**MIDDLE SCHOOL**

**EOUA May 2022**

**FEEDBACK AND FOLLOW UP**

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| **Subject** | **Sciences** | **Grade** | **MYP 1** | **Date** | **20.05.2022** | **Name** | **Janya Vishnudev** |

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| ***Comments by examiner:***  ***(Strengths and common errors)*** |
| **Strengths** – Criteria A & D questions were mostly well attempted.  **Common errors** – The following were a challenge:  Criterion B: Designing a suitable, safer and logical method.  Criterion C: Interpretation and quantification both need practice. |

**Question 1.**

Q3. Mr Burns was worried about the productivity levels of his employees at Springfield Nuclear power plant. He believes that the reason his employees are so unproductive is because they eat donuts all day long. Mr Burns carries out an investigation to test his curiosity.

1. ***State the Research question for your investigation***

How do donuts effect the productivity level of the employees working at Springfield Nuclear power plant?

1. ***Formulate*** a hypothesis based on the case (Crit B- ii)

**If** the employees working at Springfield Nuclear power plant eat donuts all day long **then** their productivity levels will decrease **because** the sugar in the donuts make the employees work slower

1. ***Outline*** the variables- (All 3 of them) (Crit B- iii)

**Independent Variable-** No. of Donuts eaten

**Dependent Variable-** Productivity of the employees working at Springfield Nuclear power plant

**Control Variables-** Type of donuts the employees eat, Number of donuts the employees eat, The age of the employees eating the donuts

1. ***Design*** an experiment to test your hypothesis ( Bullet your procedure) (Crit B- iv)
2. First, we gather all the materials we need to conduct this experiment. We would need 10 boxes of Dunkin Donut’s donuts, 20 employees working at Springfield Nuclear power plant, a stop watch and any task that is related to their jobs.
3. Once we have all our materials in place, we start the experiment by dividing the 20 employees into 2 groups of 10 (group A and group B)
4. Next we give the employees in group A a box of donuts each and ask them to eat it.
5. Once they have finished the donuts, we give both the groups the same task to complete.
6. As they are completing their tasks, we record the amount of time each group has taken to finish that task.
7. Lastly, we analyse the recorded results and see which group finished their task faster and then come to a conclusion of weather the donuts decrease the productivity levels of the workers or not.
8. **(Please Note- While performing this experiment, make sure to tie your hair and have your shoe laces tied too so that you do not trip or drop your hair in the donuts, also be careful while doing your assigned tasks and make sure to wear the safety gear required.)**

Q2. Well – known racer and inventor Johnny Slick has announced that he will come out of retirement to compete in this year’s Armchair Enviro – Challenge.

Slick will face his arch rival Flash Duster in the seated sprint event. The seated sprint will feature top competitors racing in custom – made wheeled armchairs.

These chairs must use renewable, non-polluting energy sources and must weigh exactly 45 Kg. Slick will pilot the “Slick Special “, a modified orange – speckled recliner that uses a solar – powered electric motor as energy source.

Flash Duster will compete in the “Comfort – One”, his newest custom – made armchair. Duster, after several months of relaxing in his armchair, weighs nearly twice as much as Slick. The race course has one steep downhill slope at the beginning and one small hill at the finish.

Slick, with complete confidence, said, “I will recline into an easy victory!

1. ***Describe*** two other possible renewable energy sources that Johnny Slick could use to provide energy to the “ Slick Special “. (Crit Ai, ii)

* Renewable energy is energy that can be created quickly and is present in abundance hence often used a lot for various different things.
* In this case, Johnny Slick could use Biomass energy to power the “ Slick Special “ since biomass energy is made of dead organisms making the process of providing energy faster than solar energy since the sun is not always shining. He could also use wind energy to power the “ Slick Special “ since it is a guaranteed source of energy and is very convenient to gain energy from.

b. As Slick and Flash close in on the finish line, they are moving at the same velocity. Who has the most kinetic energy? ***Explain*** your answer.( Crit A i)

* Kinetic energy is how much energy someone or something possess while they are in motion.
* In this case, Flash Duster has more kinetic energy than Johnny Slick since there is “one small hill at the finish” as mentioned in the case study and if Johnny Slick weighs half the amount Flash Duster weighs, then he will move at half the speed since once they both reach at the top of the hill, the one who weighs more will move faster making Flash Duster’s kinetic energy way more.

**Individual errors**

* Spellings
* Calculations