

Essays

1. What challenges you face while you are learning in school and what would you like to do different? Please provide examples from your experiences.

*

Some challenges which stand against me are the style of summative assessments. While learning for summative assessments there is no fixed syllabus and hence every teacher teaches from a different style while following a different timeline. For me this is a great challenge because some teachers provide many helpful links and sources while others don't, because of this fellow students have direct access to helpful resources. The date of the summative IB also isn't fixed so students are only informed 2 weeks prior. These are two challenges I face while learning in school and some ways in which I would like to overcome these are firstly by improving on my research skills. Knowing how to research better will help me to find better sources more effectively, due to this I will be able to save time researching and spend time learning. This will also help me in my second problem which is time management. I feel I spend too much time trying to find sources compared to less time learning. Finding good sources will also improve the quality of knowledge which will eventually help me prepare. One such example is the grade 8 I&S summative, this summative was all about writing OPVL (Origin, Purpose, Value, Limitations) of sources. During the summative the most challenging and time consuming activity for me was to find 3 different sources on one topic. However after spending a good amount of time and settling on 3 sources I started to write my OPVL and it all went well. After submitting the document and getting feedback on it the only mistake was source choices, the teacher thought the sources weren't up to mark and hence he cut marks. This is just one example of how my inadequate research skills have been a challenge for me.

2. Has there been a challenging life incident which inspired you to grow and how did you overcome?

*

2 cups of coffee beside me, my fingers cried out for help and my body wanted to collapse. It was way past midnight and not having any energy left, I decided to do the one thing which seemed reasonable, sleep. I slept like a log, leaving important work behind. The next morning when I woke up with full consciousness realising that the election forms had already been sent out but my campaigning hadn't. Not wanting to cry over spilled milk I decided to make most of the time left and started calling everyone to elect me as the grade 7 sports council leader. Unfortunately that wasn't enough, I didn't get in and I was disheartened when I saw the results. I wanted to lecture my sleepy self and was very frustrated but still having some courage left, I decided to re-apply next year with triple the effort and 10 times the planning.

As soon as the sign up form for grade 8 SPOCO came out I filled it without second thought. This time I started campaigning right away instead of waiting for the last minute unlike last time. I made the campaigning video and prepared draft texts to be sent to everyone. The night before the election I had to finish campaigning by sending everyone messages. Halfway done with campaigning I suddenly got a catch in my back with the eternity of my body in agonizing pain. My eyes were burning, I wasn't able to sit up straight for more than 20 minutes and my body once again wanted to sleep, but I was determined to power through and let past Varish know that his learnings will not go to waste. I stayed up till 3 that night trusting the process and hoping all the hard work will pay off.

3. Create a 1- minute video to tell a problem that fascinates you and what kind of a solution/plan you have in mind. You may even upload a supporting presentation or deck if required.

*

<https://drive.google.com/file/d/1nYsxQdDLYiOeMCUfbtuRk8qxhnyikdba/view?usp=sharing>

Critical Thinking

1. Chocolate or strawberry

(a) A company produces surprise packs which all look identical, but some of them have chocolate candies while others have strawberry. People in the town like both equally - they take the pack daily and eat what they get. What proportion of chocolate versus strawberry candies should the company produce?

*

Response:

As people in the town have not shown preference for either chocolate candies or strawberry, the company may choose to produce surprise packs with equal proportion of chocolate versus strawberry. This sounds counter intuitive with regards to surprise packs situation, however the information provided clearly specifies that people "like both equally" and hence the response to produce chocolate versus strawberry "in equal" proportion.

Kindly note that there is no data provided with regards product positioning or marketing strategic. If the product is primarily positioned to deliver a particular product say chocolate candies, then to maintain surprise element the company should product much higher proportion of chocolate candies versus strawberry

The company should also consider various other factors before finalising the proportion viz

- Cost of production: In the order to maximize profits higher proportion of product with lower production cost should be produced
- Shelf life & logistics cost: It would appear that chocolate candies have higher product life versus strawberry candies. If this is a consideration that higher proportion can be chocolate candies
- Long term product positioning: This should be a very important consideration along with (a) other products sold by company and (b) competition product suite

It is not advisable to produce only chocolate candies or only strawberry candies as that would complete defeat the "surprise" element for consumer perspective

(b) Over time, the people in the town develop a craving for strawberry candies. So, they take a pack and eat what they get, but if they don't get a strawberry candy, they will take another pack and eat it, and so on, till they get their first strawberry candy. Then they eat it and stop for the day.

(i) Do you expect the company to produce more chocolate or strawberry candies now?

*

Response:

The company's marketing strategy for introducing surprise packs, seems to have worked well. They have been able to create excitement for the product and a reason for consumers to keep coming back and buy/eat more of their candies.

Pure commercial convention would suggest that the company should produce and push more of chocolate candies to achieve higher sales of candies.

(ii) Simulate using a toss of coin where heads represent chocolate candies and tails represent strawberry candies .

*

Response:

The probability of getting heads or tails is 50% when a coin is tossed. In real while it is possible that the number of heads or tails is higher as compared to other when a coin is tossed multiple times, however from mathematical perspective the probability is 50%.

Therefore, if candies are produced using tossing the coin simulation, it is highly likely that equal number of chocolates versus strawberry candies would be produced and sold.

(iii) What proportion of chocolate versus strawberry candies should the company produce now? Explain the result logically.

*

Response

The company should surely have higher proportion of chocolate candies versus strawberry candies due to

- Achieve higher overall sales: The company would therefore by increasing the production of chocolate, create lower of strawberry, which would result in higher value for consumer. The company would be able to monetise this situation by higher overall sales if candies. Thus, the company can apply the economic law of demand and supply to its advantage
- Retain novelty value of strawberry: It is clear from consumer behaviour that they favour strawberry candies over chocolate candies. Therefore, by reducing the proportion of strawberry candies to below 50% or less than 1 in 2 chances of getting a strawberry candy to retain an element of novelty for consumer

However, it is not easy to arrive an optimal proportion ie should company pack chocolate versus strawberry candies in the ratio of 99:1 or 90:10 or 75: 25. It would be advisable for the company to apply analytical tools, customer feedback, etc to before arriving the final proportion including:

- Ensure that customer continue to believe on their chance of getting a strawberry candy and hence continue to buy candies. By significantly reducing the probability say to 1% [in case of 99:1 ratio of chocolate versus strawberry), the customer might lose interest/hope of getting a strawberry candy and reduce/stop continuous consumption
- There is a point of marginal utility where the consumer does not feel motivated enough to continue consuming chocolate candies in the hope of getting a strawberry candy. The company needs to ensure that they are within this marginal utility point.
- The company could consider changing the proportion in a gradual manner ie they have start with 60: 40 or 75:25 for chocolate versus strawberry. This will enable them to assess impact or changes if any in consumer buying pattern
- The company may also consider increasing selling price of strawberry candies however that would be completely different marketing strategy and could also create other complications like consumer confusion, feeling of being charged higher for similar product, etc

As mentioned in one of the earlier response - the company should keep in consideration other factors like product positioning, product & distribution costs, brand impact, competitive behaviour

Note: This section is NOT a criterion for selection. Our aim is to gauge your prior knowledge and skills so we can design our program curriculum and projects accordingly.

There are three levels of answers: "Expert," "Average degree of familiarity," and "I haven't done it." You can choose 1 from among these 3 indicating your level of experience. If you want to describe it further, feel free to write down briefly about the same.

1. Do you have any prior experience with computer hardware? (E.g. Arduino, Rasbery Pi, etc.)

SelectExpert

Average degree of familiarity

I haven't done it

Select

Describe briefly

2. Have you built something? (E.g. Machine/ Robot/ etc.)

SelectExpert

Average degree of familiarity

I haven't done it

Select

Describe briefly

3. Do you have prior experience in programming?

SelectExpert

Average degree of familiarity

I haven't done it

Select

Describe briefly

4. Have you participated in a Tech competition or Hackathon? If yes, tell us about your experience.

SelectYes

No

Select

Describe briefly

Where did you hear about the Young Technology Scholars Program?

*

Anything else you want to tell us?

I have keen interest in understanding better about different streams of engineering and pursuing the same as a career.

As I go through from formative learning years, I am keen to understand maths and laws physics better. In the ever-evolving world, where only constant is change, I believe it is extremely important for every student to understand techniques of combining established principles of Maths & Science with ability to apply these for improving quality of our lives.

While reasonable focus and research has happened in the field of technology, I think this is still not completely understood. Technology is often confused with doing thing digitally or automation of a process. The scope of technology is not limited to business or physical applications and applies to all fields, including sports, media, job, etc.

The program will give me an opportunity to access and learn from best professors in the world. Listening to seasoned academicians who have real life experience of creating and being associated with powerful leaders from varied areas will enrich my understanding of the topic. It will provide me global perspective on topic and how economic and cultural differences in societies had led to evolution of modern-day technology.

2. Play the game of wordle for a few days. Send in your observations on how you think one should play the game. What is the strategy you would adopt to solve the puzzle in the minimum steps. You are allowed to play multiple games through online archives of wordle but arrive at your own thinking on how to play optimally.

After playing the game Wordle by The New York Times for a few days some tips and tricks I observed to complete the game easily are

Start off with a word with all different alphabets and preferably 1 or 2 vowels, some good examples which I like to use are Least, Arise and About. This creates a diversity of different alphabets which are likely to be present in the final word. Usually while using this technique 1 or 2 alphabets are revealed out of the 5.

Then depending on the number of words known with alphabets the person knows they can either guess a completely different word with all letters different or try to guess from the alphabets already found. Usually I try to find the word from the alphabets already found as it saves on chance however if I am not at all certain I guess another word with completely different alphabets

These are some strategies I use and have observed over the course of by 6 months of playing Wordle