

AP[®] PSYCHOLOGY

2015 SCORING GUIDELINES

Question 1

General Considerations

1. Answers must be presented in sentences, and sentences must be cogent enough for the student's meaning to come through. Spelling and grammatical mistakes do not reduce a student's score, but spelling must be close enough so that the reader is convinced of the word.
2. Within a point, a student will not be penalized for misinformation unless it directly contradicts correct information that would otherwise have scored the point.
3. A student can score points only if the student clearly conveys which part of the question is being answered. However, it is also possible to infer what part of the question is being answered if the response is consistent with the order of the question.
4. Rubric examples provided for each point are not exhaustive.

Part A: How might the following explain why people may easily accept the conclusion of the study?

Point 1: Confirmation bias

A student's response must indicate that people may easily accept the conclusion of the study (sugar causes hyperactivity) if the conclusion supports their previously held beliefs (e.g., if they expect that sugar would cause hyperactivity, then they will be more likely to accept the conclusion).

Examples:

Score "People will pay more attention to the results of this study because it supports what they already believe."

Do not score references to the researchers' bias.

Point 2: Availability heuristic

A student's response must illustrate that an example about sugar causing hyperactivity that readily comes to mind would lead to acceptance of the conclusion of the study (e.g., examples that "pop into mind" or are easily recalled because they are recent, vivid, or distinctive).

Note: Reference to the availability of information alone is not sufficient; a connection must be made to the immediacy of recalling it.

Example:

Do not score "They are more likely to believe it because it was on T.V."

Point 3: Misunderstanding of correlational studies

A student's response must indicate a failure to understand that correlation does not imply causation.

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Question 1 (continued)

Part B: As a follow-up study, the researchers are designing an experiment to test whether sugar causes hyperactivity. For this experiment, students were asked to accomplish the following three tasks.

Point 4: State a possible hypothesis

The student's hypothesis must include a statement of causal relationship between sugar (cause) and hyperactivity (effect). The student must indicate that something that is done with sugar (increased, decreased, given, eaten, etc.) has an effect on hyperactivity. **Exception:** When stating a null hypothesis, the student does not have to indicate that anything is done with sugar. The hypothesis can be in the form of a research question.

Examples:

Score "Sugar has no effect on hyperactivity." As mentioned above, the student does not have to indicate that anything is done with sugar when stating a null hypothesis.

Do not score references to hyperactivity causing sugar consumption.

Point 5: Operationally define the dependent variable

The student must describe how a specific indicator for hyperactivity will be measured (e.g., number of times out of a chair, times switching task, self-report scale, or any quantifiable indicator).

Example:

Do not score general descriptions of hyperactivity, such as "activity," "behavior," or "movement" as a specific measurable indicator of hyperactivity.

Point 6: Describe how random assignment can be achieved

The student's response must indicate that subjects have equal chance of being placed into groups or conditions.

Examples:

Score "equal chance" if stated or described by a specific procedure (e.g., drawing names from a hat, using a number generator/table, rolling dice) that places participants into groups by chance.

Do not score descriptions of random selection.

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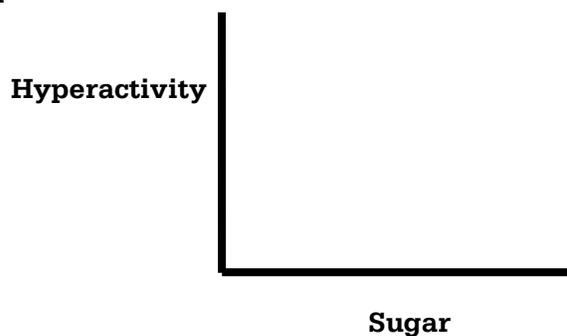
Question 1 (continued)

Part C: Graph a possible result. (2 points)

Point 7: Label the axes

To receive credit for this point, the graph must be correctly labeled with sugar on the X (horizontal) axis and hyperactivity (or a potential measurement of hyperactivity) on the Y (vertical) axis. **Note:** Students may label the X axis by using a legend.

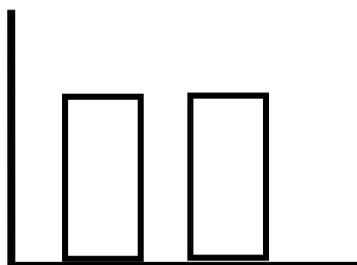
Example:



Point 8: Result on graph

To receive credit for this point, the bars on the graph must be relatively the same length.

Example:



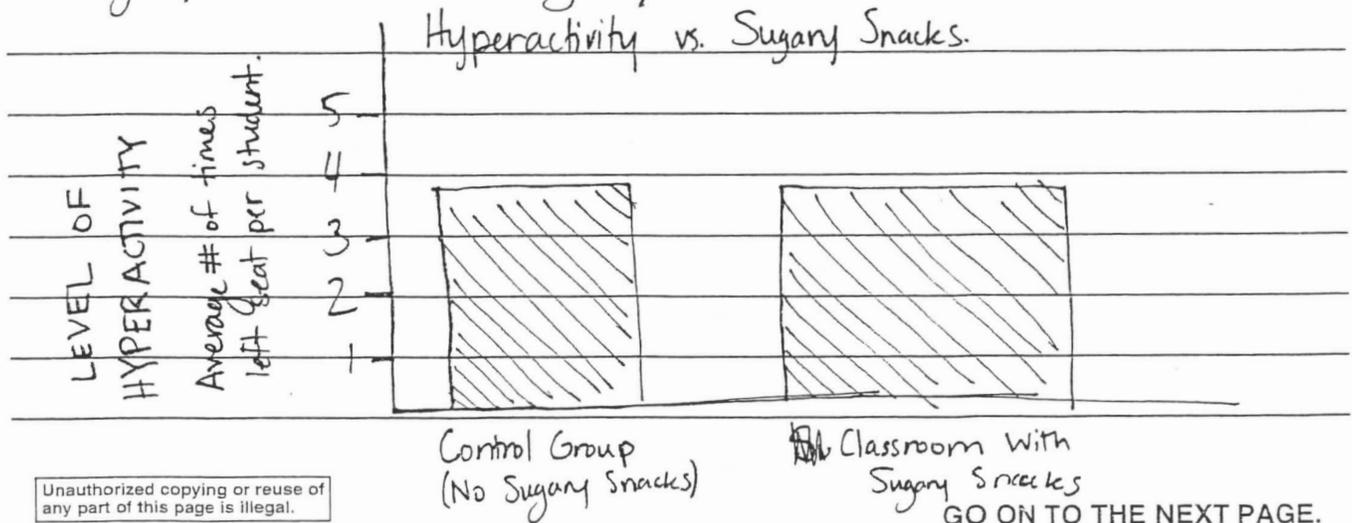
After any scientific study, there is the potential for confirmation bias. Confirmation bias states that after research is conducted, people believe they knew the answer all along. This would cause people to easily accept the conclusion of the researchers. The availability heuristic states that when thinking of possible solutions or answers to a question, ~~the~~ ideas most ~~recently~~ ~~thought~~ immediately thought of are used. For example, if someone had recently given their child a sugary donut and that child became antsy, and that thought first popped into the parent's head after hearing the study, he or she would be more likely to believe it. A misunderstanding of correlational studies could also contribute to widespread acceptance of the researchers' conclusion. Many believe that ~~the~~ correlation means ~~caus~~ causation, but this is not true. Some may believe that ~~because of~~ the correlation between sugary foods and hyperactivity shows that sugar causes hyperactivity, but there could be several confounding variables associated with the correlation.

The researchers should do a follow-up experiment to test their conclusion. A possible hypothesis could be: If children ~~are expose~~ consume sugary snacks, then they will be hyperactive. The dependent variable would be the level of activity of the students, measured by the number of times they left their seats. To properly measure

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1. Researchers conducted a naturalistic study of children between the ages of 5 and 7 years. The researchers visited classrooms during class party celebrations. As a measure of hyperactivity, they recorded the number of times children left their seats. The researchers found a strong positive correlation between sugary snacks offered at the parties and hyperactivity. Based on these findings, the researchers concluded that sugar causes hyperactivity.
 - A. How might the following explain why people may easily accept the conclusion of the study described above?
 - Confirmation bias
 - Availability heuristic
 - Misunderstanding of correlational studies
 - B. As a follow-up study, the researchers are designing an experiment to test whether sugar causes hyperactivity. For the experiment, please do the following.
 - State a possible hypothesis.
 - Operationally define the dependent variable.
 - Describe how random assignment can be achieved.
 - C. Based on the results of the follow-up experiment described in Part B, researchers conclude that sugar does not cause any change in hyperactivity.
 - Draw a correctly labeled bar graph depicting this result.

the hypothesis, the independent variable would have to be whether or not the class had sugary snacks. In this case, random assignment could be achieved by ordering the 1st grade students at an elementary school by their last names then using a random number generator to choose half of the students to be a part of the control (with no sugary snacks). The other half of the students would be part of the group that receives sugary snacks.



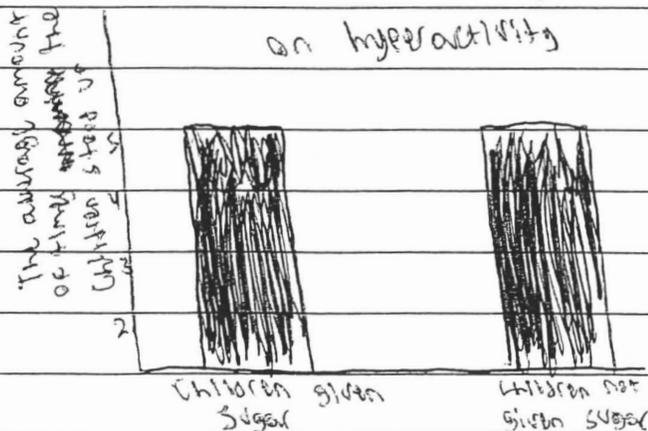
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There are several things that may affect why people will accept the research or not. Confirmation bias can lead people to think that just because there is data to back something up it must mean it's true. Availability heuristic can lead people to accept the results too. Many people already know that sugar can cause kids to be more hyper so their availability heuristic can mislead them. Many people might think that because there is a correlation between sugar and hyperactivity that sugar must cause it. BUT correlation does not always mean causation which can lead to a misunderstanding of correlational studies.

A hypothesis for this experiment would be "If children are given sugar then they will be more hyperactive. The dependent variable of this experiment would be the hyperactivity of the children. To have the most fair representation of the population students will be picked at random from ages of five and seven.

The Effect of Sugar
on hyperactivity



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ANSWER PAGE FOR QUESTION 1

A) Confirmation bias is when one prefers the other due to certain variables. The people might have easily accepted this because it's from a researcher.

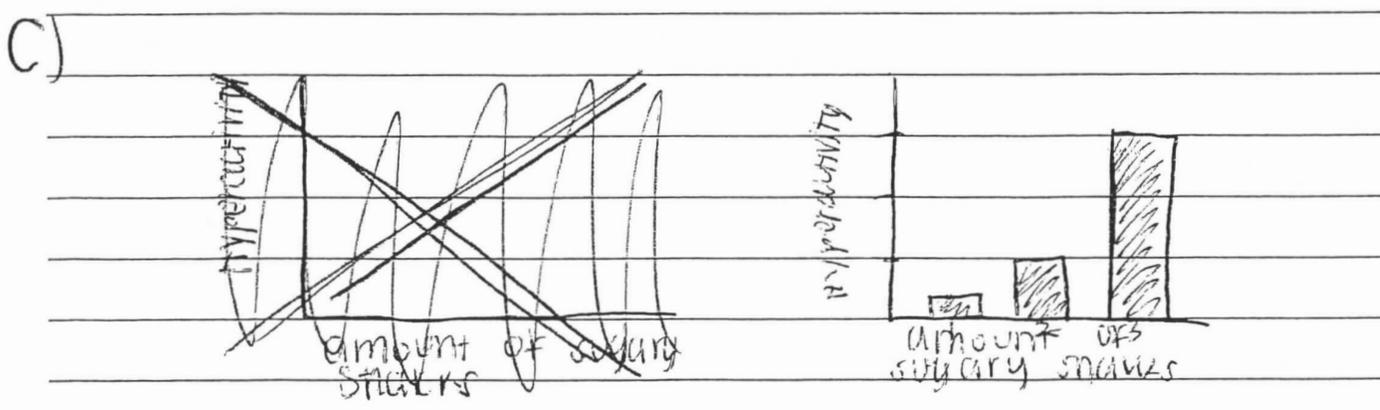
Availability heuristic is to make an assumption based on what's there. They only used sugar in the experiment, so they believe sugar is the cause.

Correlation studies are how weak or strong data is. They don't see that other factors might have played a role in this.

B) hypothesis is a theory about how something works before it's tested. The more sugar one has, the more hyperactive they are.

Dependent variable is the part in the experiment that doesn't change. In this case, it's hyperactivity.

Random assignment is an experimental method where the participants are unknown. Putting the names of the students in a hat and drawing to see who participates is an example of this.



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