Welcome! In this spreadsheet, you'll be able to explore the results of the picture recall task and look for interesting findings. Below, we've explained how the spreadsheet is laid out.	
Each tab at the bottom has different information. Right now, you're in the "**Welcome"** tab. Here you can find information about the layout of the sheet, the meaning of columns on different sheets, and the structure of the experiment itself as a reference.	
The second tab is the "**Descriptive Statistics and Group Data"** tab. Here you can find data about the groups and averages across different groups. This information is useful for evaluating the impact of group factors such as the task condition, the content of the set, or their gender. This tab does not display any of the individual results, but allows for comparisons using all subjects.	
The third tab is the "**In Your Head Condition"** tab, containing the actual results from 20 participants who completed the task while repeating the words in their head. Check at the bottom of this page for a quick refresher on how the experiment worked and what the two conditions were. Definitions for the meaning of each column can be found on this page.	
The final tab is the "**Out Loud Condition"** tab, containing the actual results from 20 participants who completed the task while repeating the words out loud. This tab shares column headers with the 'In Your Head Condition' tab, so the definitions found below apply to this tab as well.	
Important Information about the layout of this sheet!	
On the two condition tabs, you will see some participant responses are highlighted yellow or red. This indicates these responses were not included in the analyses because a problem with their response was identified while initially reviewing the data. This is an important process that ensures the quality of the data and is aimed at ensuring participants properly folllowed instructions. There were two criteria that could warrant a participant response be removed, represented by the color used to highlight the cells. These criteria are listed below.	
In the closing interview, the participant responsed that they did not repeat the words following their conidition's instructions. The participant responded "No" in Column O (as in open, not the number zero)	
The participant did not respond when asked	
Definition of Column Headers for the "In Your Head Condition" and "Out Loud Condition" tabs	
Definition	**Column Header**
Participant age was calculated based on their provided birthdate and the date of testing. Months and days were not included as decimals.	Age (years)
Participant's preferred gender.	Gender
Participant's stated race and/or ethnicity. Participants could choose multiple options.	Race/Ethnicity
Participants were required to be english speakers in order to take part in the study to avoid language as a factor, but it is still important to gather information about their language background. All participants responded that english was their native language.	Is English your native language?
If participants are multilingual, that could potentially play a factor in their results. This questions provides additional information on their language use.	What language(s) are regularly spoken in your home?
Participants saw the set of animals, objects, or fruits and vegetables in different orders. This number specifies the order in which they saw the sets. The corresponding order is listed below:	Presentation Order
1-Animals, Objects, Fruits/Veggies 2- Animals, Fruits/Veggies, Objects 3- Fruits/Veggies, Animals, Objects 4-Fruits/Veggies, Objects, Animals 5- Objects, Fruits/Veggies, Animals 6- Objects, Animals, Fruits/Veggies	
The number of animals that the participant listed that were actually shown.	Number of correct animals remembered
The number of animals that the participant listed that weren't actually shown. Errors are shown in parenthesis and highlighted in red in their response.	Incorrect responses
The actual participant response. Participants had as long as they needed to list the animals they remembered and were told to separate each animal with a comma.	List of remembered animals
The number of objects that the participant listed that were actually shown.	Number of correct objects remembered
The number of objectsthat the participant listed that weren't actually shown. Errors are shown in parenthesis and highlighted in red in their response.	Incorrect responses
The actual participant response. Participants had as long as they needed to list the object they remembered and were told to separate each object with a comma.	List of remembered objects
The number of fruits/veggies that the participant listed that were actually shown.	Number of correct fruits/veggies remembered
The number of fruits/veggies that the participant listed that weren't actually shown. Errors are shown in parenthesis and highlighted in red in their response.	Incorrect responses
The actual participant response. Participants had as long as they needed to list the fruits/veggies they remembered and were told to separate each fruits/veggies with a comma.	List of remembered fruits/veggies
Once participants had completed the entire study, they asked whether they had actually repeated the words out loud or in their head. The question changed based on condition, so participants who had been told to repeat the words out loud were asked in they had repeated them out loud and likewise for participants in the in your head condition.	Did you actually repeat the words in your head/out loud?
After asking in they had followed instructions, partcipants were also asked in they had used any strategies to help them. This question was a simple yes or no.	Did you use any strategies to help you remember?
If participants responded yes to the previous question, they were asked to write down what strategies they had used to help them remember.	If yes, what strategies?
Summary of Experiment	
After reviewing the consent form, participants completed a short demographics survey asking their age, gender, and race/ethnicity.	
Once they had completed this survey, they were given instructions to watch a list of pictures and repeat the name of each picture either out loud or in their head. In they were told to repeat the word out loud, they were told to say it as if they were answering a question of what it was. If they were told to repeat the word in their head, they were told to repeat it as if they were making a list in their head without speaking or moving their lips.	
Once participants had finished reading the instructions, they began their first set of pictures. There were three sets, with the pictures of animals, household objects, or fruits and vegetables. Participants saw 30 pictures presented for 1 second each that all came from the same set. Once each picture had been shown, participants were told to report as many animals, objects, or fruits and vegetables as they could remember. When they were done writing down everything they remembered, they started the next set.	
After participants had completed all three sets, they were asked if they had followed instructions and whether they had used any strategies to help them remember. After answering those questions, they were done!	

Descriptive Statistics			
Participant Information*			
*Contains participants excluded from analyese for not following instructions	**In Your Head**	**Out Loud**	
Number of Participants	20	20	
Gender Breakdown	11 male, 7 female, 1 other, 1 prefer not to answer	13 male, 6 female, 1 prefer not to answer	
Race/Ethnicity Breakdown			
White	15	16	
Black or African American	2	3	
Hispanic/Latino	3	3	
Asian	2	0	
Other	0	1	
Age (in years)			
Average	31.85	27.6	
Oldest	60	47	
Youngest	18	18	
Range*	42	29	
*Difference between oldest and youngest			
Group Data			
Group Averages			
	Overall	**In Your Head**	**Out Loud**
Average number of remembered animals, fruits/veggies, or objects.	13.66	14.12	13.20
Average number of remembered animals	14.64	15.67	13.61
Average number of remembered objects	11.72	11.39	12.06
Average number of remembered fruits/veggies	14.62	15.29	13.94
*Overall averages are reported based on condition averages, not by averaging all subjects.			
Highest and Lowest Number Remembered			
	Overall	**In Your Head**	**Out Loud**
Highest number of animals remembered	30	29	30
Highest number of objects remembered	23	17	23
Highest number of fruits/veggies remembered	23	23	22
Lowest number of animals remembered	7	9	7
Lowest number of objects remembered	5	7	5
Lowest number of fruits/veggies remembered	4	4	5

Age (years)	Gender	Ethnicity	Is English your native language?	What language(s) are regularly spoken in your home?	Presentation Order	Number of correct animals remembered	Incorrect responses	List of remembered animals	Number of correct objects remembered	Incorrect responses	List of remembered objects	Number of correct fruits/veggies remembered	Incorrect responses	List of remembered fruits/veggies	Did you verbally repeat the words in your head?	Did you use any strategies to help you remember?	If yes, what strategies?
47	Male	White	Yes	English	4	20		cow, elephant, giraffe, alligator, parrot, dragon, Shark, Flamingo, Rhino, Cat, Bear, Rooster, Snake, Dog, Lion, Monkey, Tiger, Horse, Deer, Mouse, Rabbit	10		Lightbulb, Sketchbook, Bed, Mouse, Microwave, Paperclip, Pen, Desk, Lamp, Mouse Pad	20		Pumpkin, Grapes, Bear, Watermelon, Banana, Blueberry, Strawberry, Raspberry, Cherry, Broccoli, Onion, Potato, Peas, Avocado, Melon, Orange, Lettuce, Corn, Tomato, Cucumber, Carrot, Pineapple	Yes	Yes	I tried to pair objects with the first letter together after the first time Banana ate the ice cream during Sweet Dreams it made me think Banana
47	Male	White, Hispanic/Latino	Yes	Portuguese	4	40 + (we lost)		Bear, Dragon, Lion, Eagle, Dolphin, Alligator, Elephant, Giraffe, Monkey, Horse, Cow,	10		Lightbulb, Sketchbook, Bed, Mouse, Microwave, Paperclip, Pen, Desk, Lamp, Mouse Pad	20		Pumpkin, Grapes, Bear, Watermelon, Banana, Blueberry, Strawberry, Raspberry, Cherry, Broccoli, Onion, Potato, Peas, Avocado, Melon, Orange, Lettuce, Corn, Tomato, Cucumber, Carrot, Pineapple	Yes	Yes	I tried to pair objects with the first letter together after the first time Banana ate the ice cream during Sweet Dreams it made me think Banana
20	Female	White	Yes	English	4	14		dragon, frog, cat, dog, cow, unicorn, sheep, dolphin, crab, giraffe, bear, elephant, rhinoceros, flamingo	7		A. Nintendo Switch, Pen, coffee, chapter, refrigerator, phone	9		lettuce, apple, blueberry, grapes, cucumber, carbohydrate, lime, lemon, carrot	Yes	Yes	I tried to remember them in order so like an A was a watermelon the beginning and then just started typing from a picture of all the other ones in my head or they appeared
20	Female	White	Yes	English	4	14		B. dragon, frog, cat, dog, cow, unicorn, sheep, dolphin, crab, giraffe, bear, elephant, rhinoceros, flamingo	10		A. Nintendo Switch, Pen, coffee, chapter, refrigerator, phone, lamp, Mouse Pad, Desk, pencil	11		A. lettuce, apple, blueberry, grapes, cucumber, carbohydrate, lime, lemon, carrot, tomato	Yes	No	
49	Female	White	Yes	English	4	14		B. cow, pig, flamingo, parrot	10		B. crayon, scissors, eyeglasses, tissue, pencil, blanket, phone, lanyard	11+		B. avocado, carrot, bell pepper, potato, taco, pear	Yes	No	
49	Female	White, Hispanic/Latino	Yes		4	14		B. monkey, chipmunk, snake, cow, shark, zebra, tiger, crocodile, eagle, seal, flamingo, pig, moose, giraffe,	10		A. Nintendo Switch, Pen, coffee, chapter, refrigerator, phone, lamp, Mouse Pad, Desk, pencil	11+		B. cucumber, scallion, cauliflower, grape, watermelon, strawberry, avocado, carrot, lemon, kiwi	Yes	Yes	Read & looped the words in my head more than once in quick succession.
54	Male	White	Yes	English	4	40		eagle, lion, tiger, bear, moose, rhinoceros, hippopotamus, giraffe, zebra, horse, cow, chipmunk,	10		hard drive, glasses, scrolls, hanger, scissors, pillow, business	10		B. cantaloupe, garlic, cherries, tomato, watermelon, orange, lemon, lime, cucumber,	Yes	Yes	Seeing all of the image and trying to remember it.
21	Male	White	Yes	English	4	14		B. kangaroo, panda, koi, dolphin	10		B. flashlight, syringe	10		B. eggplant, beetroot, avocado, onion, mushroom, tofu or scrollbags, carrot	Yes	Yes	
21	Male	White	Yes	English	4	14 + (dodge)		pig, cow, alligator, giraffe, raccoon, monkey, moose, shark, owl, horse, hippopotamus, chipmunk, tiger, cat, sheep, leopard, mouse, eagle, dolphin, dragon	10		paperclip, hoop, ball, milk, bowl, stormtrooper, stapler, candle, pc,	20		lettuce, apple, blueberry, avocado, cherry, eggplant, apple, orange, kiwi, lemon,	Yes	Yes	for the last set, I tried to repeat letters of fruits/items as much and as often as possible while it scrolled by. The first time I simply tried to memorize them as they passed by.
42	Male	Asian	Yes		4	14		pig, lion, sheep, eagle, owl, hippo, giraffe, kangaroo, raccoon, scorpion, cow, deer, shark, dolphin, zebra	10	+ (pen)	fridge, pc, fork, knife, sponge, desk, fan light, flashlight, hose, transformer, keyboard, headphone, crayon	11+		banana, watermelon, pineapple, cucumber, corn, grape, strawberry, cherry, orange, pomegran, tomatoe, tomato, mushroom, cabbage, eggplant	Yes	No	
19	Male	White	Yes	English	4	9		B. moose, lion, flamingo, giraffe, shark, tiger, eagle, penguin, panda	9		B. sponge, hose, lamp, candle, popcorn, stapler	11+		B. banana, apple, pineapple, strawberry, cucumber, pear, corn, pea, broccoli, eggplant	Yes	Yes	
40	Other	White	Yes	English	4	17 + (newt/gecko)		bear, cat, dog, tiger, giraffe, rhino, lion, cow, cat, raccoon, chipmunk,	10		B. transformed into the moose, Pillow, Microphone, Lamp, bottle	11+		B. Peanut, avocado, watermelon, strawberry, apple, pineapple, lime, cabbage,	Yes	Yes	I tried to remember them in order of the animals and then I remembered the moose. I'd need to remember it goes on to remember it goes on to remember it goes on

Age (years)	Gender	Race/Ethnicity	Is English your native language?	What language(s) are regularly spoken in your home?	Presentation Order	Number of correct animals remembered	Incorrect responses	List of remembered animals	Number of correct objects remembered	Incorrect responses	List of remembered objects	Number of correct fruits/veggies remembered	Incorrect responses	List of remembered fruits/veggies	Did you actually repeat the words in your head?	Did you use any strategies to help you remember?	If yes, what strategies?
18	Male	White, Hispanic/Latino	Yes	portuguese	5	3	0	hippo, eagle, kangaroo, all dat good stuff	0	0		1	0	orange, cool stuff	No	No	
20	Female	Black or African American	Yes	English, patios	4	11	0	horse, alligator, hippopotamus, giraffe, owl, lion, bear, flamingo, penguin, shark, dolphin	9	0	lamp, knife, fork, hammer, glasses, fridge, lamp, bed, sponge,	14	0	onion, corn, grape, avocado, pear, carrot, garlic, onion, bell pepper, watermelon, banana, cantaloupe, eggplant, potato	Yes	No	
47	Male	White	Yes	English	5	7	0	giraffe, owl, zebra, kangaroo, lion, eagle, alligator	9	0	stapler, pillow, pencil, microwave, pillow, bed, scissors, lightbulb, lawnmower	8	0	mushroom, raspberry, cantaloupe, onion, corn, potato, strawberry, cucumber	Yes	No	
20	Female	White	Yes	English	3	16	1 (mouse)	Sheep, bear, raccoon, cow, moose, dolphin, cat, chicken, mouse, giraffe, camel, panda, eagle, hippopotamus, rhinoceros, grizzly bear, shark.	20	0	Mower, lamp, hose, refrigerator, toaster, microwave, blender, knife, ax, scissors, key, bowl, bed, pillow, pencil, stapler, paperclip, sponge, lamp, lightbulb.	17	0	Potato, garlic, cherries, cantaloupe, grapes, cucumber, onion, tomato, peas, eggplant, banana, strawberry, apple, orange, cabbage, carrot, pepper.	Yes	Yes	I created groups of things in my mind to associate some items with others, such as: scissors, axes, and knives all have blades.
34	Male	White	Yes	english	4	30	0	camel, cow, crocodile, elephant, rooster, chipmunk, raccoon, skunk, owl, eagle, lion, tiger, bear, moose, zebra, horse, elephant, rhinoceros, hippopotamus, giraffe, kangaroo, penguin, shark, dolphin, panda, crab, cat, gorilla, pig, sheep	22	0	lawn mower, knife, scissors, candle, button, hammer, ax, phone, blender, microwave, pencil, hanger, flashlight, key, bowl, sponge, teapot, paper clip, stapler, bed, pillow, refrigerator	17	0	onion, banana, blueberry, strawberry, cherries, corn, pineapple, apple, avocado, lettuce or cabbage, mango, cantaloupe, mushroom, garlic, carrot, cucumber, eggplant	Yes	Yes	looking at and trying to remember the images
20	Male	White	Yes	English	2	10	0	elephant, flamingo, rhino, cat, pig. alligator, shark. girraffe, owl, monkey	9	0	key, refrigerator, lightbulb, bed, pillow, blender, knife, ax, door	13	0	carrot, avocado, pumpkin, cucumber, squash, broccoli, strawberry, blueberry, raspberry, apple, orange, grape, coconut	Yes	Yes	try to group them in my head so the groups are easier to remember
24	Male	Hispanic/Latino	Yes	English	2	12	0	Squirrel, dolphin, cat, hippo, shark, bear, zebra, tiger, lion, giraffe, penguin, kangaroo	14	0	Lamp, scissors, button, paper clip, light bulb, microwave, bowl, tea pot, bed, coat hanger, knife, axe, hammer, sponge	14	0	Apple, grapes, pear, cherries, watermelon, tomato, bell pepper, cantelope, zucchini, raspberry, cucumber, potato, corn, carrot	Yes	No	N/A
29	Male	White	Yes	English	1	12	0	crab, elephant, camel, rooster, panda, crocodile, cat, dolphin, horse, zebra, flamingo, skunk	11	0	telephone, bed, pillow, blender, camera, fork, glasses, button, lawnmower, hammer, hose	8	0	orange, coconut, banana, blueberries, grapes, lemon, apple, potato,	Yes	No	Well I tried repeating multiple times but the images kept coming and coming so I found it hopeless haha. POSSIBLY if I knew how many images I would have to try to remember it would be different.
18	Male	White	Yes		2	7	1 (cheetah)	eagle, hippo, elephant, rhino, lion, giraffe, owl, cheetah	5	0	knife, fork, toothbrush, sponge, glasses	6	0	carrot, orange, strawberry, raspberry, blueberry, pear	Yes	No	
46	Male	White	Yes	English	6	20	0	lion,tiger,panda,bear,horse,penguin,giraffe,elephant,alligator,hippo,rhino,bald eagle,chipmunk, kangaroo,cat,pig,cow,raccoon,flamingo,camel	18	0	hammer,lamp,pillow,flashlight,lightbulb,axe,lawnmower,button,key,knife,glasses, toaster,bed,refrigerator,microwave,bowl,kettle,hose	23	1 (musk melon)	broccoli, grapes, cucumber, tomato, potato, onion, garlic, corn, muskmelon, red pepper, pineapple, apple, watermelon, lemon, orange, lime, mushroom, carrot, pumpkin, cherries, blueberry, eggplant ,avocado, head lettuce	Yes	Yes	If I remembered one object, I tried to think of a similar object (i.e. orange, lemon, and lime are citris, cow and pig are farm animals, etc.).
44	Male	White	Yes	English	3	17	0	elephant, zebra, lion, tiger, raccoon, cat, crab, shark, rhino, hippo, giraffe, kangaroo, crocodile, grizzly bear, panda bear, penguin, horse,	13	0	hose, bed, paperclip, stapler, scissors, telephone, ax, hammer, button, glasses, hose, lightbulb, glass bowl,	20	0	apple, banana, strawberry, cherry, pineapple, lime, orage, cantaloupe, pear, avacado, potato, head of lettuce, brocoli, onion, garlic, carrot, corn, cucumber, raspberry, blueberry,	Yes	Yes	i tried to alphabetize them and then i tried to group them
23	Prefer not to answer	Other	Yes	English	5	10	0	lion, camel, chipmunk, raccoon, panda, elephant, owl, cat, flamingo, hippo,	7	0	Toothbrush, refrigerator, toaster, teapot, hose, fork, hanger,	11	0	apple, pear, watermelon, eggplant, raspberry, onion, potato, broccoli, lime, lemon, garlic	No	Yes	Try to think of a room with as many of the things in it
34	Female	White	Yes	english	6	19	0	gorilla, brown bear, penguin, owl, flamingo, zebra, hippopotamus, horse, rhinoceros, panda bear, crocodile, cat, raccoon, chipmunk, lion, tiger, giraffe, shark, crab.	13	0	sponge, bowl, paper clip, toaster, fridge, hose, toothbrush, key, pillow, bed, stapler, blender, light bulb.	15	0	potato, corn, watermelon, blueberry, raspberry, grape, cherry, coconut, lettuce, avocado, cucumber, banana, lime, orange, eggplant.	Yes	No	
25	Female	White	Yes		6	10	0	tiger, raccoon, rooster, shark, eagle, hippo, horse, panda, cow, pig	10	0	hammer, paperclip, toaster, blender, microwave, pencil, bowl, phone, hanger, bed	11	0	blueberry, lemon, tomato, avocado, watermelon, lime, lemon, cantaloupe, strawberry, raspberry, carrot	Yes	No	
34	Male	Black or African American	Yes	English	3	12	0	chicken skunk elephant bear flamingo crab lion tiger penguin eagle cow hippo	9	0	lamp, light bulb, pencil, stapler, sponge, knife, fridge, pillow, bed,	18	0	Lemon, lime, orange, cantaloupe, cabbage, eggplant, raspberry, corn, red pepper, apple, potato, pumpkin, avocado, broccoli, grapefruit, strawberry, garlic, onion,	Yes	Yes	group them into similar categories
19	Male	White	Yes	English	6	8	0	penguin, zebra, lion, tiger, hippo, cat, bald eagle, elephant,	11	1 (pot)	lamp, couch, bed, pillow, bowl, microwave, vase, blender, pot, kettle, knife, paperclip,	5	0	carrot, banana, grapes, onion, pear,	Yes	Yes	Repeating them multiple times
19	Female	White, Black or African American	Yes	English	1	17	0	Moose, Giraffe, Tiger, Elephant, Penguin, Kangaroo, Shark, Eagle, Owl, Dolphin, Ape, Lion, Rooster, crocodile, chipmunk, Raccoon, hippo,	17	0	Bowl, Hanger, Stapler, Paperclip, hammer, blender, refrigerator, camera, lightbulb, lamp, fork, knife, toaster, pillow, bed, flashlight, sponge	23	0	Carrot, Mushroom, Cucumber, Grapes, Potato, bell pepper, garlic, orange, cantaloupe, lime, lemon, strawberry, blueberry, raspberry, lettuce, avocado, onion, watermelon, mushroom, broccoli, pea pods, tomato, cherries,	Yes	Yes	For the last set I tried to at least count how many items there were on my fingers so it caused me to think a little harder about what I just saw
30	Male	White	Yes	English	3	16	0	Hippo, dolphin, shark, kangaroo, bear, alligator, monkey, flamingo, eagle, chipmunk, racoon, skunk, giraffe, rhino, elephant, tiger, lion	9	0	axe, button, hose, microwave, toaster, hammer, pencil, lighbulb, candle,	15	0	Pepper, lemon, eggplant, onion, banana, strawberry, apple, pear, coconut, avacodo, corn, pumpkin, grape, blueberry, raspberry	Yes	No	
24	Female	White	Yes	english	4	11	1 (ostrich)	lion, tiger, penguin, cat, camel, ostrich, panda, bear, zebra, pig, shark, horse	10	0	light bulb, fridge, lamp, cushion, telephone, key, pencil, scissors, microwave, camera	11	0	apple, pineapple, onion, banana, strawberry, cabbage, blackberry, avocado, eggplant, melon, tomato.	Yes	Yes	repeat the words in order to memorize them
24	Male	White, Hispanic/Latino	Yes	englis, spanish	4	10	0	squirrel, giraffe, elephant, hippo, moose, zebra, skunk, camel, rhino, rooster	8	0	bed, lamp, scissors, stapler, paperclip, axe, bowl, phone	13	1 (plum)	strawberry, banana, cucumber, pineapple, apple, lime, plum, pear, corn, raspberry, blueberry, orange, pepper, broccoli	Yes	No	
					Order Values	**Average number of animals remembered:**			**Average number of objects remembered:**			**Average number of fruits/veggies remembered:**					
					1-Animals, Objects, Fruits/Veggies 2- Animals, Fruits/Veggies, Objects 3- Fruits/Veggies, Animals, Objects 4-Fruits/Veggies, Objects, Animals 5- Objects, Fruits/Veggies, Animals 6- Objects, Animals, Fruits/Veggies	13.61			12.06			13.94					