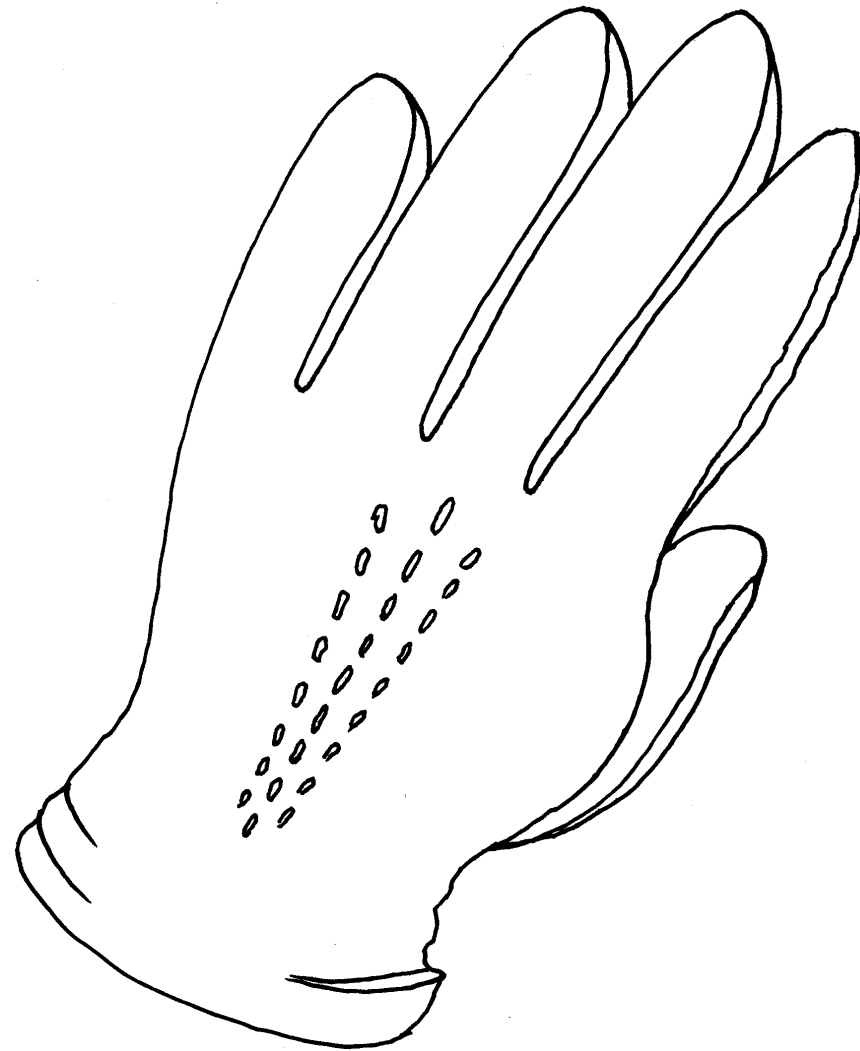
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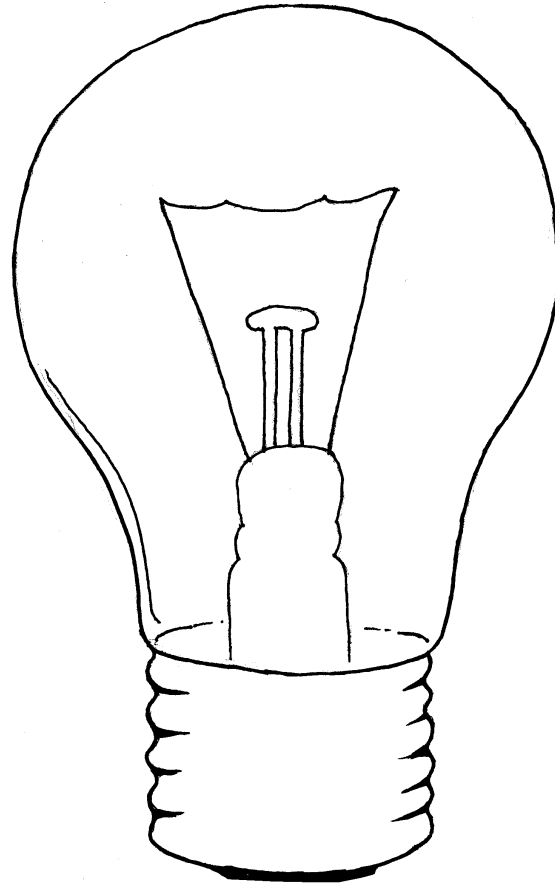
[tgollan@ucsd.edu](mailto:tgollan@ucsd.edu)

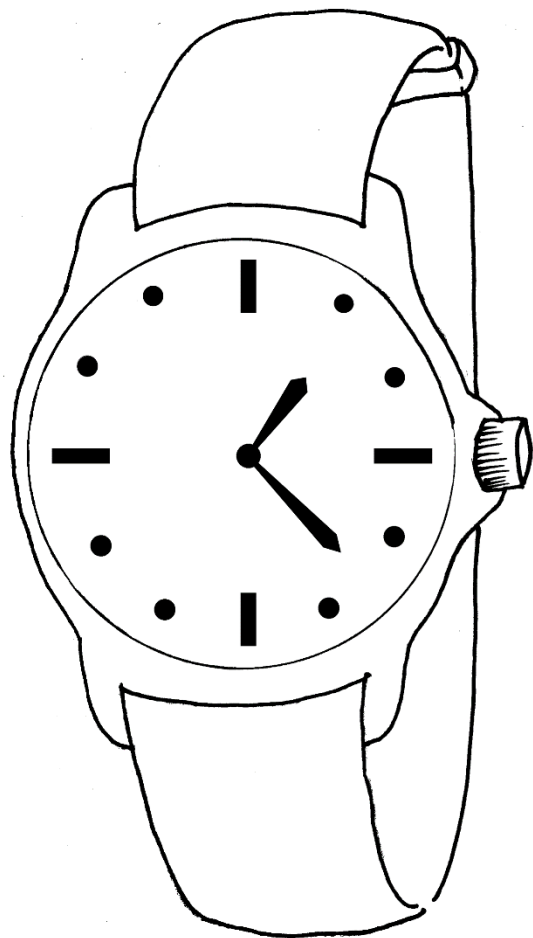
Ivanova, I., Salmon, D.P., & Gollan, T.H. The Multilingual Naming Test in Alzheimer's disease: Clues to the origin of naming impairments. *The Journal of the International Neuropsychological Society*, 2013; 19:272-283.

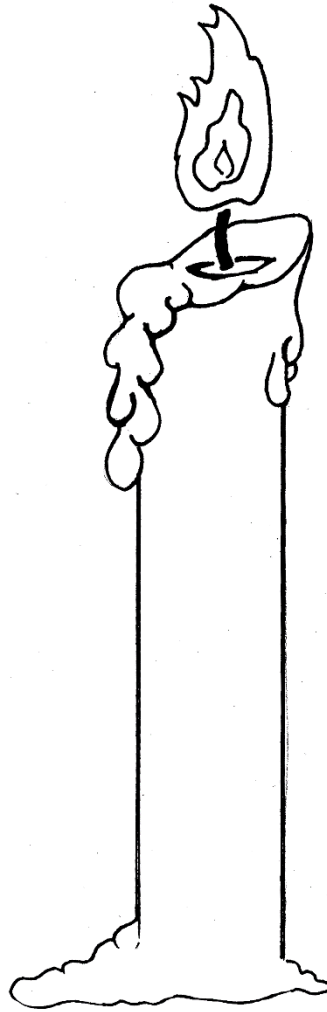
Gollan, T.H., Weissberger, G., Runnqvist, E., Montoya, R.I., & Cera, C.M. (2012) Self-ratings of spoken language dominance: A multi-lingual naming test (MINT) and preliminary norms for young and aging Spanish-English bilinguals. *Bilingualism: Language and Cognition*, 15, 594-615.



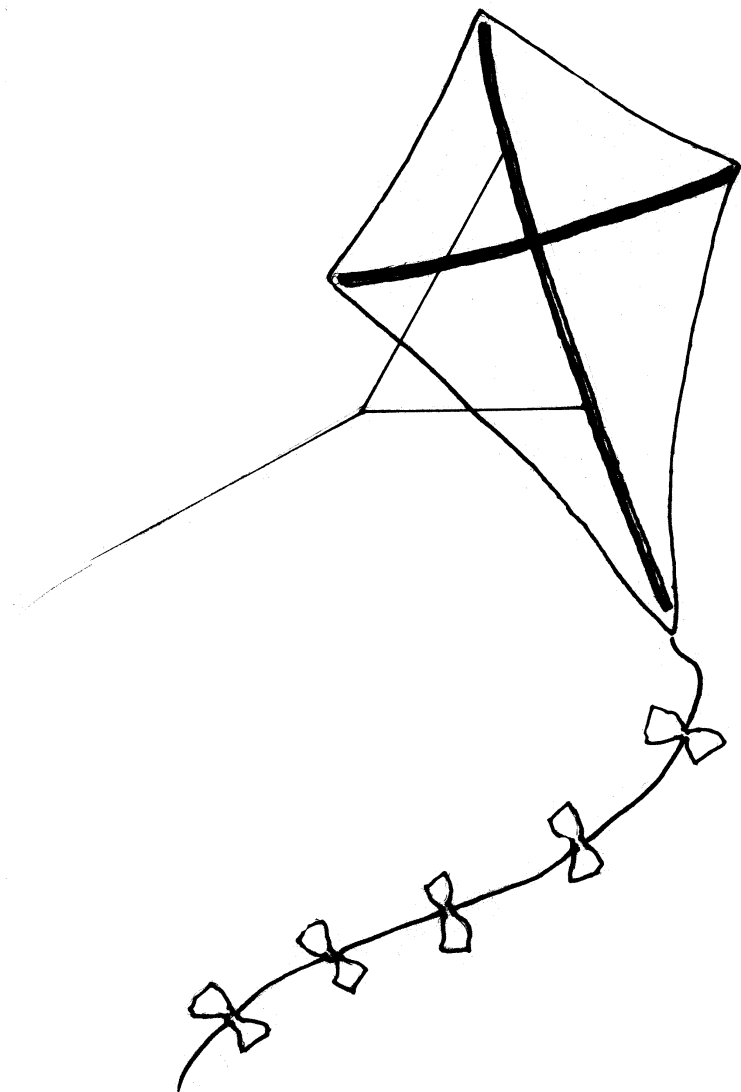


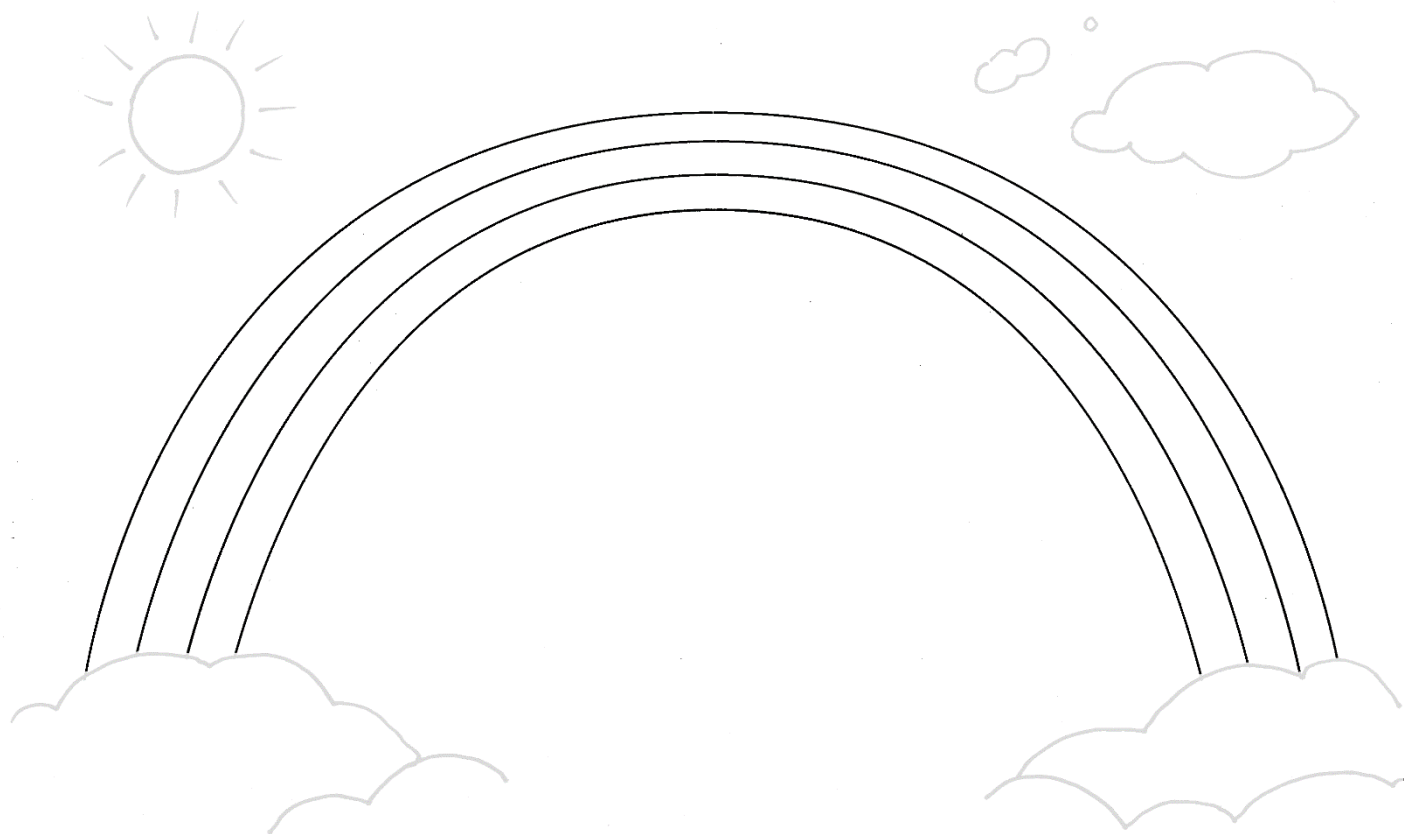




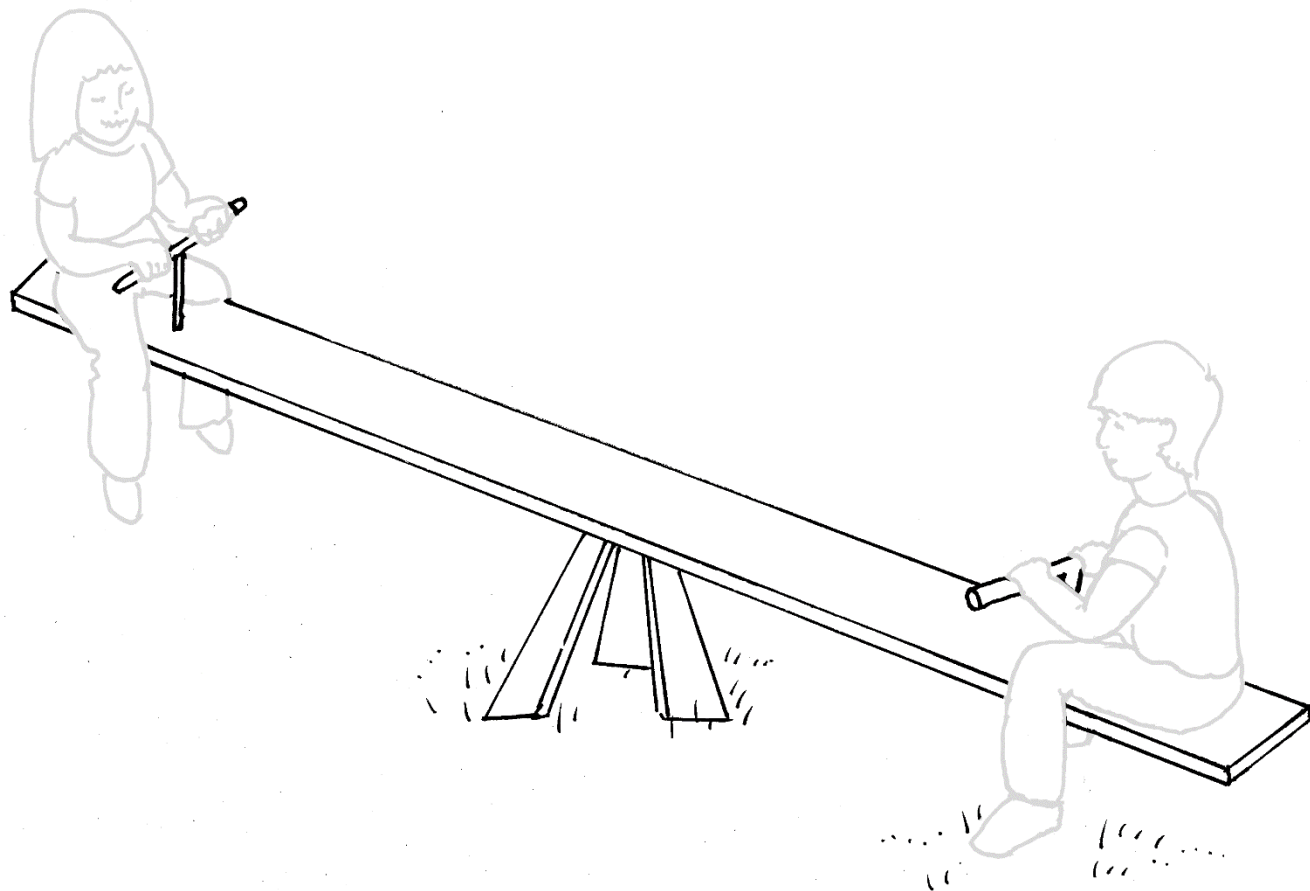


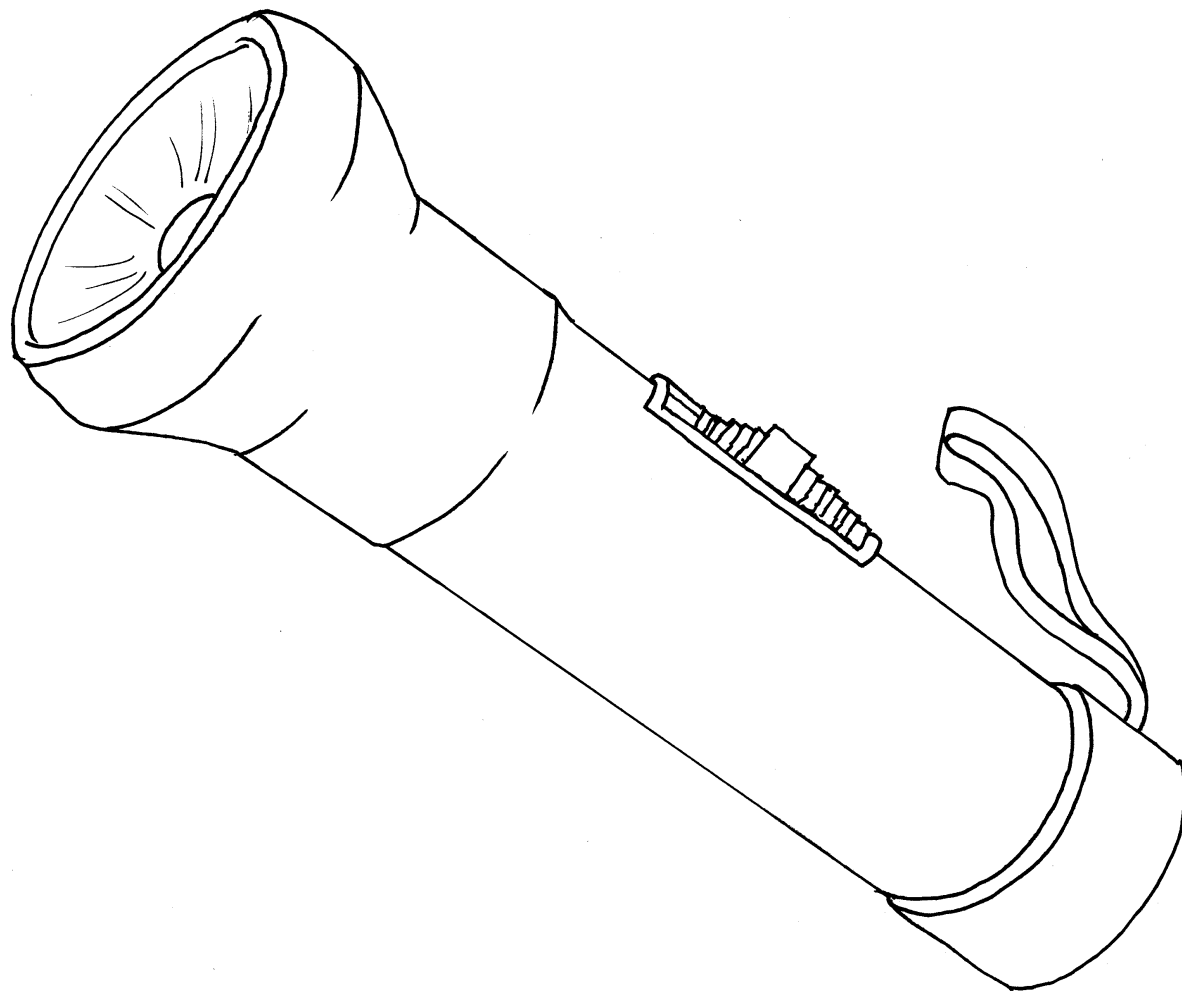


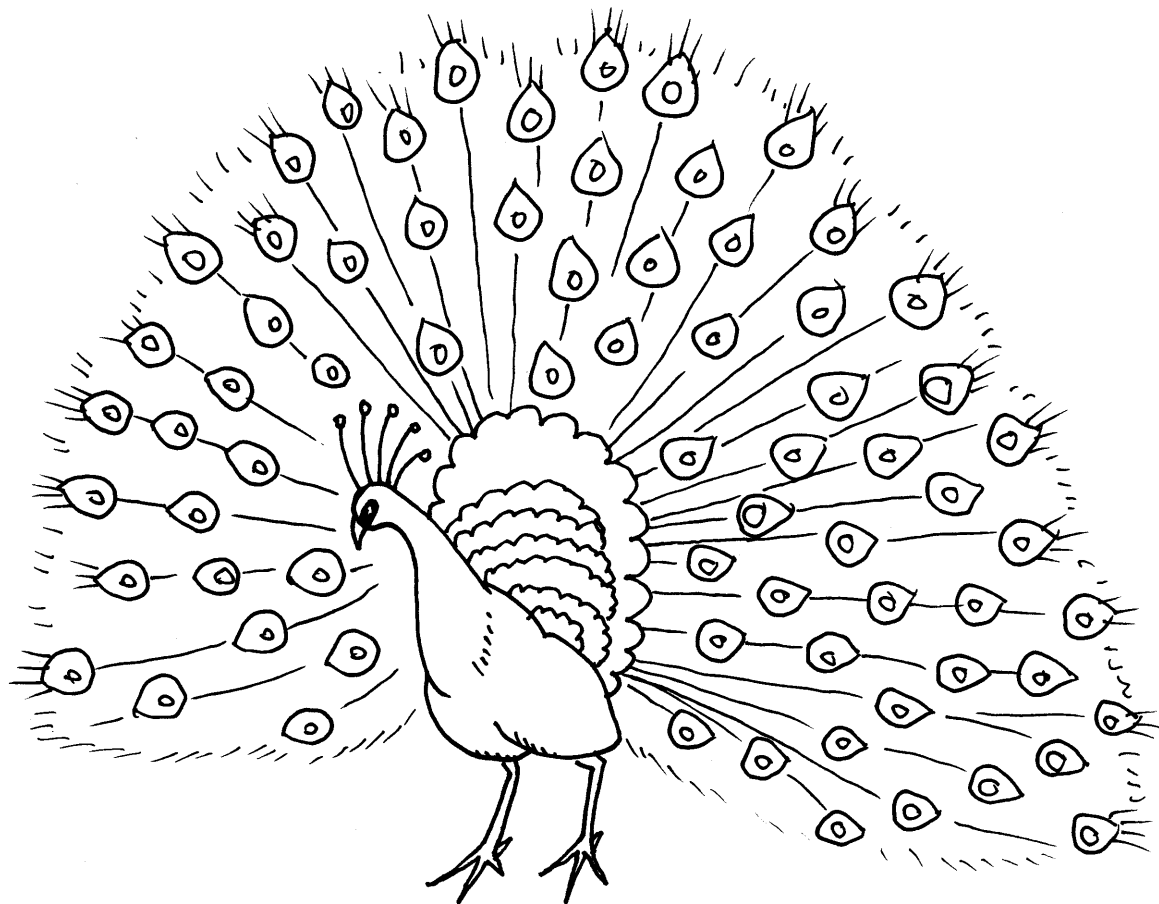


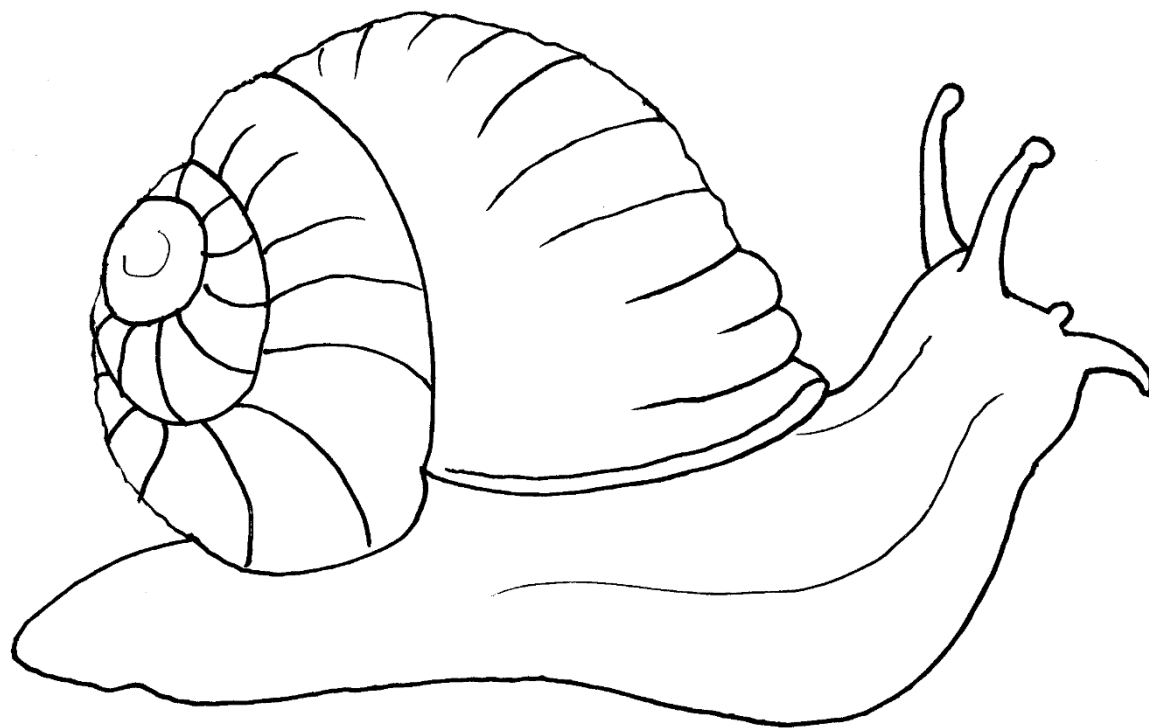


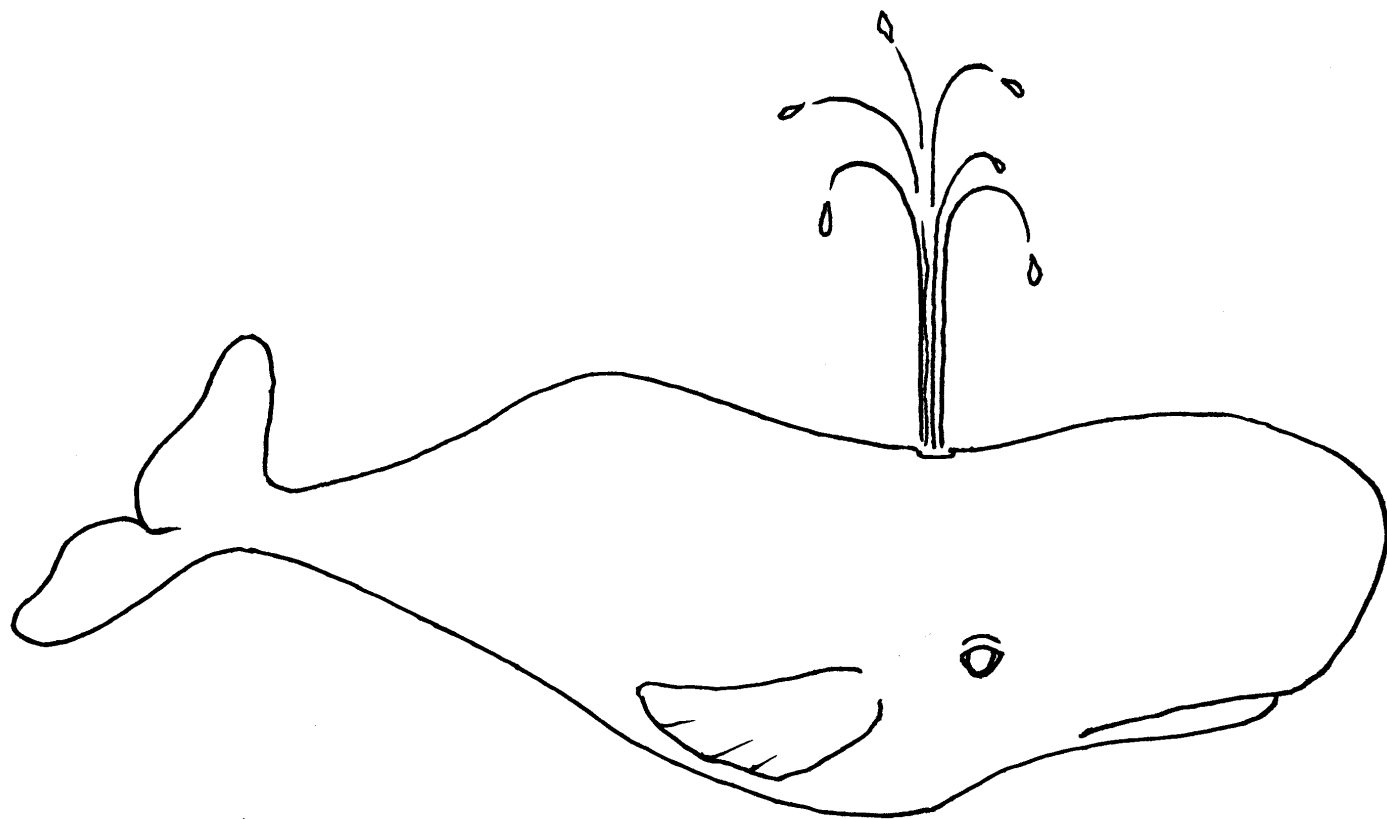


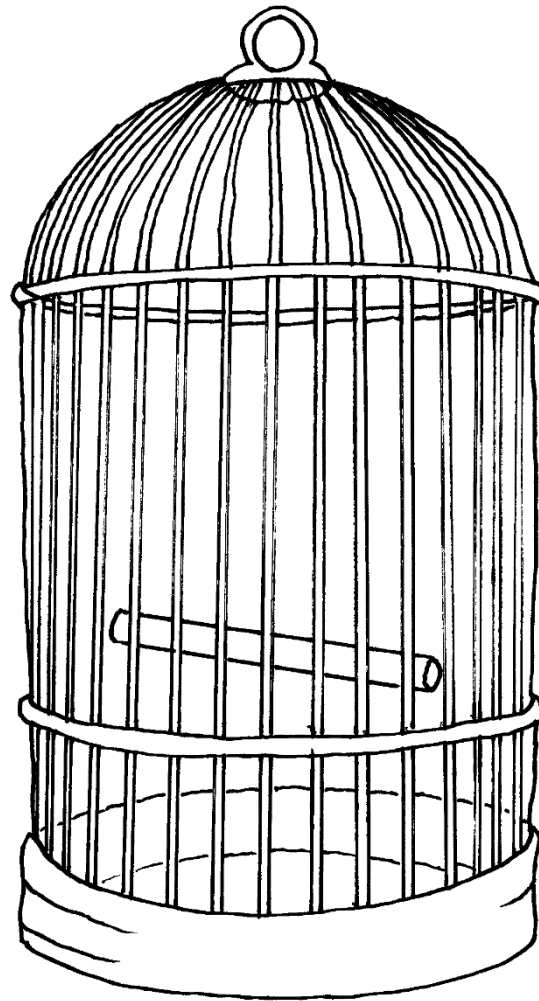




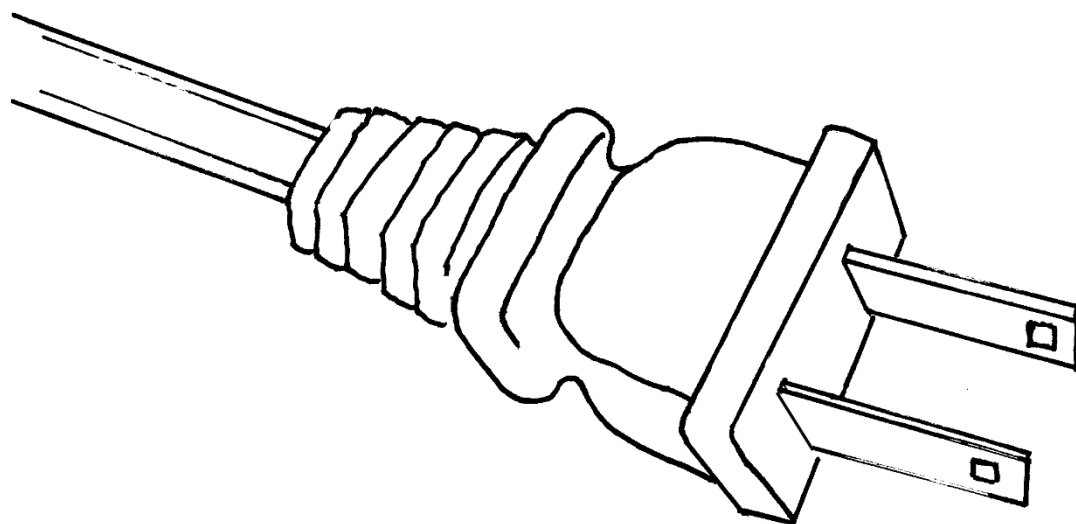


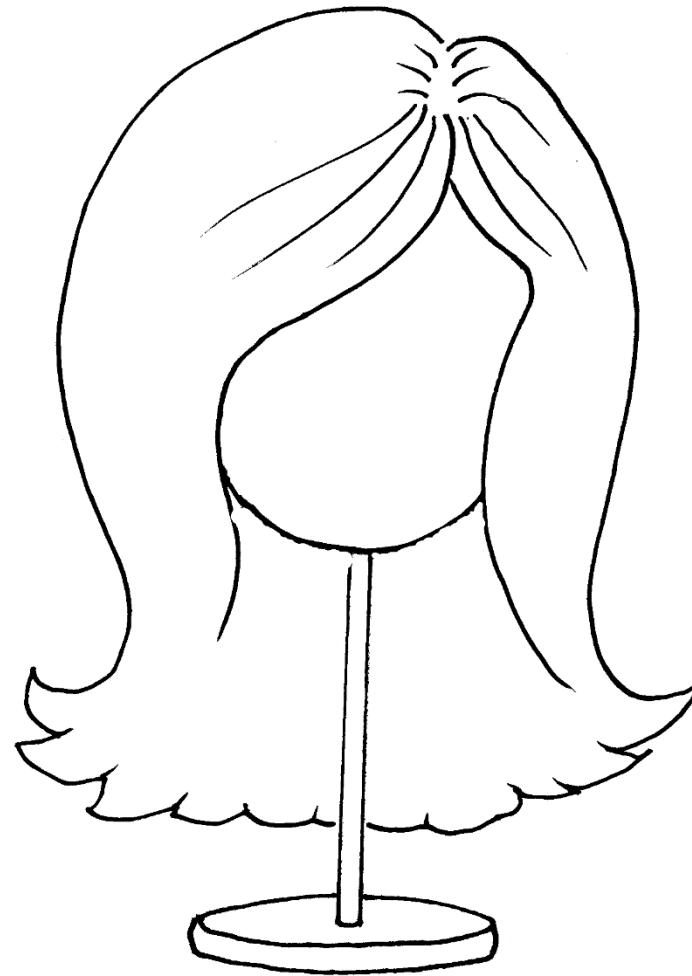


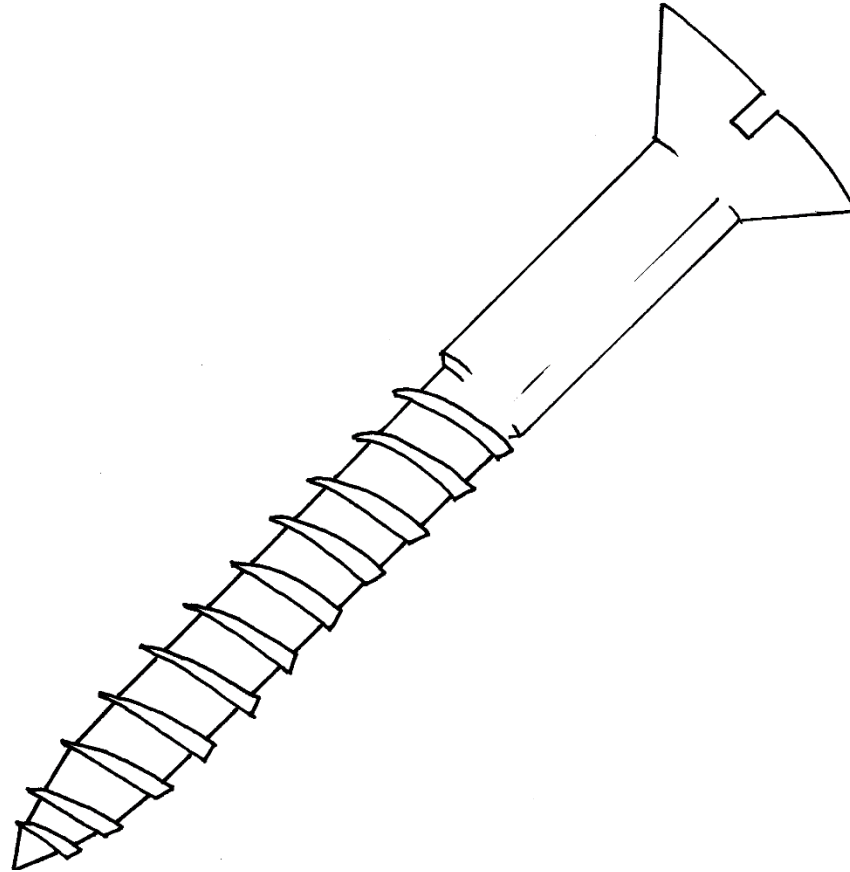


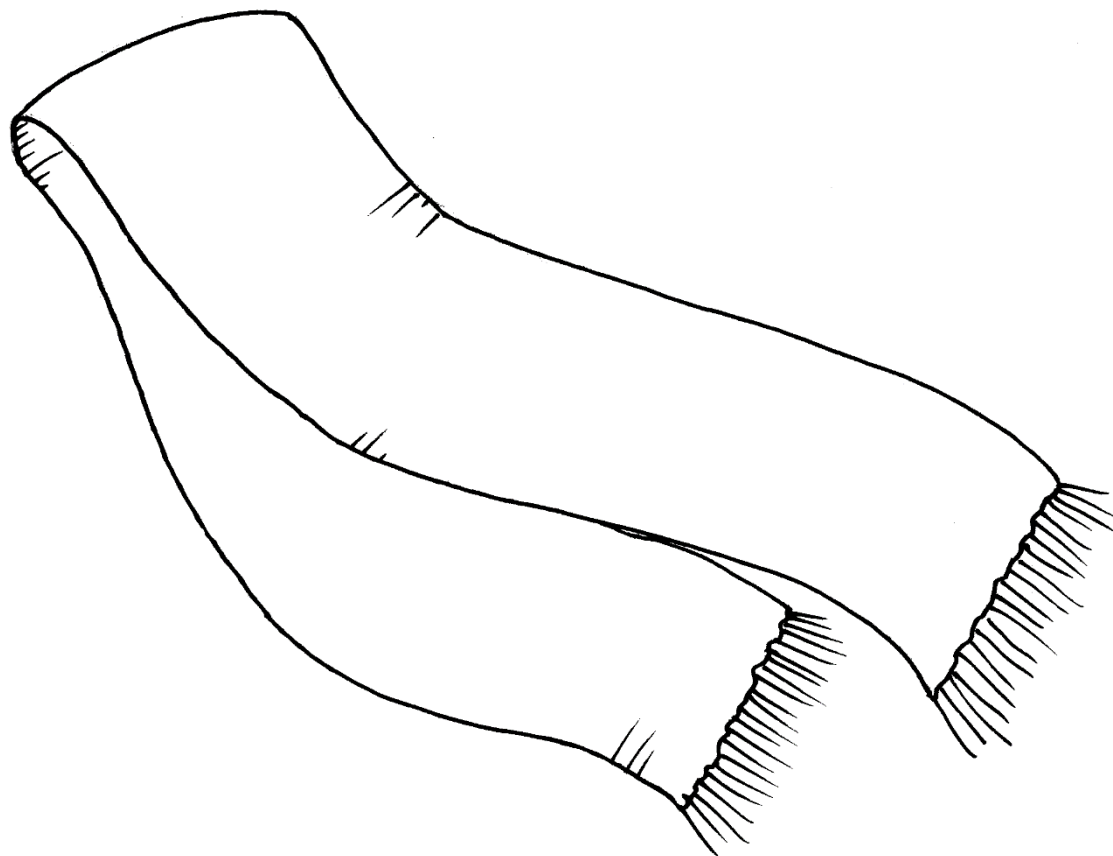


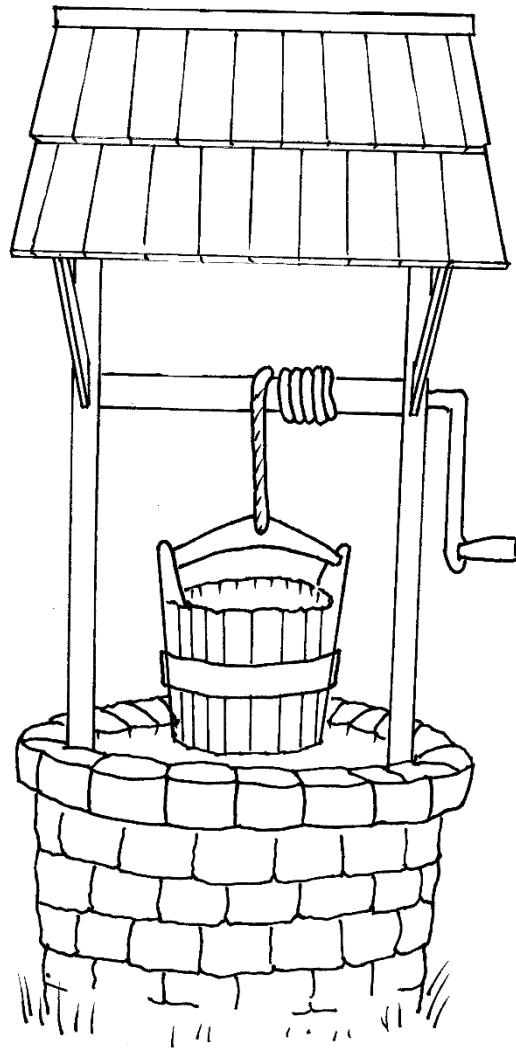


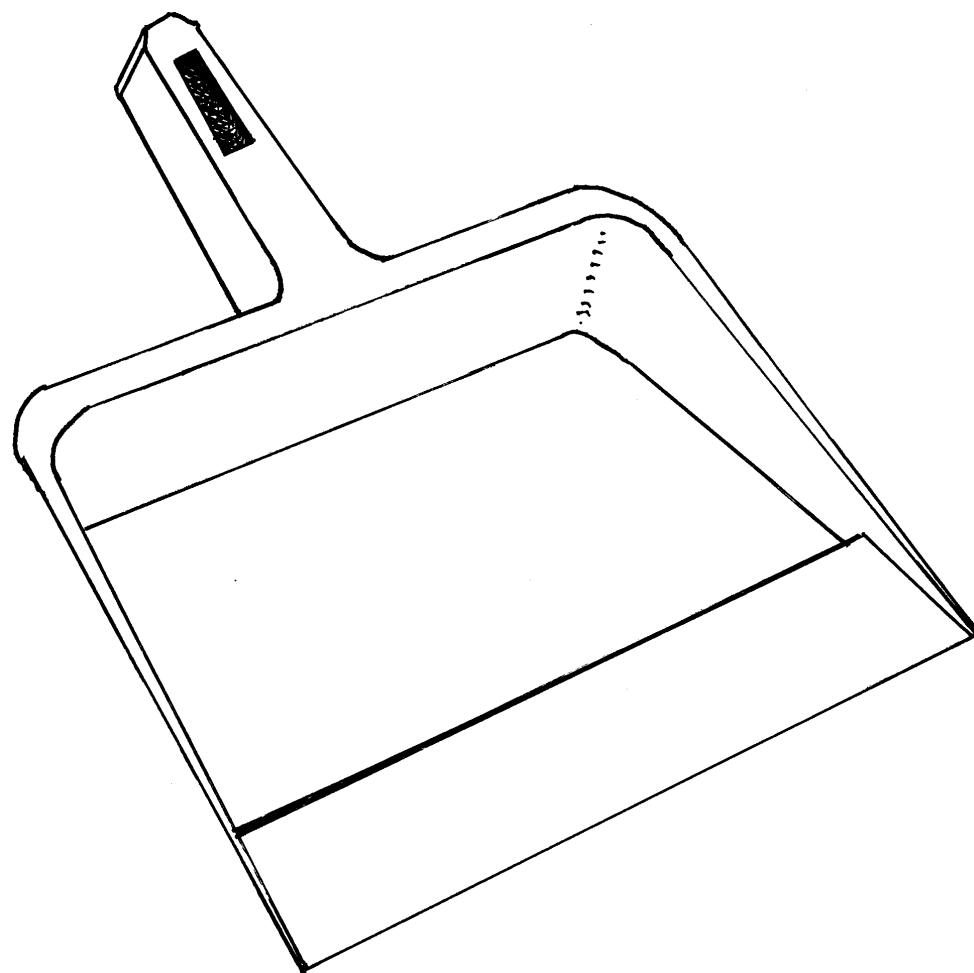


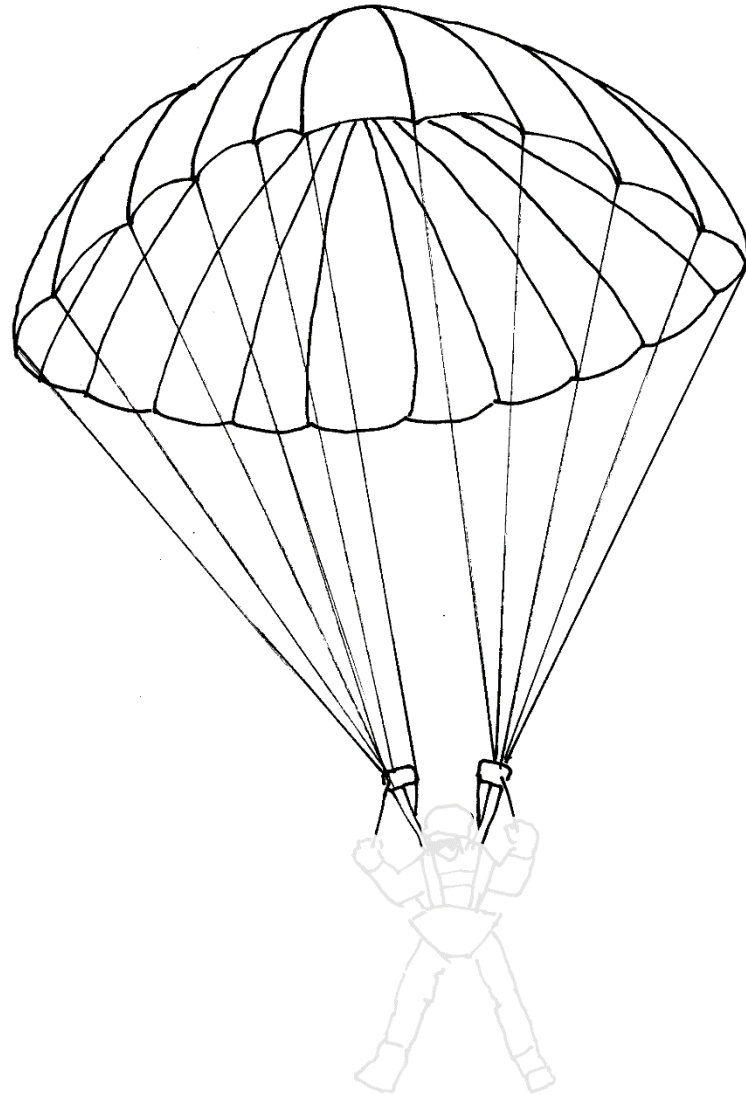


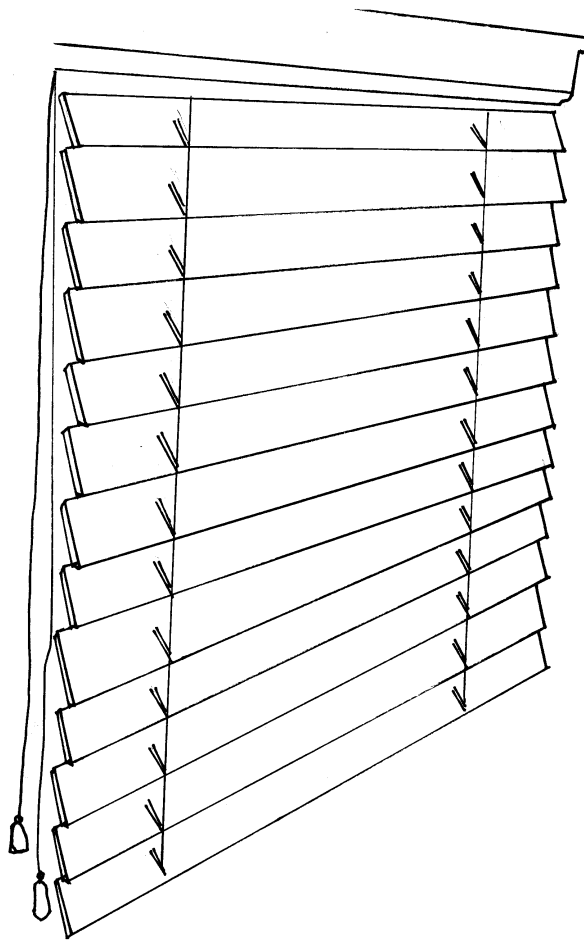


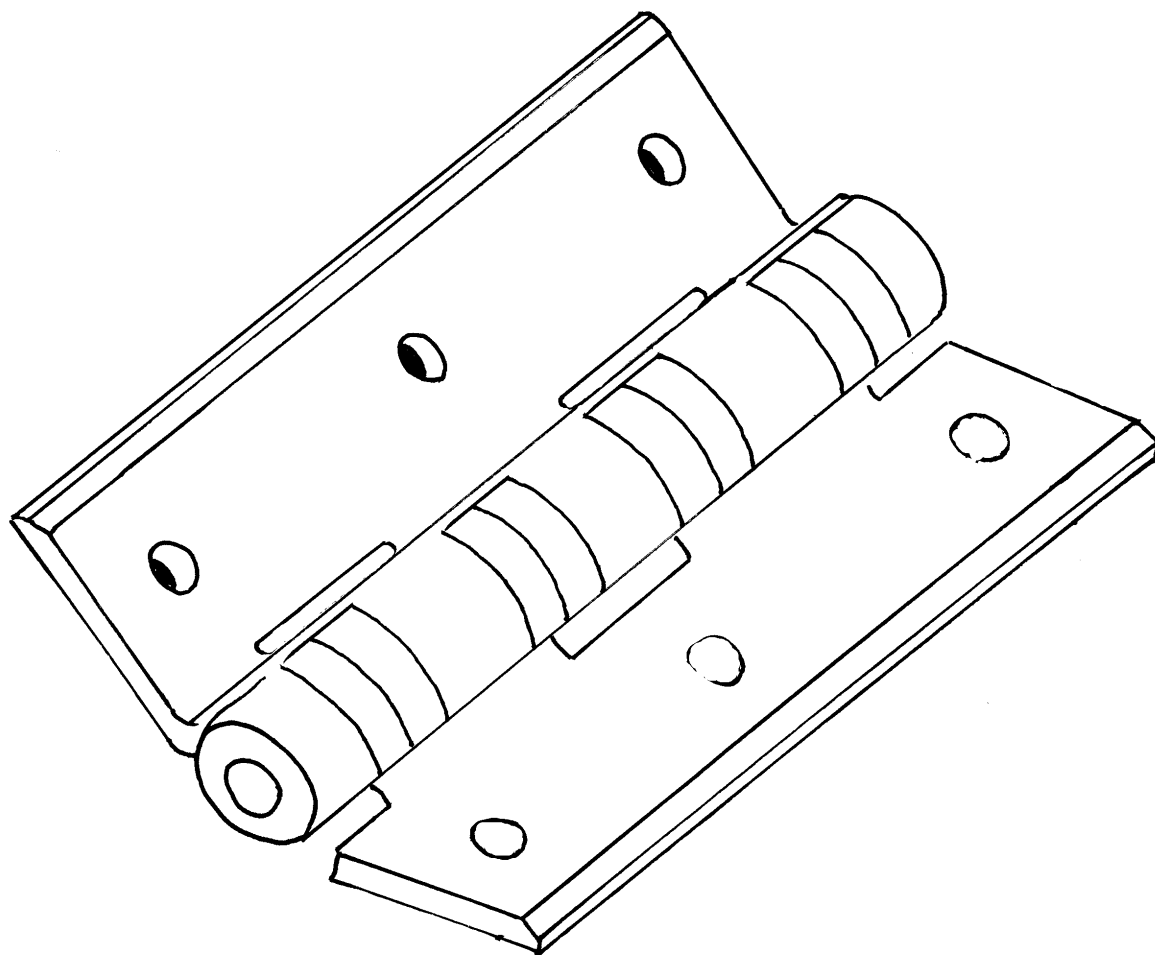


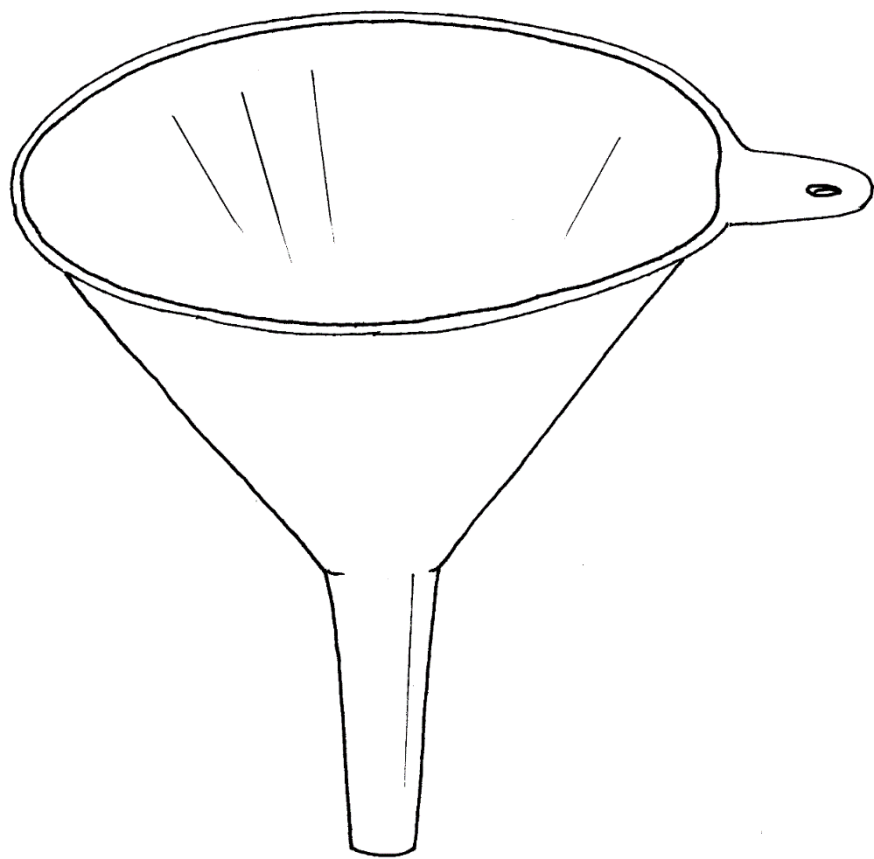


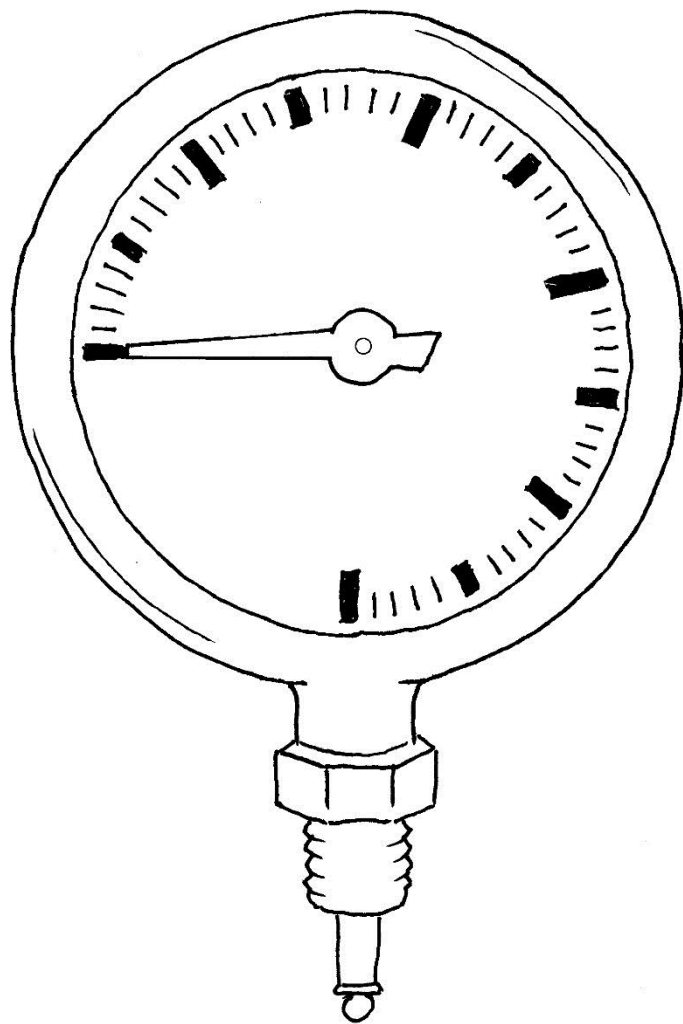


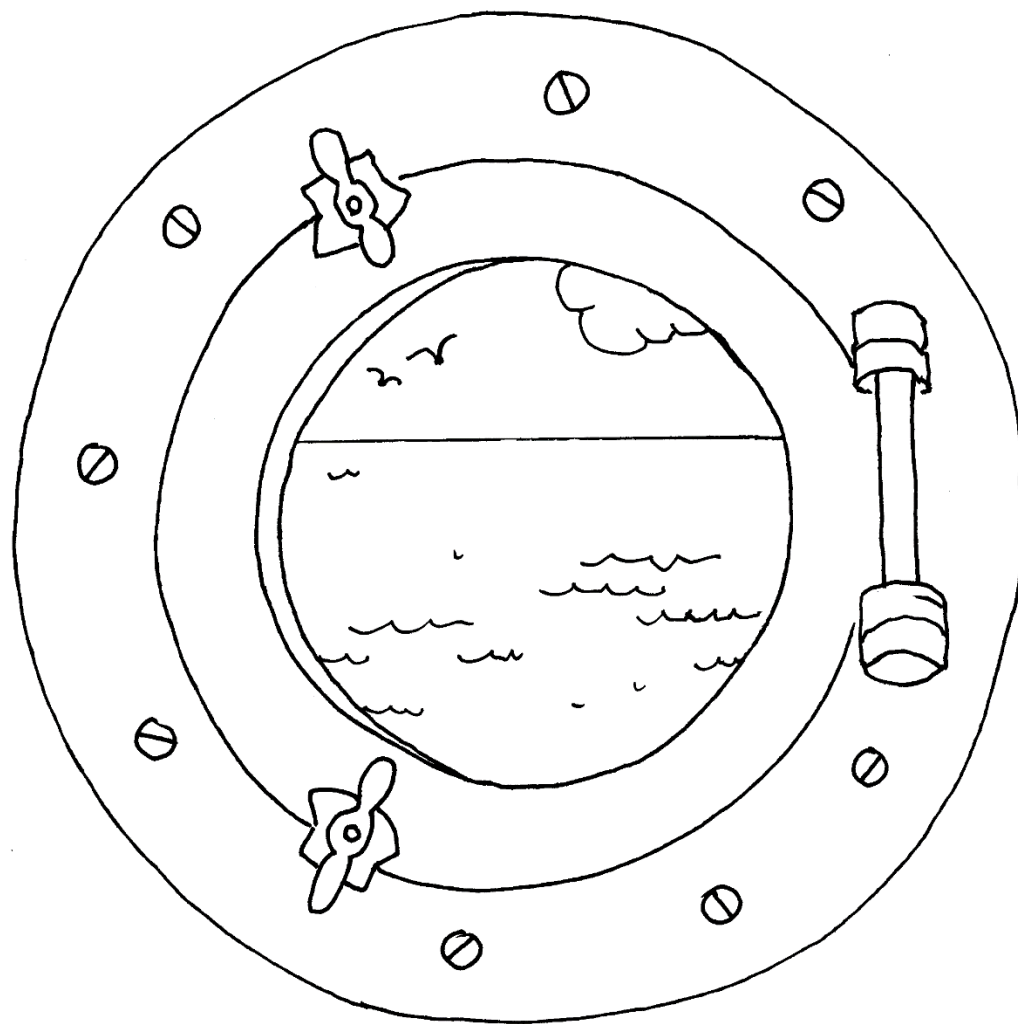


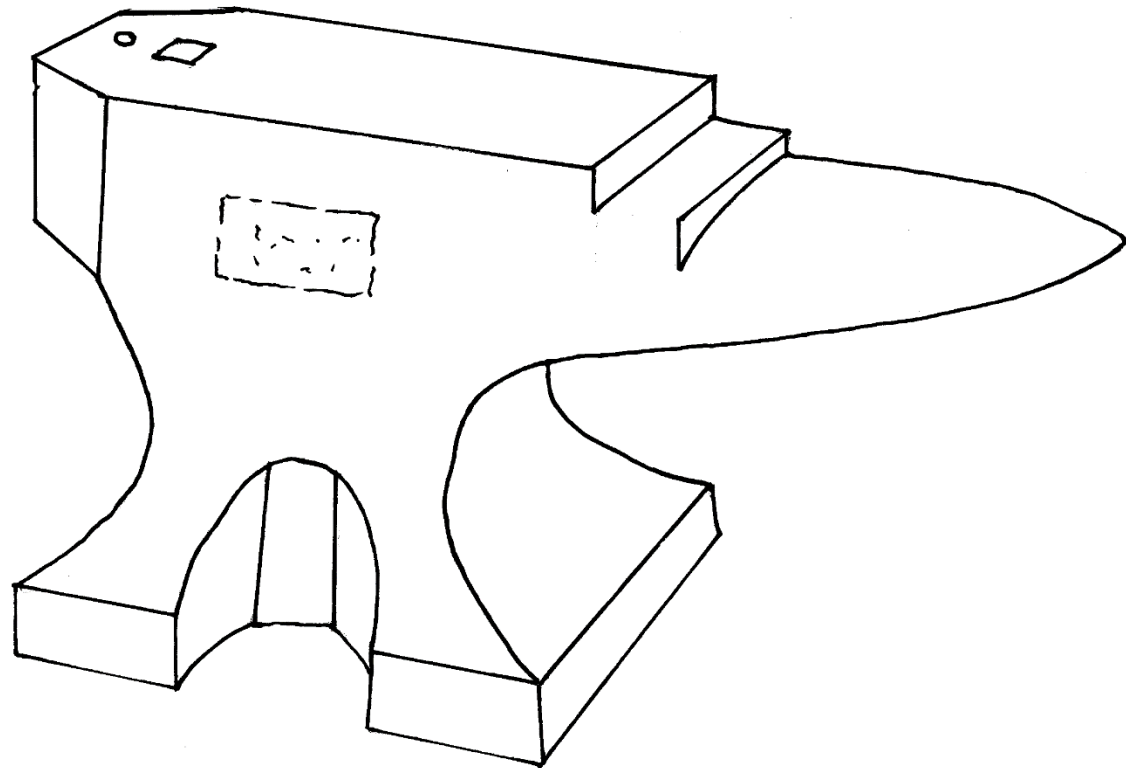


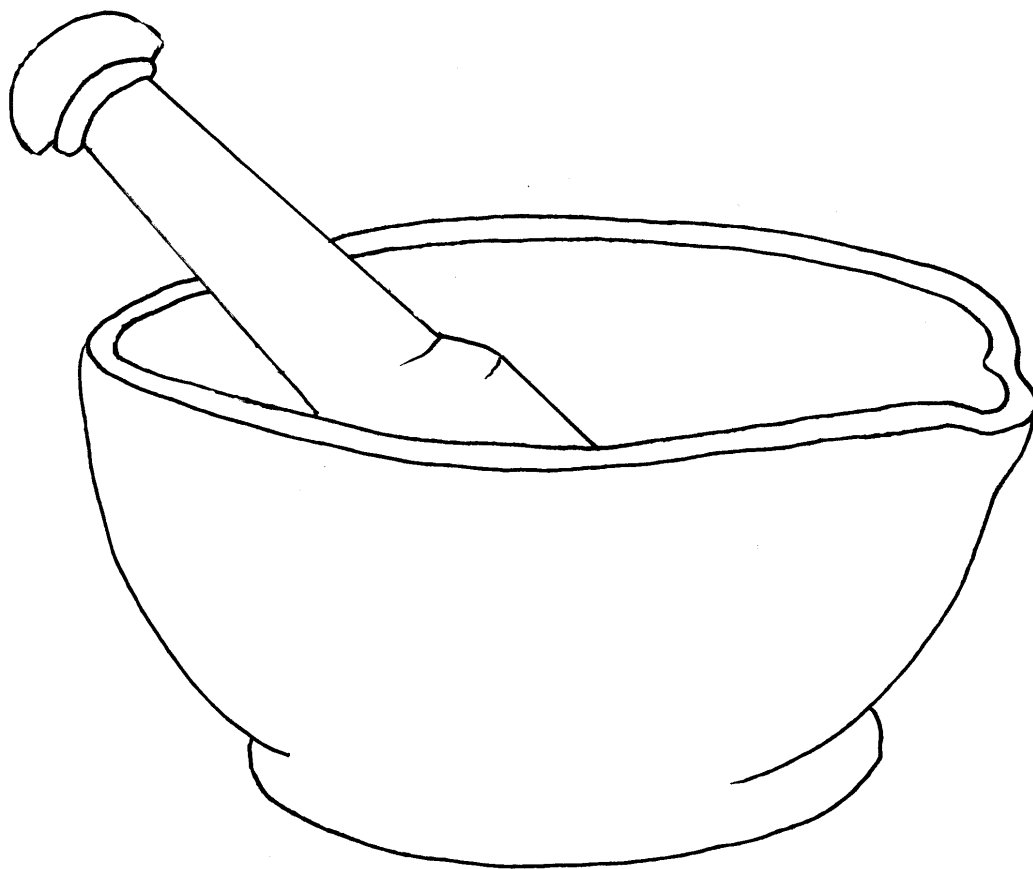


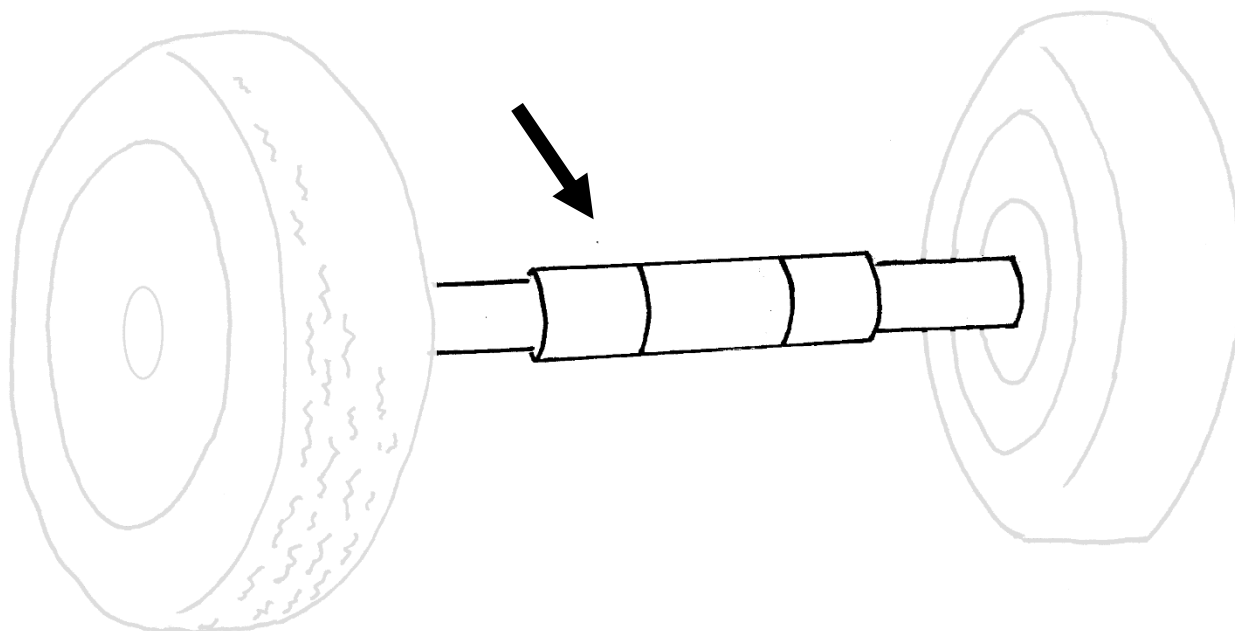












Subject ID \_\_\_\_\_

Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Examiner's initials \_\_\_\_

# Verbal Fluency: Phonemic Test

## Materials

1-minute timer

SAY: "I'm going to say a letter of the alphabet. When I ask you to start, tell me as many words as you can that begin with that letter. You will have 1 minute before I tell you to stop. None of the words can be numbers, or names of people, or places.

"For example, if I gave you the letter B, you could say brown, bottle, or bake, but you wouldn't say Barbara, Boston, or billion. Also, please try not to give me the same word with different endings. So if you said bake, you wouldn't also say baked or bakes. And if you said big, you wouldn't also say bigger and biggest.

"Let's begin. Tell me all the words you can, as quickly as you can, that begin with the letter F. Ready? Begin."

## Administration

Start timer after completing instructions. Write actual responses as legibly as possible. Stop the procedure at 60 seconds.

## Prompts

1. If the participant pauses for 15 seconds:
  - "Keep going."
  - "What other words beginning with F can you think of?"
2. If the participant gives three consecutive words that do not start with the designated letter (provide this prompt only once during this condition):
  - "We are now using the letter F."

Record **F** responses:

1.	11.	21.	31.
2.	12.	22.	32.
3.	13.	23.	33.
4.	14.	24.	34.
5.	15.	25.	35.
6.	16.	26.	36.
7.	17.	27.	37.
8.	18.	28.	38.
9.	19.	29.	39.
10.	20.	30.	40.

**SCORING**      Number of correct **F-words** generated in 1 minute (0–40)      \_\_\_\_ \_\_\_\_

Number of **F-words** repeated in 1 minute (0–15)      \_\_\_\_ \_\_\_\_

Number of **non-F-words** and rule violation errors in 1 minute (0–15)      \_\_\_\_ \_\_\_\_

SAY: “Now I want you to do the same for another letter. The next letter is L. Ready? Begin.”

Start timer after completing instructions. Write actual responses as legibly as possible. Stop the procedure at 60 seconds.

### Prompts

1. If the participant pauses for 15 seconds:
  - “Keep going.”
  - “What other words beginning with L can you think of?”
2. If the participant gives three consecutive words that do not start with the designated letter (provide this prompt only once during this condition):
  - “We are now using the letter L.”

Record **L** responses:

1.	11.	21.	31.
2.	12.	22.	32.
3.	13.	23.	33.
4.	14.	24.	34.
5.	15.	25.	35.
6.	16.	26.	36.
7.	17.	27.	37.
8.	18.	28.	38.
9.	19.	29.	39.
10.	20.	30.	40.

**SCORING**

Number of correct **L-words** generated in 1 minute (0–40) \_\_\_\_\_

Number of **L-words** repeated in 1 minute (0–15) \_\_\_\_\_

Number of **non-L-words** and rule violation errors in 1 minute (0–15) \_\_\_\_\_

TOTAL number of correct **F-words and L-words** (0–80) \_\_\_\_\_

TOTAL number of **F-word and L-word** repetition errors (0–30) \_\_\_\_\_

TOTAL number of **non-F/L words** and rule violation errors (0–30) \_\_\_\_\_