Project Proposal

Prepared by:

Katherine Kaye P. Delos Santos
KATHERINE KAYE P. DELOS SANTOS

G-11 PYTHAGORAS

Submitted to:

Ms. Ginalyn Manuel

General Mathematics Subject Teacher

December 14, 2021

Address: Y Zuño St., Poblacion B., Rosario, Batangas
Email: pvgmarosbats1946@gmail.com||pvgmarosbats@yahoo.com
Tel Nos: (043) 311-3927||774 3578

I. Introduction

Thinking of an environmental problem that will satisfy this proposal is difficult yet worth the effort. There are a lot of environmental problems in our community; however, this proposal will only discuss the improper waste disposal happening in the community. Improper waste disposal may be common; however, it is much more destructive than what you imagine because it is what causes other community disasters to occur, such as floods, clogged drainage, health issues, pollution, etc.

We cannot be just sitting in silence; we should act immediately. Thus, this proposal created a project that identifies solutions to the mentioned problem with the use of some knowledge in General Mathematics. The project will be named "Project G.I.V.E. and T.A.K.E." which have two meanings: the literal meaning and the acronym one. Literally, it means giving mathematical concepts in identifying environmental solutions to improper waste disposal and taking a waste-free environment. Meanwhile, the acronym "G.I.V.E" means G- General Mathematics I- in V- Voicing out the E- Environment, whereas "T.A.K.E." means T- Taking care A- And K- Keeping the E- Environment waste-free. Project G.I.V.E and T.A.K.E. is a solution-provider to the improper waste disposal which uses General Mathematics as its source. The mathematical concepts include functions, business mathematics, and logic. Rest assured that you will be provided enough information in this proposal as it provides mathematical solutions and concepts.

Project G.I.V.E and T.A.K.E. requires to be done so that the aforementioned environmental problem can be properly solved. Improper waste disposal can just be a simple community problem but it can also be a destructive one in the near future, and that is why Project G.I.V.E and T.A.K.E. is here to mitigate all the risks of the mentioned environmental issue using the concepts of General Mathematics.

II. Goals and Objectives

A proposal without a goal is like a journey without a destination. Hence, this section will talk about the goals and objectives of the project proposal. The Project G.I.V.E and T.A.K.E. aims:

- To provide effective solutions to improper waste disposal.
- To apply functions, business mathematics, and logic in identifying solutions to the mentioned community problem.

- To provide the community with a waste-free environment.
- To provide activities involved in the project where residents will be the ones that will participate.
- To ensure the welfare of the residents and the environment.

III. Proposal Narrative

Project G.I.V.E and T.A.K.E. is a solution-provider to improper waste disposal using the concepts in General Mathematics. It aims to provide activities that are helpful in identifying solutions to the mentioned environmental issue. The chosen people that will participate in the project are the residents of San Roque, Rosario, Batangas. This section will provide you the information on how the concepts in General Mathematics will be used.

A. Functions

Functions may just be a simple mathematical concept; however, they can be used in providing solutions to our project. As you may know, functions can be rational, inverse, exponential, and logarithmic. We will discuss each in relation to identifying solutions to improper waste disposal.

The first activity will be named "R.A.T.I.O.N.A.L. Movement", wherein we will be using rational functions in determining the number of areas that will be cleaned. The acronym means R- Rational A- Activity T- That I- Improper waste disposal is O- Operated and its N- Negative Impacts A- Are L- Looked up. This activity needs at least 20 volunteers to do this because after determining the number of areas that will be cleaned, they will proceed to do the cleaning. With this, we can use the rational function to know how many areas will be cleaned. Let's say that 20 people can finish one area in an hour. We can represent x as the hour (should not be zero though). With that, we can know how many areas they have finished or in formula form, $f(x)=\frac{20x}{x}$. For example, we want to know how many areas will be cleaned if we want to work for only 6 hours with 20 people. $f(6) = \frac{20(6)}{6} = \frac{120}{6}$ = 20 areas will be cleaned for 6 hours.

The background of Project G.I.V.E. and T.A.K.E can also be this next function —inverse. The next activity is the "Inverse Activity". It is an activity that is simple and can be done to all residents. It provides trashcans to rows of houses, which will be divided into two: biodegradable and non-biodegradable. It is an inverse activity where you throw your wastes in the right trashcan and the inverse of it is having a waste-free and sustainable environment.

Wastes increase if we do not have the time to pick up the trash immediately, so, what will happen is that it will continuously grow in the environment. We must know how wastes are increasing every day so that we are able to know the time and effort we are going to execute each day. In this, we may use the exponential function in determining the number of wastes that will increase tomorrow, one week from now, and one month from now. In other words, if we do not have the time to pick up the trashes on the ground right now, it will grow and increase into more trashes. Let us say that trash grows at a rate of 10% and the estimated number of trash today is 300. Note: We will use the growth factor formula 100% + (specified percent given) = (converted into decimal). In our situation, the growth factor will be 100% + 10%= 110%= 1.10

a) Tomorrow:

$f(x)= 300(1.10)^1$

$f(x)= 330$

Thus, there will be 330 trash tomorrow if we do not pick up the 300 trash today.

b) One week from now:

$f(x)= 300(1.10)^7$

$f(x)= 585$ (Rounded-off to whole number)

Hence, there will be 585 trash one week from now if we do not pick up the 300 trash today.

c) One month from now:

$f(x)= 300(1.10)^{30}$

$f(x)= 5,235$ (Rounded-off to whole number)

Therefore, there will be 5,235 trash one month from now if we do not pick up the 300 trash today.

Now, if there will be 330 trash tomorrow, 585 one week from now and 5,235 one month from now, we must lessen these by having an activity named "Environment Promoter", where people can donate

materials such as broom, dustpans, garbage bags, trashcan, gloves, etc., that will be used in picking up the trashes on the ground.

We may also use logarithms in identifying solutions to improper waste disposal! In this part, it can provide an estimation of months when improper waste disposal will be finished where by providing it, it will ensure more success rate to the project. This activity is named "Logari-green Action" where it does not only inform the residents when the community will be clean and green but also convince them to act in order to achieve a zero-waste environment.

B. Business Mathematics

Aside from functions, business mathematics can also identify solutions to improper waste disposal. We will not just have volunteers, but violators. Project G.I.V.E and T.A.K.E also provides an activity named, "Violators' BM Act". BM stands for Business Mathematics. The violators, or those that will be seen throwing wastes improperly, will pay a fine that can be useful in two ways: for the community's own loan corporation and for the community's financial bank. The fine that will be collected can be a reason to have loan corporations where there will be assigned interests in every amount. It will lend money to the public that is having the desired interest rate. Here, the type of interest that can be fair for the borrowers is simple interest. Loans can be for renting a house, utilities, or community materials. As you may know, you can use the formula "I=Prt" in finding the interest, principal amount, rate, or time. Furthermore, simple and general annuities can also be involved in having a loan corporation. Moreover, there will be community's own financial investment bank account where investment will happen. Suppose that we invest Php 3,000 from the violators to our community's account and we want to know the value of our amount after 3 years having 10% annual interest compounded monthly. We can use the formula for computing the future value of a compound interest, which is $F=P(1+\frac{r}{k})^{kt}$. $F=$ Php 3,000 $(1+\frac{0.10}{12})^{12(3)}$ → F = Php 3,000 $(1.00\overline{8333333})^{36}$ → F = Php3,000 (1.348181842) → F = Php 4, 044. 55. After three years, we will have Php 4, 044.55 on our account. This shall not be used for personal purposes, but for the community's improvement.

IV. Conclusion (Logic)

Project G.I.V.E. and T.A.K.E aims for a waste-free environment and the concepts of General Mathematics are there to help provide effective solutions. This project proposal includes activities such as R.A.T.I.O.N.A.L. Movement (cleaning of areas), Inverse Activity (providing trashcans), Environment Promoter (donation of environment materials), Logari-Green Action (inform the residents about the environmental issue), and Violator's BM Act (community's own loan corporation and investment bank account). We all want to live in a healthy world and we can bring that world to us. The result of this proposal may either be the creation of a waste-free environment or the destruction of a sustainable one. It may either bring success if and only if we are going to cooperate with each other, or bring catastrophe. It is not the case that the environment is our enemy. We can bring to an end improper waste disposal if and only if we are going to join forces. If this proposal is accepted, then the activities mentioned have a 97% success rate. If the activities are successfully done, then we are going to have a zero-waste on the ground. We are going to have a zero-waste community if and only if we act together, work together, and pull together. It is not the case that either we do not care about the environment or we are apathetic to it. If you care for yourself, then you should also care for the environment, or you may want to live in an unstable society. If we are going to have unity, then we are having a waste-free community.