As a general note, be sure to keep a record of any resources that you use or refer to in the creation of your project. You will need to report your sources as part of the project submission.

1. What is our independent variable? What is our dependent variable?
    - Incongruent words are the independent variables
    - Congruent words are the dependent variables

2. What is an appropriate set of hypotheses for this task?
    - Null: $H_{congruent} = H_{incongruent}$
    - Alt: $H_{congruent} < H_{incongruent}$

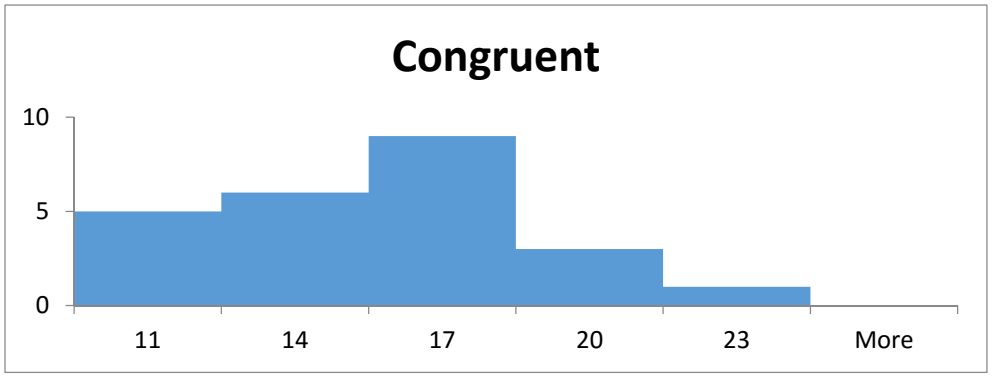
    What kind of statistical test do you expect to perform?
    - Dependent-Samples t Test, 1 tail

    Justify your choices.
    - Dependent test was chosen because the same subject is taking the test twice. 1-tail test was chosen because it is expected that the independent variable (incongruent words) will increase cognitive thought which will then introduce a delayed response.

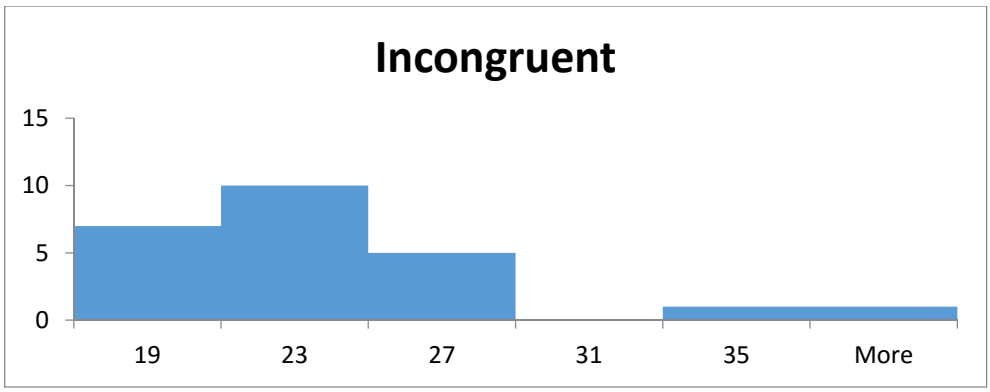
    Record the times that you received on the Stroop task
    - Congruent: 22.549
    - Incongruent: 27.104

3. Report some descriptive statistics regarding this dataset. Include at least one measure of central tendency and at least one measure of variability.
    - $\bar{X}_{diff}$: -7.96
    - SD_{diff}: 4.86

4. Provide one or two visualizations that show the distribution of the sample data. Write one or two sentences noting what you observe about the plot or plots.



    - The Congruent histogram above shows a negative skewed sample.



- The Incongruent histogram above shows a negative skewed sample.

5. Now, perform the statistical test and report your results. What is your confidence level and your critical statistic value?

	Diff
Mean	-7.96
Standard Error	0.99
Median	-7.67
Mode	#N/A
Standard Deviation	4.86
Sample Variance	23.67
Kurtosis	1.71
Skewness	-1.07
Range	19.97
Minimum	-21.92
Maximum	-1.95
Sum	-191.16
Count	24.00
Confidence Level (95.0%)	2.05

- CI (95%) = (-7.96-2.05), (-7.96+2.05) = -10.01, -5.91

Do you reject the null hypothesis or fail to reject it?

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	14.05	22.02
Variance	12.67	23.01
Observations	24.00	24.00
Pooled Variance	17.84	
Hypothesized Mean Difference	0.00	
df	46.00	
t Stat	-6.53	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.68	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.01	

- Excel data analysis toolpak provided a different value for T_{STAT} than the manual calculation (-6.53 vs -8.03). Not sure why they are different, but since both are in the critical region, null hypotheses gets rejected.

Come to a conclusion in terms of the experiment task. Did the results match up with your expectations?

- Since I expected a slower response time because of the stroop effect, the results matched my expectations.

6. Optional: What do you think is responsible for the effects observed?
   - Delayed cognitive response due to the Stroop effect.

   Can you think of an alternative or similar task that would result in a similar effect?
   - Spatial stroop effect demonstrated by the relation of a pointed arrow.