

# Sample Journal 3

**Year:** 2024-2025

**Grade:** G11

**Semester:** 2<sup>nd</sup> Semester



**Question 1: The nature of work at stem schools depends on co-operation but it's sometimes normal to find arguments among the team. Explain two methods you can follow one as a team leader and the other as a member to overcome this conflict.**

I was a quiet kid, without friends, and without affection most of the time, but that didn't turn me down at all. I worked on myself and learnt a skill that changed everything its called "Active Listening" its one of the pillars that create a charismatic personality, where one has to listen to the other person speaking while making sure to be present in the moment without being distracted and give in the chance to hear what the other person is saying instead of waiting for his turn to speak. Therefore, when I entered STEM, I got through the arguments easily both when I was a leader and a member. Moreover, when it comes to the second method, I'd without a doubt say its honesty. Because people might not focus so much so they would make mistakes, and these mistakes always need to be addressed. Both methods were the main way that I went while both being a leader and a member, but the main difference would be that when I was a leader, I tried to speak up a lot more and act upon many things while making decisions. On the other hand, when being a member, I always tried to recommend my ways so they could be heard addressed and maybe even taken as actions. To conclude the psychological skill that most therapists use "Active Listening" is always the right option when having to solve arguments. Additionally, that is furthermore enhanced when honesty is implied. Generating a bulletproof way to not drown in useless arguments but rather get the benefit out of them.

**Grade: Blue**

**Feedback:**

**Strengths:**

- 1- The response covers all parts of the question, mentioning and explaining the two methods clearly.
- 2- It follows a strong essay structure: a catchy introduction, a detailed body and a smart conclusion.
- 3- It uses academic vocabulary and advanced sentence connectors such as: “a charismatic personality”, “psychological skill”, “Additionally”, “Moreover”, “Therefore”.
- 4- It introduces a real-life method: “Active Listening”.

**Weaknesses:**

- 1- The question specifically asked for one method as a team leader and one as a member. However, both methods were used interchangeably for both roles. It would be clearer and more accurate to assign each method to one specific role.
- 2- The first method is not clearly stated and must be concluded from the example in the introduction. A better approach would be to name the methods directly, before providing examples or explanations.

**General Notes:**

Minor improvements can be made to punctuation, sentence length, and phrasing. For example: “where one has to listen ... waiting for his turn to speak.” → Can use a lot of commas or full stops in between or be divided into smaller related sentences.

**Question 2: Briefly describe the solution you decided to do, and then explain the reason for choosing it, then demonstrate the methods your team will follow to solve the problem.**

Tackling the ways of water treatment and looking into the possible applications, sources and stages we got the conclusion of creating a water treatment prototype that turns laundry water into drinkable water. And to be able to do that the solution had to follow strict conditions, firstly we started by getting an inspiration from the home filters that we have, we had the first stage be electrocoagulation using assisted using a 12V solar

panel using recycled Aluminum from V-Cola cans as an anode and having it create Aluminum oxide that makes hard objects stick to it creating the flux and having our filtered water come out on the top (this stage works to separate suspended particles and balances PH by having the anode react with the OH reducing the OH concentration), then the second stage being adsorption using activated carbon processed from banana peels created in 800C of burning without oxygen, adsorption works its magic in reducing the salinity to the needed amount by having the water to leave its contamination in the micro-porous structure of the activated carbon, now when it came to the final stage we had to go for heavy metals reduction using Volcanic Zeolite to react and absorb the Cd, Lead reduce Mg and generally soften the water, so we could achieve the possible parameters for drinking water (6.5-8PH)(<500ppm salinity)(<1NTU turbidity). Our team will follow strict methods when creating the prototype, we have bought gravity analog sensors for both the PH, turbidity and salinity already. And finally Constructed the possible design in 3D.

## **Grade: Blue**

## **Feedback:**

### **Strengths:**

- 1- The body is organized into “stages”, each representing a step in solving the problem through the chosen solution.
- 2- The solution is explained briefly and clearly, with several capstone-related concepts included.
- 3- Very specific details and examples were provided.

### **Weaknesses:**

- 1- The question asks for three points: “describe the solution”, “the reason for choosing it”, “demonstrate the methods... to solve the problem”. However, the response doesn’t include the second point - the reason for choosing the solution - at all.
- 2- While the use of specific details and advanced vocabulary is generally good, relying too heavily on them without simpler explanations can make the answer hard to follow. After each stage, a short summary of the stage should be written in basic English to help normal make progress and processes clearer.

### **General Notes:**

No Additional Comments.

**Question 3: Concerning (ph.2.08) in which you have learned the electromagnetic induction phenomenon. Explain two applications that may be used in your sustainable water purification system.**

“A man never steps in the same river twice, for he is not the same man and it’s not the same river.” This philosophical quote tackled with the idea that everything is constantly changing, these changes are the basis of the electromagnetic induction in Physics learning outcome 8. Where the inertia of the electrons in objects tends to create a weird phenomenon whenever a magnetic field is imposed onto it (A Change in the magnetic flux happens) whenever that happens the electrons try and reverse that change by trying to go back to its normal state by creating a reversed action of either repulsion or attraction increasing the flux or decreasing or according to lenz’s law increasing or decreasing the electrical potential creating electrical current if a circuit is connected, two applications that could possibly work would firstly be to use a pump that works with electromagnetic induction self and mutual induction to create an electric current to power the pump without having to get additional power from an external source. The second application could be to use electromagnetic induction to furthermore induce current to power the electrocoagulation so it could create a full bullet-proof design that works automatically and without the need of an external power source.

**Grade: Blue**

**Feedback:**

**Strengths:**

- 1- The response cites a quote to help clarify the physics concept.
- 2- It explains the concept in a simple, easy-to-understand manner before answering the questions directly.
- 3- It fully addresses all parts of the question including both applications.
- 4- It refers to a relevant law (Lenz’s law) and explains its meaning.
- 5- It utilizes vocabulary relevant to the physics concept, learning transfer and the capstone project as well as uses academic phrasing effectively.

**Weaknesses:**

- 1- Poor punctuation and lengthy sentences.

## General Notes:

There are no extra notes.

### Question 4: How does (bi.2.09), in which you study hormonal feedback to prepare the uterus to receive the fetus, help you understand and create the feedback system in your project to recycle water using natural resources?

“Pregnancy is the gift of life gift of god” it is a quite complex process that even has a more complicated processes being its preparation, there are 2 cycles that happen simultaneously in the female reproduction system. First being the ovarian (in the ovary) cycle split into 2 stages and a barrier in between (Follicular phase | ovulation | luteinizing phase) the second cycle being the menstrual cycle (or uterine cycle in the uterus) at first the hypothalamus releases GnRH (the gonadotrophin releasing hormone) to stimulate the interior pituitary gland to release the gonadotrophin hormones (FSH, LH) when they start to emit the cycles start and the follicle starts to grow by the FSH where the vaginal abdominal starts to grow and fill with blood vessels getting ready for fertilization the follicle acts as a gland and releases estradiol while that happens and with time when ovulation hits then happens a LH booming surge it happens due to hormonal feedbacks when estradiol is low it makes a negative feedback to be lower but when it is high it created a positive feedback to be even more higher. All of that could help me in my project in recycling water in our three stages feedback system by interpreting a feedback looping mechanism that makes the water go through many cycles until it reaches the needed amount preparing for the drinking of the water (the application). To conclude, we followed the feedback loop mechanism of the hormonal control to interpret it into our project by making the water go through many cycles until it reaches the needed purification.

**Grade: Blue**

## Feedback:

### Strengths:

- 1- The response explains hormonal feedback to the last detail, writes several biological processes and concepts, and divides the explanations into cycles.
- 2- It gives examples of specific hormones.
- 3- It is divided into an essay: introduction, body, and conclusion.

## **Weaknesses:**

- 1- The final part - how the learning transfer helps create the feedback system is unclear. The answer thoroughly explains both hormonal feedback and the solution, but the connection between them feels weak or superficial. Aside from the shared idea of a “feedback mechanism,” no specific link is made. To strengthen the answer, it would help to include clear examples showing how the solution actually draws from or is inspired by the biological process.
- 2- Poor punctuation and lengthy sentences again.

## **General Notes:**

There are no extra notes.