Psychology Summer Task 2019

At Teignmouth Community School we study the Edexcel specification. This pack will help you gain an understanding of just some of the different areas of Psychology you will be studying. The tasks are split into three levels – mild, medium and spicy. It would be good practice to attempt **all** tasks – do not be afraid if you find it hard. As a minimum mild criteria must be completed, you should complete the medium criteria and it would be good practice to attempt the spicy.

Task 1: Social Psychology

Mild

1) Research and produce a fact sheet on one key study - Milgram's (1963) Obedience to Authority

Medium

2) Explain how research such as Milgram might explain historical atrocities such as the Nazi persecution of the Jews

Task 2: Cognitive Psychology – Memory

Mini Experiment:

In this experiment you can test as many or as little people as you like. As the experimenter you should read out one line at a time of the triangle of numbers below to your participant. When you have finished reading out the line, your participant should recite back to you as many of the numbers they can remember. Record how many numbers they recall correctly on each line.

6
27 35
10 28 22
38 46 10 11
52 8 19 81 17
55 38 29 13 8 71
75 17 20 61 82 5 12
61 38 17 40 49 84 57 8
71 22 31 89 47 5 1 16 94
18 95 48 30 89 67 18 11 15 17
76 83 40 28 25 12 15 53 95 49 20
16 9 11 17 49 50 28 69 24 53 78 10
77 53 49 76 19 94 87 64 23 19 15 51 2
78 56 34 19 27 20 80 42 38 64 29 10 79 31

Now think about and explain:

1) What was the maximum amount of numbers your participants call recall from any line? (If you used more than one participant, take the average).
2) What do your results suggest about memory?

Now research and answer the following…

Mild

1) What is memory? Does it have different types? If so, explain them…
2) What is the capacity and duration of the average memory in humans?

Medium

3) What did George Miller do in 1956? What did he discover about memory? How does this link to the results from your experiment above?

Task 3: Is Psychology a Science?

This question is raised throughout your course. Most people assume Psychology is an easy or 'soft' subject which cannot possibly be a science. But is it?

It is your job to come to a conclusion as to whether or not Psychology IS a hard science.

Research arguments for and against Psychology as a Science and produce a debate on this.

Consider:

- The Subject Content
- Research Methods Used

Mild

Create a table to present evidence for Psychology as a Science and evidence against Psychology as a Science

Medium

Include the following terms in your table: reductionism, falsification, hypothesis testing, cause and effect,

Task 4: Approaches in Psychology

Mild

Research the four main approaches in Psychology you will study and explain the key terms, assumptions and psychologists which fit into each one

- Social
- Cognitive
- Biological
- Learning

Task 5: Research Methods - Spicy

This is based on the data you collected in class during your taster session and you will be required to use these numbers to fill in the tables below and make your calculations. If you were absent, please see the end of this booklet for data to use.

Mann Whitney

Mann Whitney is a statistical test used when you are researching a difference between conditions and when you have independent groups. The experiment you did in class was looking to see whether the value range had more cookies than a more expensive brand. This means that you are looking for a difference between the products and that they are independent (value or expensive).

The steps below will help you calculate whether or not there is a statistically significant difference between the number of chocolate chips in the value or more expensive range, or whether any difference is due to chance.

$$U_a = n_a n_b + \frac{n_a(n_a+1)}{2} - \sum R_a$$

and

$$U_b = n_a n_b + \frac{n_b(n_b+1)}{2} - \sum R_b$$

R_a = total for Condition 1
R_b = total for Condition 2

N = number in a group
N_a = number in Condition 1
N_b = number in Condition 2

To calculate the Mann-Whitney U you have to rank the scores from smallest to highest.

R= the **sum of ranks** for scores in each condition

Step 1. Enter the data you obtained in class on the number of choc chips per cookie. You should then rank these in order from lowest to highest. If there is more than one cookie with the same number of chocolate chips you need to add together the ranks (not the number of cookies) and then divide by the number of ranks e.g. if there were 3 cookies that would be ranked 7,8,9 you would add 7,8 and 9 to get 24, and then divide by 3 and give each a rank of 8. You then continue the ranks with the next number, in this example 10.

Value cookie	No of choc chips	Rank (for all cookies)	Expensive cookie	No of choc chips	Rank (for all cookies)
1			1		
2			2		
3			3		
4			4		
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		

Step two. Add the ranks for the value cookies. $\sum R_a$ = _____

Step three. Add the ranks for the expensive cookies. $\sum R_b$ = _____

Step four. Multiply N_a by N_b Number of value cookies x number of expensive cookies =

_____

Step five. To calculate U_a

$$U_a = n_a n_b + \frac{n_a(n_a+1)}{2} - \sum R_a$$

Add 1 to the number of value cookies and then times this by the number of value cookies. Divide this number by 2.

Add together this number with the number from step 4.

You then subtract your answer from step 2 from the answer above. This number is then your U_a

Step 6. You now need to calculate U_b

$$U_b = n_a n_b + \frac{n_b(n_b+1)}{2} - \sum R_b$$

Add 1 to the number of expensive cookies and then times this by the number of expensive cookies. Divide this number by 2.

Add together this number with the number from step 4.

You then subtract your answer from step 3 from the answer above. This number is then your U_a

The smaller value of U_a and U_b becomes U. This is called your observed value. You then use a critical value table to see if it is significant. Your U value must be lower than the value in the table to be significant.

If we predict more expensive cookies have more chocolate chips this is a direction hypothesis – also known as one tailed. Psychologists work with the probability level of 0.05 – this means that there is only a 5% likelihood the results are due to chance, and not the variable being studied.

	N_b															
N_a	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
***p* ≤ 0.05 (one-tailed), *p* ≤ 0.10 (two-tailed)**																
5	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
6	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
7	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39
8	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47
9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
10	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62
11	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69
12	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77
13	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84
14	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92
15	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100
16	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107
17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115
18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123
19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130
20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

In our experiment, the observed value for U was _____

N_a is _____ and N_b is _____

The critical value is _____ (this is the value in the table above)

As U was higher/lower it is therefore not significant/significant

Useful sources

Websites:

- http://www.simplypsychology.org
- http://www.psychologywizard.net
- https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/psychology-2015.html

Books:

- Obedience to Authority – Stanley Milgram
- Psychology: The Science of the Mind and Behaviour – Richard Gross
- Edexcel AS/A Level Psychology – Karren Smith
- Edexcel Psychology A Level Year 1- Christine Brain

Mann Whitney Help

Worked Example

Step 1 Rank Data

Participants (Na=6)	Scores for females	Rank (for all participants)	Participants (Nb=7)	Scores for males	Rank (from all participants)
1	123	13	1	95	8
2	89	5	2	78	2
3	140	14	3	102	10
4	97	9	4	79	3
5	110	12	5	84	4
6	150	15	6	93	7
7	104	11	7	62	1
			8	92	6

Step 2

Add ranks for A: $\sum R_a = 79$

Step 3

Add ranks for B: $\sum Rb = 41$

Step 4

Multiply N_a by N_b 7 x 8 = 56

Step 5

Add 1 to N_a multiply the result by N_a	(7 + 1) x 7 = 56
Divide this answer by 2	56/2= 28
Add together with your answer from step 4	56 + 28 = 84
Then subtract your answer from step 2	84 – 79 = 5
This is U_a	U_a = 5

Step 6

Add 1 to N_b multiply the result by N_b	(8 + 1) x 8 = 72
Divide this answer by 2	72/2= 36
Add together with your answer from step 4	56 + 36 = 92
Then subtract your answer from step 3	92 – 41 = 51
This is U_b	U_b = 51

The smaller value of U_a and U_b becomes U. In this case the U value is **5** (U_a=5, U_b= 51)

Task 5: Research Methods

In the event of a student missing the taster session, the values below could be used to conduct the Mann Whitney test

Value Cookie	No of choc chips	Expensive cookie	No of choc chips
1	9	1	12
2	8	2	16
3	12	3	13
4	7	4	17
5	7	5	12
6	11	6	10
7	6	7	11
8	10	8	14
9	6	9	11
10	5	10	15
Mean		Mean	
Median		Median	
Mode		Mode	
Range		Range	