

Psychology 11: SENSATION Psychology Experiment Name(s)\_\_\_\_\_

Your experiment must be centered/ focused on attempting to answer a question that is related to a psychology related issue/topic. You may work solo or in a group of two.

**\*Presentation must contain a video of your actual experiment or your project/presentation will not be marked. Total 40 marks x 2 = 80 marks**

Marking Guidelines: 4. Near Perfect –all criteria are met 3. Well done –minor improvements needed 1 criteria missed 2. Needs improvement – several criteria missed 1. Needs major improvement – numerous criteria missed *Note that if one partner fails to deliver their part, absent – lost file on computer etc. both partners suffer (you rise and fall together)	Who did it?	Mark out of 4	Comments
<b>Slide 1: Name(s), Block, Research question stated.</b>  The research question is what motivates you to perform research, develop a hypothesis and perform an experiment.			
<b>Slide 2: Operationally define your variables.</b>  An operational definition describes exactly what the variables are and how they are measured within the context of your study. For example, if you were doing a study on the impact of sleep deprivation on driving performance, you would need to operationally define what you mean by <i>sleep deprivation</i> and <i>driving performance</i> . In this example you might define sleep deprivation as getting less than seven hours of sleep at night and define driving performance as how well a participant does on a driving test. What is the purpose of operationally defining variables? The main purpose is control. By understanding what you are measuring, you can control for it by holding the variable constant between all of the groups or manipulating it as an independent variable.			
<b>Slide 3: Develop a testable <u>hypothesis</u> that predicts how the operationally defined variables are related.</b>  In our example in the previous step, our hypothesis might be: "Students who are sleep deprived will perform worse than students who are not sleep deprived on a test of driving performance."			
<b>Slide 4: Conduct background research.</b>  What do researchers already know about your topic? What questions remain unanswered? You can learn about previous research on your topic by exploring books, journal articles, online databases, newspapers, and websites devoted to your subject.			
<b>Over...</b>			

<p><b>Slide 5: Select an experimental design.</b></p> <p><b>Pre-Experimental Designs:</b> This type of experimental design does not include a control group. A single group of participants is studied, and there is no comparison between a treatment group and a control group.</p> <p><b>Quasi-Experimental Designs:</b> This type of experimental design does include a control group, but the design does not include randomization.</p> <p><b>True Experimental Designs:</b> A true experimental design include both of the elements that the pre-experimental designs and quasi-experimental designs lack on their own - control groups and random assignment to groups.</p>			
<p><b>Slide 6: Standardize your procedures:</b> In order to arrive at legitimate conclusions, it is essential to compare apples to apples. Each participant in each group must receive the same treatment under the same conditions. For example, in our hypothetical study on the effects of sleep deprivation on driving performance, the driving test must be administered to each participant in the same way. The driving course must be the same, the obstacles faced must be the same, and the time given must be the same.</p>			
<p><b>Slide 7: Choose your participants:</b> When choosing subjects, there are a number of different techniques you can use. A <i>simple random sample</i> involves randomly selecting a number of participants from a group. A <i>stratified random sample</i> requires randomly selecting participants from different subsets of the population. These subsets might include characteristics such as geographic location, age, sex, race, or socioeconomic status.</p>			
<p><b>Slide 8: Conduct tests and collect data:</b> Prior to doing any testing, however, there are a few important concerns that need to be addressed. First, you need to be sure that your testing procedures are ethical. Generally, you will need to gain permission to conduct any type of testing with human participants by submitting the details of your experiment to your school's <i>Institutional Review Board</i>, (teacher in this case). After you have gained approval, you will need to present informed consent forms to each of your participants. This form offers information on the study, the data that will be gathered, and how the results will be used. The form also gives participants the option to withdraw from the study at any point in time. Once this step has been completed, you can begin administering your testing procedures and collecting the data.</p>			<p><b>*Presentation must contain a video of your actual experiment or your project/presentation will not be marked.</b></p>
<p><b>Slide 9: Analyze the results.</b> These statistical methods make inferences about how the results relate to the population at large. Because you are making inferences based upon a sample, it has to be assumed that there will be a certain margin of error.</p>			
<p><b>Slide 10: Write up/share your findings:</b> Be sure to mention all relevant information. If your hypothesis expected more statistically significant results, don't omit the findings if they failed to support your predictions. Don't ignore negative results. Just because a result failed to support your hypothesis, it does not mean it is not important. Results that do not support your original <u>hypothesis</u> can be just as informative as results that do.</p>			