2024

AP® Psychology

Sample Student Responses and Commentaries

Aligned to the 2024-2025 Course and Exam Description Free-Response Questions

Question 1: AAQ

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Sample: A
Research Method: 1
Research Variable: 1
Statistic Interpretation: 1
Ethical Guidelines: 1
Generalizability: 1
Argumentation: 2

Total Score: 7

Part A: Research Method (0-1 points): 1
The response earned the point because it identifies the research method as an experiment.

Part B: Research Variable (0-1 points): 1
The response earned the point because it correctly states the operational definition of executive functioning ("participants quickly identified whether the items were the same on both lists").

Part C: Statistic Interpretation (0-1 points): 1
The response earned the point because it explains that the multivitamin group has a higher mean than the placebo group, which indicates that the multivitamin group had better recall than the placebo group ("multivitamin group had a higher mean than the placebo group meaning they had more of an improvement in their memory").

Part D: Ethical Guidelines (0-1 points): 1
The response earned the point because it identifies an ethical guideline applied by researchers in the study ("yearly consent").

Part E: Generalizability (0-1 points): 1
The response earned the point because it proposes a claim ("The research findings are not generalizable") and uses specific and relevant evidence derived from participant information from the study ("more women than men").

Part F: Argumentation (0-2 points): 2
The response earned 2 points because it uses a specific result from the study ("The group taking the multivitamins had an improved immediate recall") and explains how the results support the researcher's hypothesis ("meaning the group with the multivitamin had a slowed cognitive decline"). The results of the study are accurately interpreted.

Sample: B
Research Method: 1
Research Variable: 0
Statistic Interpretation: 1
Ethical Guidelines: 1
Generalizability: 1
Argumentation: 1

Total Score: 6

Part A: Research Method (0-1 points): 1
The response earned the point because it identifies the research method as an experiment.

Part B: Research Variable (0-1 points): 0
The response did not earn the point because it does not accurately state the operational definition of executive functioning as whether the participant correctly identifies the second set of objects being shown as being the same or different more quickly.

Part C: Statistic Interpretation (0-1 points): 1
The response earned the point because it explains that the multivitamin group has a higher mean than the placebo group, which indicates that the multivitamin group had better recall than the placebo group ("multivitamin group had a higher mean improvement on immediate recall versus baseline compared to the placebo group").

Part D: Ethical Guidelines (0-1 points): 1
The response earned the point because it identifies an ethical guideline applied by researchers in the study.

Part E: Generalizability (0-1 points): 1
The response earned the point because it proposes a claim ("The research findings can not be generalized") and uses specific and relevant evidence derived from participant information from the study ("a lot more women than men").

Part F: Argumentation (0-2 points): 2
The response earned 2 points because it uses a specific result from the study ("taking a multivitamin helps improve immediate recall over the course of three years more than a placebo") and explains how the results support the researcher's hypothesis ("This supports the hypothesis that taking a multivitamin slows cognitive decline in late life because their memory is better compared to those who don't take a multivitamin"). The results of the study are accurately interpreted.

Sample: C
Research Method: 1
Research Variable: 0
Statistic Interpretation: 1
Ethical Guidelines: 1
Generalizability: 1
Argumentation: 1

Total Score: 5

Part A: Research Method (0-1 points): 1
The response earned the point because it identifies the research method as an experiment.

Part B: Research Variable (0-1 points): 0
The response did not earn the point because it does not accurately state the operational definition of executive functioning as whether the participant correctly identified the second set of objects shown as being the same or different more quickly.

Part C: Statistic Interpretation (0-1 points): 1
The response earned the point because it explains that the multivitamin group has a higher mean than the placebo group, which indicates that the multivitamin group had better recall than the placebo group ("multivitamin group could quickly recall items faster than the placebo group").

Part D: Ethical Guidelines (0-1 points): 1
The response earned the point because it identifies an ethical guideline applied by researchers in the study ("researchers asked for written consent before the experiment began").

Part E: Generalizability (0-1 points): 1
The response earned the point because it proposes a claim ("The research findings may not be generalizable") and uses specific and relevant evidence derived from participant information from the study ("testing was only done on women ages 65 and up").

Part F: Argumentation (0-2 points): 1
The response earned 1 point because it uses the results of the study ("In the experimental group in year 1, the mean recall increased from 7.1 words to 7.8 words. While in the placebo group, the mean recall went from 7.21 to 7.65. Therefore, showing that the mean of the experimental group increased about 0.2 more than the placebo group"). The response did not earn 2 points because it does not explain how the hypothesis is supported or refuted.

Sample: D
Research Method: 1
Research Variable: 0
Statistic Interpretation: 1
Ethical Guidelines: 0
Generalizability: 1
Argumentation: 1

Total Score: 4

Part A: Research Method (0-1 points): 1
The response earned the point because it identifies the research method as an experiment.

Part B: Research Variable (0-1 points): 0
The response did not earn the point because it does not accurately state the operational definition of executive functioning as whether the participant correctly identified the second set of objects shown as being the same or different more quickly.

Part C: Statistic Interpretation (0-1 points): 1
The response earned the point because it explains that the multivitamin group has a higher mean than the placebo group, which indicates that the multivitamin group had better recall than the placebo group ("this difference in means shows that when participants had the multivitamin their memory improved more than the participants who took the placebo").

Part D: Ethical Guidelines (0-1 points): 0
The response did not earn the point because it does not identify an ethical guideline applied by researchers in the study. The response indicates that the researchers did not consider the negative side effects of taking multivitamins. This factor was considered by the researchers, and it was determined that taking multivitamins did not constitute undue harm to the participants.

Part E: Generalizability (0-1 points): 1
The response earned the point because it proposes a claim ("The research findings may not be generalizable") and provides specific and relevant evidence derived from participant information from the study ("there is 93% white race in both groups").

Part F: Argumentation (0-2 points): 1
The response earned 1 point because it uses research findings to explain how taking a multivitamin slows cognitive decline ("The group that took the multivitamin started from a baseline of 7.81 with an improvement of 0.71 in 1 year"). The response did not earn 2 points because the interpretation of the study's results is inaccurate ("This goes against the researchers' hypothesis and the results show that the multivitamin does not slow cognitive decline").

Sample: E
Research Method: 1
Research Variable: 0
Statistic Interpretation: 0
Ethical Guidelines: 0
Generalizability: 1
Argumentation: 1

Total Score: 3

Part A: Research Method (0-1 points): 1
The response earned the point because it identifies the research method as an experiment.

Part B: Research Variable (0-1 points): 0
The response did not earn the point because it does not accurately state the operational definition of executive functioning as whether the participant correctly identified the second set of objects shown as being the same or different more quickly.

Part C: Statistic Interpretation (0-1 points): 0
The response did not earn the point because it does not describe the meaning of the differences in the means for the immediate recall tasks between the multivitamin group and the placebo group in relation to the study. This response describes the three measures of central tendency.

Part D: Ethical Guidelines (0-1 points): 0
The response did not earn the point because it does not identify an ethical guideline applied by researchers in the study. Confidentiality is not explicitly described as a procedure considered by the researchers in the study.

Part E: Generalizability (0-1 points): 1
The response earned the point because it proposes a claim ("The research is generalizeable…") and provides specific and relevant evidence derived from participant information from the study ("over 90% of partipcants selected white as their race").

Part F: Argumentation (0-2 points): 1
The response earned 1 point because it uses research findings to explain how taking a multivitamin slows cognitive decline ("…in the graph it shows that the multivitamins improve recall tasks"). The response did not earn 2 points because the interpretation of the study's results is inaccurate ("…refutes the researchers' hypothesis").

Sample: F
Research Method: 1
Research Variable: 0
Statistic Interpretation: 0
Ethical Guidelines: 0
Generalizability: 0
Argumentation: 1

Total Score: 2

Part A: Research Method (0-1 points): 1
The response earned the point because identifies the research method as a longitudinal study.

Part B: Research Variable (0-1 points): 0
The response did not earn the point because it does not accurately state the operational definition of executive functioning as whether the participant correctly identified the second set of objects shown as being the same or different more quickly.

Part C: Statistic Interpretation (0-1 points): 0
The response did not earn the point because it does not describe the meaning of the differences in the means for the immediate recall tasks between the multivitamin group and the placebo group in relation to the study. This response describes the means as similar, not different ("…there is no consistent differences in their means").

Part D: Ethical Guidelines (0-1 points): 0
The response did not earn the point because it describes an ethical guideline not used by the researchers in the study.

Part E: Generalizability (0-1 points): 0
The response did not earn the point because it does not propose a claim regarding the generalizability of the study to a population. The response references participant characteristics without making a claim about how those characteristics contribute to the study's generalizability.

Part F: Argumentation (0-2 points): 1
The response earned 1 point because it uses the results of the study ("On the graph, the multivitamin line is greater than the placebo line"). The response did not earn 2 points because it does not explain how the hypothesis is supported or refuted.

Sample: G
Research Method: 0
Research Variable: 0
Statistic Interpretation: 0
Ethical Guidelines: 0
Generalizability: 0
Argumentation: 1

Total Score: 1

Part A: Research Method (0-1 points): 0

The response did not earn the point because it does not identify the research method as an experiment. “Quantitative research” refers to the data collection procedures, not the methodology being used in a study.

Part B: Research Variable (0-1 points): 0

The response did not earn the point because it does not accurately state the operational definition of executive functioning as whether the participant correctly identified the second set of objects shown as being the same or different more quickly.

Part C: Statistic Interpretation (0-1 points): 0

The response did not earn the point because it provides the means for both the multivitamin group and the placebo group but does not describe the meaning of the differences in the means. This response reports the mean ratings of the two groups but does not describe how they are different.

Part D: Ethical Guidelines (0-1 points): 0

The response did not earn the point because it does not identify an ethical guideline applied by researchers in the study. “Voluntary participation” is not synonymous with informed consent.

Part E: Generalizability (0-1 points): 0

The response did not earn a point because while the response proposes a claim regarding the generalizability of the conclusion of the study (“The research findings may be generalizable…”), the response makes no reference to a population. The response references the size of the sample, not the population to which the study would be generalized.

Part F: Argumentation (0-2 points): 1

The response earned 1 point because it uses a specific result from the study (“the graph…shows the group on multivitamins having a higher average immediate recall”). The response did not earn 2 points because the interpretation of the study’s results is inaccurate (“The research findings refute the researcher’s hypothesis”).

This study is an experiment.

Participants were shown two sets of items and then asked if the items on each list were the same or not, if the participants quickly identified whether the items were the same on both lists then they had higher executive functioning.

The multivitamin group had a higher mean than the placebo group meaning they had more of an improvement in their memory compared to the group that received the placebo.

Researchers sent out a yearly consent form to participants and they could either accept or decline the survey.

The research findings are not generalizable because when comparing the number of women to men and the overall number of participants in each group, there were more women than men, and group 1 had about 50 more people than group 2.

The group taking the multivitamins had an improved immediate recall of the items in the list compared to the group taking the placebo meaning the group with the multivitamin had a slowed cognitive decline.

The research method used in the study was experimental because the environment in which participants were tested was controlled.

The operational definition of executive functioning is if the participant accurately recognizes if the set of items is the same or different as the second set at least two out of three times.

The multivitamin group had a higher mean improvement on immediate recall task versus baseline compared to the placebo group. This means the group that took the vitamin had better immediate recall of information.

The participants had to give informed consent by responding to an email. This means they were given information about the experiment and agreed to participate.

The research findings can not be generalized because there were a lot more women than men and most of the participants were white. This means the results cannot be applied to the broader population until they are replicated with more kinds of people.

The study shows taking a multivitamin helps improve immediate recall over the course of three years more than a placebo. This supports the hypothesis that taking a multivitamin slows cognitive decline in late life because their memory is better compared to those who don't take a multivitamin.

This is an experiment.

Whether the participant was able to correctly identify 65% or more classifications of the items in under 1 minute.

The greater the difference in the means for the immediate recall task between the multivitamin group and the placebo group shows the effect of the multivitamin. The greater the difference is between the two times, shows the change the multivitamin has on recall. If the two times between the two groups were the same, that shows that the vitamin did not do its job. But, if the multivitamin group could quickly recall items faster than the placebo group, then that shows the benefit of the vitamin on recall.

One ethical guideline applied by the researchers is that they used random assignment to create the experimental and control groups. This made the groups more even and eliminated the possibility of the groups being chosen based on certain criteria. Also, the researchers asked for the participants written consent before the experiment began.

The research findings may not be generalizable to many different races, and not different generations. The testing was only done on women ages 65 and up, and men ages 60 and up. It is also not very generalizable to many different races 93% of the participants were white, and the rest of the small percentage being other ethnicities, making up only around 7% of the participants.

When looking at the graph, it is clear that over the 3 year timeline, mean immediate recall increased a lot; around 0.4 increased mean each year. In the experimental group in year 1, the mean recall increased from 7.1 words to 7.8 words. While in the placebo group, the mean recall went from 7.21 to 7.65. Therefore showing that the mean of the experimental group increased about 0.2 more than the placebo group.

The research method used in the study was an experiment.

Executive functioning is when you are able to identify differences between objects.

The means for the immediate recall task between the multivitamin group and the placebo group were different. The mean of the multivitamin group was higher than the mean of the placebo group. This difference in the means shows that when participants had the multivitamin their memory improved more than the participants who took the placebo.

One ethical guideline applied by the researchers is the multivitamin and the side effects. The multivitamin that researchers gave participants had many side effects. This included brushing, skin rash, and gastrointestinal bleeding. These side effects could have lasting effects on the participants and puts them in harm. This goes against ethics with keeping the participants safe and out of danger.

The research findings may not be generalizable because of the participants used and their demographics. In the study, researchers do use participants from multiple ethnicities, but there is a 93% white race in both groups. This means that most of the participants used were white and this makes the findings of the study not as generalizable to other cultures. Yes the study uses other ethnicities but the next highest population they use is African American with a 2% in each group.

The results of the study refutes the researchers' hypothesis that taking a multivitamin slows cognitive decline in later life. The results show improvement of memory when taking the multivitamin. The group that took the multivitamin started from a baseline of 7.81 with an improvement of 0.71 in 1 year. This shows that with the multivitamin participants were able to increase the amount of words they could recall. This goes against the researchers' hypothesis and the results show that the multivitamin does not slow cognitive decline.

The research method being used is long term study or experiment because the researchers were studying their participants over a longer period of time.

The operational definition of executive functioning is how the changing thing in the study can be or look the same as something else

The meaning of the difference in the means for the immediate recall task between the multivitamin group and the placebo group is mode, which numbers appear more than once. median, the middle number, and mean, adding all the numbers together and dividing it by the amount of numbers there are.

One ethical guideline was to keep their personal info confidential.

The hypothesis refutes the researchers' hypothesis. The result of the study show this because in the graph it shows that the multivitamins improve recall tasks.

The research method used in the study is a longitudinal study.

Participants were sent emails yearly for 3 years to evaluate their episodic memory and executive functioning.

For all of the different demographics in both the multivitamin group and the placebo group, there is no consistent differences in their means. All of the means are very similar.

They debriefed the participants afterward.

All of the participants were fairly old (having to be over 65 years old) and it is common for older people to have memory loss, which can skew the results.

On the graph, the multivitamin line is greater than the placebo line, indicating an improvement in memory rather than a decline.

They used quantitative research in this study.

The experiment is replicable, executive functioning is the brain's cognitive processes and how they function, and how the multivitamin could improve or lead to a decline of these function

In group 1, those taking the multivitamin had an improvement mean of .71 after a year. Group 2 was taking the placebo and they had a mean improvement of .44 after a year.

Voluntary participation is applied by the researchers because 7,000 people received mail invitations to participate but only 4,000 people agreed.

The research findings may be generalizable because it is a large group of people participating in the study, and the results could help others if the multivitamin improves cognitive processes.

The research findings refute the researcher's hypothesis because the graph, a comparison of memory improvement between two groups, shows the group on multivitamins having a higher average immediate recall.

Question 2: EBQ

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Sample: A
Part A – Claim: 1
Part B.i. – Evidence: 1
Part B.ii. – Reasoning: 2
Part C.i. – Evidence: 1
Part C.ii. – Reasoning: 2

Total Score: 7

Part A: Claim (0-1 points): 1

The response earned 1 point because it provides a claim relevant to the question ("The most appropriate start time for secondary students is 8:30 AM").

Part B.i.: Evidence (0-1 points): 1

The response earned 1 point because it uses specific and relevant evidence from one of the provided sources that is correctly cited ("In Source 1, 4 out of 8 school districts shifted to a later start time to measure its effects on students. The schools that moved to later start times reported higher grade point averages (.14-.20 Boosts) and higher proportions (+16%) of meeting the recommended hours of sleep").

Part B.ii.: Reasoning (0-2 points): 2

The response earned 2 points because it applies a psychological perspective, theory, concept, or research finding to explain the relationship between the evidence and the claim ("It would provide benefits towards the students who can earn a higher GPAs because they are better able to **consolidate memories** from what they learned during the day").

Part C.i.: Evidence (0-1 points): 1

The response earned 1 point because it uses specific and relevant evidence from a different source than what was used in Part B that is correctly cited ("According to Source 3, the American Pediatric Association recommended that school set start times so that teens can get sufficient sleep").

Part C.ii.: Reasoning (0-2 points): 2

The response earned 2 points because it applies a psychological perspective, theory, concept, or research finding to explain the relationship between the evidence and the claim ("Shortened periods of sleep may lead to insufficient **REM sleep** and a delay in their "sleep-wake" cycle").

Sample: B
Part A – Claim: 1
Part B.i. – Evidence: 1
Part B.ii. – Reasoning: 1
Part C.i. – Evidence: 1
Part C.ii. – Reasoning: 2

Total Score: 6

Part A: Claim (0-1 points): 1

The response earned 1 point because it provides a claim relevant to the question provided ("Schools with later start times allow for increased optimal levels of sleep for secondary students (grades 6-12) resulting in higher grade point averages").

Part B.i.: Evidence (0-1 points): 1

The response earned 1 point because it uses one piece of correctly cited, specific, and relevant evidence from a provided source ("When schools move their start times back they reported "higher grade point averages" as well as "higher proportions of meeting the recommended hours of sleep" (Source 1)").

Part B.ii.: Reasoning (0-2 points): 1

The response earned 1 point because it explains the relationship between the evidence and the claim ("This suggests that because schools that move their start times back to allow for more time for students to get optimal levels of sleep, their grades increase"). The response did not earn 2 points because it does not apply a psychological perspective, theory, concept, or research finding learned in AP Psychology to explain how the evidence supports the claim.

Part C.i.: Evidence (0-1 points): 1

The response earned 1 point because it uses a different piece of correctly cited, specific, and relevant evidence from a different source than what was used in Part B ("A study found that '28% of students reported falling asleep in school at least once a week' which suggests that optimal sleep is not being achieved (Source 3)").

Part C.ii.: Reasoning (0-2 points): 2

The response earned 2 points because it applies a psychological perspective, theory, concept, or research finding to explain how the evidence supports the claim ("Optimal sleep is crucial for information to be properly stored and without **proper storage of information**, grades will drop").

Sample: C
Part A – Claim: 1
Part B.i. – Evidence: 1
Part B.ii. – Reasoning: 1
Part C.i. – Evidence: 1
Part C.ii. – Reasoning: 1

Total Score: 5

Part A: Claim (0-1 points): 1

The response earned 1 point because it provides a claim that is relevant to the question provided ("A later school start time will be beneficial for children, and lead to higher rates of academic success").

Part B.i.: Evidence (0-1 points): 1

The response earned 1 point because it uses one piece of correctly cited evidence from one of the provided sources to support the claim ("According to Source 3, 28% of students are falling asleep in class along with 1 in 5 students who struggle to stay awake while doing schoolwork").

Part B.ii.: Reasoning (0-2 points): 1

The response earned 1 point because it explains the relationship between the evidence and the claim ("this is a clear issue because the students' may not be able to retain any information they are learning…"). The response did not earn 2 points because it does not apply a psychological perspective, theory, concept, or research finding learned in AP Psychology to explain how the evidence supports the claim.

Part C.i.: Evidence (0-1 points): 1

The response earned 1 point because it uses a different piece of correctly cited evidence than what was used in Part B ("…show higher rates of maintaining a healthy sleep schedule than those with an earlier school time (Source 1)").

Part C.ii.: Reasoning (0-2 points): 1

The response earned 1 point because it explains the relationship between the evidence and the claim ("This should be enough evidence to determine that starting school later not only has positive academic impacts, but also health benefits for the students"). The response did not earn 2 points because it does not apply a psychological perspective, theory, concept, or research finding learned in AP Psychology to explain how the evidence supports the claim.

Sample: D
Part A – Claim: 1
Part B.i. – Evidence: 1
Part B.ii. – Reasoning: 2
Part C.i. – Evidence: 0
Part C.ii. – Reasoning: 0

Total Score: 4

Part A: Claim (0-1 points): 1

The response earned 1 point because it provides a claim relevant to the question ("School should start later…").

Part B.i.: Evidence (0-1 points): 1

The response earned 1 point because it uses one piece of correctly cited, specific, and relevant evidence from one of the provided sources to support the claim ("According to Source 3, most adolescents experience a shift of up to 2 hours in their sleep-wake cycle").

Part B.ii.: Reasoning (0-2 points): 2

The response earned 2 points because it applies a psychological perspective, theory, concept, or research finding to explain the relationship between the evidence and the claim ("A shift in the school schedule is needed to match the shift in the **circadian rhythm** of the students, or else they will be tired during school hours").

Part C.i.: Evidence (0-1 points): 0

The response did not earn 1 point because it does not use a different piece of cited, specific, and relevant evidence than what was used in Part B from one of the provided sources to support the claim ("According to Source 3, schools that moved to later start times, correlated with higher GPAs").

Part C.ii.: Reasoning (0-2 points): 0

The response did not earn 2 points because it does not explain the relationship of the evidence to the claim or apply a psychological perspective, theory, concept, or research finding.

Sample: E
Part A – Claim: 1
Part B.i. – Evidence: 0
Part B.ii. – Reasoning: 0
Part C.i. – Evidence: 0
Part C.ii. – Reasoning: 2

Total Score: 3

Part A: Claim (0-1 points): 1

The response earned 1 point because it provides a claim relevant to the question ("Secondary school should start at 9:00 A.M").

Part B.i.: Evidence (0-1 points): 0

The response did not earn 1 point because the evidence is not from the source that is cited.

Part B.ii.: Reasoning (0-2 points): 0

The response did not earn 2 points because it does not explain the relationship between the evidence and the claim and does not use a psychological perspective, theory, concept, or research finding learned in AP Psychology to explain how the evidence supports the claim.

Part C.i.: Evidence (0-1 points): 0

The response did not earn 1 point because it lacks a citation to document the use of one piece of specific and relevant evidence from one of the provided sources to support the claim.

Part C.ii.: Reasoning (0-2 points): 2

The response earned 2 points because it applies a psychological perspective, theory, concept, or research finding to explain the relationship between the evidence and the claim ("This shows that starting school later will improve the **well being** of students."). This response demonstrates a minimum threshold for an acceptable response for reasoning.

Sample: F
Part A – Claim: 0
Part B.i. – Evidence: 1
Part B.ii. – Reasoning: 1
Part C.i. – Evidence: 0
Part C.ii. – Reasoning: 0

Total Score: 2

Part A: Claim (0-1 points): 0

The response did not earn 1 point because it does not provide a claim relevant to the question ("The secondary Students will need a huge amount of sleep and reinforced procedure of schedule in order to improved their GPA...").

Part B.i.: Evidence (0-1 points): 1

The response earned 1 point because it uses one piece of correctly cited, specific, and relevant evidence from one of the provided sources to support the claim ("According to Source 3, They hypothesize that earlier school times contribute to insufficient sleep due to the disruption in the sleep-wake cycle…").

Part B.ii.: Reasoning (0-2 points): 1

The response earned 1 point because it explains the relationship between the evidence and the claim ("…and so they change the school times longer to improve physical and quality of life"), but the response did not earn 2 points because it does not apply a psychological perspective, theory, concept, or research finding to explain how the evidence supports the claim.

Part C.i.: Evidence (0-1 points): 0

The response did not earn 1 point because it does not use specific and relevant evidence from a different source. The information used and cited is not from any of the provided sources.

Part C.ii.: Reasoning (0-2 points): 0

The response did not earn 2 points because it does not explain the relationship between the evidence and the claim or apply a psychological perspective, theory, concept, or research finding.

Sample: G
Part A – Claim: 1
Part B.i. – Evidence: 0
Part B.ii. – Reasoning: 0
Part C.i. – Evidence: 0
Part C.ii. – Reasoning: 0

Total Score: 1

Part A: Claim (0-1 points): 1

The response earned 1 point because it provides a claim relevant to the question ("10:00AM should be the starting time for school.").

Part B.i.: Evidence (0-1 points): 0

The response did not earn 1 point because it lacks a citation to document the use of one piece of specific and relevant evidence from one of the provided sources to support the claim.

Part B.ii.: Reasoning (0-2 points): 0

The response did not earn 2 points because it does not explain the relationship of the evidence to the claim or apply a psychological perspective, theory, concept, or research finding. The response provides opinions with no reference to the sources provided.

Part C.i.: Evidence (0-1 points): 0

The response did not earn 1 point because it does not use a different piece of cited, specific, and relevant evidence than what was used in Part B from one of the provided sources to support the claim. None of the information presented in this section is from the provided sources.

Part C.ii.: Reasoning (0-2 points): 0

The response did not earn 2 points because it does not explain the relationship of the evidence to the claim or apply a psychological perspective, theory, concept, or research finding learned in AP Psychology to explain how the evidence supports the claim.

The most appropriate start time for secondary students is 8:30 AM because that is the time that allows teenagers to get the most sufficient amount of sleep.

In Source 1, 4 out of 8 school districts shifted to a later start time to measure its effects on students. The schools that moved to later start times reported higher grade point averages (.14-.20 Boosts) and higher proportions (+16%) of meeting the recommended hours of sleep. Schools start at an average time of 8:00 AM across the country. When this time was shifted back to a more reasonable hour, the benefits were indisputable. This shows that an 8:30 AM start time is better than an 8:00 AM or 9:00 AM start time. It would provide benefits towards the students who can earn a higher GPAs because they are better able to consolidate memories from what they learned during the day.

According to Source 3, the American Pediatric Association recommended that schools set start times so that teens can get sufficient sleep. Teens biologically require a certain amount of sleep to function at a baseline level. When factoring in homework and other assignments, shorter amounts of sleep become incredibly difficult to maintain. Shortened periods of sleep may lead to insufficient REM sleep and a delay in their "sleep-wake" cycle. If the 83% of schools that start earlier than 8:30 AM were to heed APA's advice and start school later, they would see improvements in their students' attention, attendance, attitude, and general grades.

Schools with later start times allow for increased optimal levels of sleep for secondary students (grades 6-12) resulting in higher grade point averages.

When schools move their start times back they reported "higher grade point averages" as well as "higher proportions of meeting the recommended hours of sleep" (Source 1). This suggests that because schools that move their start times back to allow for more time for students to get optimal levels of sleep, their grades increase.

Sleep is crucial to memory consolidation; therefore, without proper sleep memories cannot be properly encoded and information cannot be learned as well. However, an issue arises. A study found that "28% of students reported falling asleep in school at least once a week" which suggests that optimal sleep is not being achieved (Source 3). Optimal sleep is crucial for information to be properly stored and without proper storage of information, grades will drop. Furthermore, more must be done to ensure that proper sleep is achieved- this can be done by pushing back the times at which schools start in order to ensure that kids have more time to sleep at night.

A later school start time will be beneficial for children, and lead to higher rates of academic success.

Because children today are so tired from waking up early for school everyday, they are not able to complete daily tasks, including the act of going to school, without falling asleep. According to Source 3, 28% of students are falling asleep in class along with 1 in 5 students who struggle to stay awake while doing schoolwork; this is a clear issue because the students' may not be able to retain any information they are learning if they are so tired, which will lead to grades dropping and lower rates of success.

In source 1, it is clearly seen that a later start time in schools is beneficial to a number of students. Not only are the students' grades going up, but they show higher rates of maintaining a healthy sleep schedule than those with an earlier school start time (Source 1). This should be enough evidence to determine that starting school later not only has positive academic impacts, but also health benefits for the students.

School should start later, so as to give students more time to sleep and improve their academic performance.

According to Source 3, most adolescents experience a shift of up to 2 hours in their sleep-wake cycle. This means that is inefficient for grades 6-12 to start school at the same time as grades 1-5. A shift in the school schedule is needed to match the shift in the circadian rhythm of the students, or else they will be tired during school hours.

According to Source 3, schools that moved to later start times, correlated with higher GPAs. This is consistent across the board for these kids.

Secondary school should start at 9:00 A.M. for all students because it will increase grade average and attendance.

According to source 1, one of the effects of starting school later is decreased tardiness. This supports my claim because it shows how student attendance will improve.

Having set school start times for middle and high school students in a way that helps them get 8.5 to 9.5 hours of sleep a night in order to improve physical and mental health, safety, academic performance, and quality of life. This shows that starting school later will improve the well being of students.

The secondary Students will need a huge amount of sleep and reinforced procedure of schedule in order to improved their GPA And grades in High school, but because of the different quality ways groups perform their sleep.

For example, When American Academy of Pediatrics realizes the fad trend of insufficient sleep in every students in Every School. According to Source 3, They hypothesize that earlier school times contribute to insufficient sleep due to the disruption in the sleep-wake cycle, and so they change the school times longer to improve physical and quality of life. Furthermore, the Academy recorded the results and found that ounce a week, there will decreased sleep duration and lower academic achievement.

According to Source 1 the study of Minnesota documents was conducted in which the pineal glands produces the necessary amount of hormones for better score in school. But they tend to be small and don't always work for most students and teachers due to the work schedule that can end school earlier and cut school sports.

10:00AM should be the starting time for school.

Students getting at least 8.5-9.5 hours of sleep every night. Most teenagers stay up from midnight to 2AM. Students have to wake up fairly early depending on how far they live away from the school. The farther they are, the earlier they have to wake up. That cuts a lot of sleeping time away from the students and causes them to be drowsy in the morning especially if they didn't eat breakfast.

The sun being out is a sign of it being the daytime where people are less likely to sleep in due to how our brains are wired.