**List three important goals for your capstone team in this semester. Pick one you think is most important and explain why you picked it. \*BLUE**

In stem schools, part of our life and study is about doing a project. Last year, I worked in two teams with different people, different ideas, and different experiences. Each semester we learn new things, new skills, new experiences and try to earn a lot and a lot. Each semester we decide to achieve certain goals and do our best to reach them with each other. In this semester, we become more aware of how the work will be. Me and my team decide to work on achieving three goals that are: be more helpful in the team including listen more to each other and show all our ideas and discuss it carefully. The second goal is do more than our best to get an idea out of the box. Each semester, all the groups get their ideas from last or prior ideas but not out of the box. They just modify it or adjust it and sometimes their idea had been already applied. But this semester, our group decide not to do that. We already came up with an idea that is very modern and effective to our problem. Our third goal is help other groups through materials, ideas and sometimes we go and help them solving their problems to do their work better. And the most one that I hope to achieve is the third one. Which will help in spread our ideas more and more.

**A common misconception in our stem schools is that the test plan is the same as the actual testing you conduct. A test plan is the written plan prepared before the test is conducted. After you have written a test plan, you carry out the tests and collect data. What is your test plan for this semester? Why did you choose that plan? \*BLUE**

For any device or prototype, to know if it is effective or not, we must do tests on it. We must test our prototype through which we know if it really meets our design requirements and achieve it or not. This semester our prototype is designed to solve the problem of microplastics. it must remove the microplastics found in water. And then we use these microplastics and recycle it into another thing that we benefit from it. our test plan will be that we get some plastic in the size range from microplastic to 4 mm. and then we test our prototype in removing these microplastics. by comparing the amount of microplastics found in the water before filtering it with our prototype and its amount after filtration with respect to time. In that way we test our prototype efficiency. To test our prototype cost, we compare its cost with another one. Of course, we measure the size of microplastics removed to specify the mechanism of our prototype. After that we check our water. To know if our water is clean or not after the filtration, we perform on it, we measure its (Ph). If it was close or equal to 7, then our prototype is effective and does not affect the water, so the water is clean. But if it less than 7 pointing to the zero value then it is acidic and if it is more than 7 pointing to 14 then it is basic and, in both cases, (acidic or basic) it is harm for the body and shouldn’t be drinker.

**CS.2.02 provide an example of do loop and explain it using analogies of processes associated with your capstone project for this semester. \*BLUE**

In this semester in computer science, we learn about loops. And know that it is used in repeating pattern. For example, if we want to repeat specific action for certain number of times in specific conditions, we use the loops. There are many types of loops, but we have learned three types which are (for loop, while loop and do loop) An example of do loop is: Int main () {Int S=1; Do (Print f S & S++) Return 0;} So this is a loop that prints the numbers from 1 to nonaffinity. In our project we can use do loop to repeat an action and it will be after the water reaches a certain heigh, a gate in our prototype will be close immediately and after certain time the gate will open and close when the water reaches a certain height. The process will work and repeat forever.

**Microplastics have been identified as a global environmental threat for terrestrial, aquatic ecosystems and human health. Agricultural soils receive microplastics from wastes. Furthermore, farmers who use natural fertilizers like sewage sludge and compost unintentionally apply the microplastic particles contained in these bio- solids. In biology (BI 2.01) you learned about genetically modified food. In case of adapting genetically modified food, will this help in preventing transferring microplastics from soil to human body or not? Explain why. \*BLUE**

This semester in biology, we have learned about Genetically modified food. Scientists have adapted organisms for more beneficial things and jobs needed to be in it. They cut genes in DNA from some organisms. These genes produce specific protein which they need in other organisms to perform special jobs in it. This process is called genetic engineering. And as we know Microplastics have been identified as a global environmental threat for terrestrial, aquatic ecosystems and human health. Agricultural soils receive Microplastics from wastes. Furthermore, farmers who use natural fertilizers like sewage sludge and compost unintentionally apply the Microplastic particles contained in these bio- solids. So, scientists work on creating a mutant enzyme and insert it in a bacterium to feed on microplastics. this enzyme breakdown the hydrocarbons in the plastics and make it in its original state. These bacteria use this original component as fuels. Scientists still working on this project and doing more experiments to know all the aspects of this genetically modifies bacteria. So, these bacteria will help in preventing transferring Microplastics from soil to human body through if we but these in the soil where farmers grow their crops or use their fertilizers, the bacteria will feed on these microplastics and thus the crops will not contain them.