

**FEASIBILITY OF SOAP MADE  
OUT OF FRUITS AND VEGETABLES  
PEELS**

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## CHAPTER 1

### THE PROBLEM AND ITS BACKGROUND

#### INTRODUCTION

In this invention, we are making a soap made with fruit and vegetable peels and excess wastes such as their seeds and more. We plan to do this due to the enormous amount of waste on fruit and vegetables, especially their peels; to think of it, Peel can be useful too. To make this invention of ours, we start by collecting the peels and seeds and blending them. Then boil them to extract the flavors and nutrients from the peel. We also want to help people who can't afford expensive soap. They can also save money because, with the fruit and vegetable waste, they can make natural soap; they can also sell it and earn money. Fruit and vegetables are nature's wonderful gifts to mankind. It also has nutrients that can be good for our skin. The fruit and vegetable waste we made into soap so that he could use them again also represents a serious problem as they exert a harmful effect on the environment. It also has nutrients that can be good for our skin. It can also be used as a soap for the body, but it is not recommended for the face, the face is too sensitive, it might cause irritation on the face. it can be used as a body scrub because the vegetable peel is from the fruits that get nutrients to have smooth skin and make our skin healthy.

On our hands, soap eliminates germs rather than killing them. Grease and oils on our hands act as magnets for bacteria. Since water and oil don't get along, they won't combine, thus water alone won't be able to get rid of many of the bacteria on our hands. But soap like both oil and water. Microbes, or germs, are present everywhere literally all over. On every surface, including your body, in the water, the land, and the air. The majority of microorganisms are benign, and some, like the ones that reside in our guts, are crucial to maintaining human health. However, there are some bacteria that can be problematic, and we would like not have these on or in our body. Soap is our first line of defense against those dangerous microorganisms.

Some of fruit and vegetable peel that we used, is **potato peel**, the abundance of Vitamin C in potato peels cure puffy eyes and clear Acne. **Carrot pee,l** laden with cellular regeneration quality, carrots peels reverse the sign of ageing. **Squash** is rich in beta-carotene, a plant pigment that is a vitamin A enabler and will bring a glow to your complexion. It is excellent for the skin and contributes to a healthy immune system. The antioxidant vitamins A and C it contains neutralise free radicals. In fruit peel we use **Banana pee,l** it packed with phenolic antioxidants, banana peel diminishes dark spots and tans. **Watermelon pee,l** it ampler water and vitamin B5

in watermelon peel keeps skin moisturized. **Orange peel**, bestowed with Vitamin C and A, cleanses the pores in skin.

Soap are one of our daily needs, particularly where usually use while bathing. It is used to removes bacteria and design to improve our skin health. Soap are very essential for our personal hygiene. We used them in order to wash our body specially our faces. Soap substance that when dissolved in water, passes the ability remove dirt from surfaces such as the human skin. It's very useful to our daily lifestyle, because bathing is the one of mostly important into our day, and soap our basically needs to it. It is also used to avoid acne to our faces, and to other part of our body. Prevented our body to other dirt that causing skin problems. We presenting our newly invention that soap made of fruit and vegetables Peel Soap.

We have demonstrated in the current study that soaps made from the Fruit peels that are discarded do well against the Study of skin bacteria's antibacterial properties. The soaps are also less susceptible to the introduction of dangerous substances and their derivatives, typically performed for the commercially prepared soaps. This soap also contains natural ingredients from the fruits, making them less damaging to human skin. The pH of every simple tested soaps is what makes the soap gentle on the skin. The phyto chemicals including terpenes, alkaloids, and saponins are present. fruit's contents may be seen, which may be why there are soaps.

## **STATEMENT OF THE PROBLEM**

The primary aim of this study is to give an idea of what can be done about the peels of fruits and vegetables at CITI GLOBAL COLLEGE It asks the following questions of the respondent:

1. What are the demographic profile of the respondents in terms of
  - A. Age
  - B. Gender
  - C. Strand
2. What are the personal reasons of the respondents for experimental soap?
3. It is acceptable that fruit and vegetable peels are the main product of making soap?

## STATEMENT OF HYPOTHESIS

This research is experimental in nature, just like our topic the students of grade 12 general academic strand to give an idea that fruit and vegetable waste can be used in making soap in CITI GLOBAL COLLEGE.

## SCOPE AND LIMITATION OF THE STUDY

The main focus of the study is the soap that can be made using fruit and vegetable peels that we originally thought were useless. The data gathering will be conducted with all Grade 12 students in the General Academic Strand (GAS) at CITI GLOBAL COLLEGE SANTA ROSA CAMPUS.

## SIGNIFICANCE OF THE STUDY

This study is significant for the following

**Student.** it helps them because they will have an idea of what can be done with fruit and vegetable peels.

**Parent.** can save money because they can make their own soap using their fruits and vegetables peels and they can also earn money from it because they can sell it or make it a small business.

**Researcher.** it will be a guide to useful ideas and even discover unique works with things we thought were useless

**Future** researchers. this is a great help for them because they will have a guide in their research

## OPERATIONAL DEFINITION OF TERMS

The following terms are defined based on their proposed use in the study in order to provide a thorough knowledge of its contents.

**SOAP.** Your skin feels fresh and clean after using soap to remove dirt and sweat from your body.

**QUALITY OF THE PRODUCT.** This soap can give you flawless glass skin plus you can save a ton of money because our product made up of natural essence of fruit and vegetable peel.

**APPEARANCE.** In this context, "fruit and vegetable peel soap" refers to the external qualities of fruit and vegetable peel, such as the effect, nutrients, and skin color.

**TEXTURE.** It refers to the smoothness or roughness of the soap.

**SMELL.** It's smell like plumeria pudica flowers

**FRUIT AND VEGETABLE PEEL SOAP.** It is processed of soap product.

## **KNOWLEDGE GAP TO BE FILLED**

This invention of ours, since we knew that this is our first time doing this, We encounter many ups and downs with this invention and we are also aware that we lack knowledge about our invention so we made sure and did a proper research for all the ingredients we are going to use. Finding nutritious fruit and vegetable wastes is kind of hard from what we expected but thankfully we found the perfect fruits and vegetable wastes that can give our product all the nutrients we need.

## **ASSUMPTION**

This research found that:

1. Peels from fruits and vegetables can be used to make soap.
2. The soap we made from fruit and vegetable peel can be turned into a small Business.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE AND STUDIES

#### THEORETICAL FRAMEWORK

**SOAP :** According to amrita (olabs) Soap are necessary for individual and societal health. They help us maintain our health and improve the quality of our surroundings while safely removing bacteria, filth, and other impurities. Fats, oils, or their fatty acids are used to make soap. Long chain fatty

acids are salts of sodium or potassium, and these are soaps. Triglycerides in fat and oil are transformed into soap and glycerol when they interact with aqueous NaOH or KOH. This process is known as esters' alkaline hydrolysis. The Saponification Process is the name given to this reaction since it results in the production of soap.

**FRUIT PEEL :** According to NUTRITION AND YOU Fruits' outer, protective layer is known as their peel or skin. The skin of some hard-shelled fruits, such pomegranates, passion fruits, mangosteen, etc., is typically referred to as the rind, while the skin of citrus fruits, like oranges, is more appropriately referred to as the peel (zest). It holds some of the essential health-beneficial components like dietary fiber and phytonutri that aid satisfy overall wellness in addition to shielding the edible area of the fruit from harsh environmental variables and micro and macro organisms.

According to Caryn Anderson, putting banana and orange peels in the compost pile could be the first thought that springs to mind. To replace the nutrients in the garden, organic items that have decomposed are composted. The method combines the advantages of organic fertilizer with those of reducing trash. To create balanced compost, two essential ingredient categories are required, as well as brown ingredients that increase the carbon content of the mixture, such as straw and dried leaves.

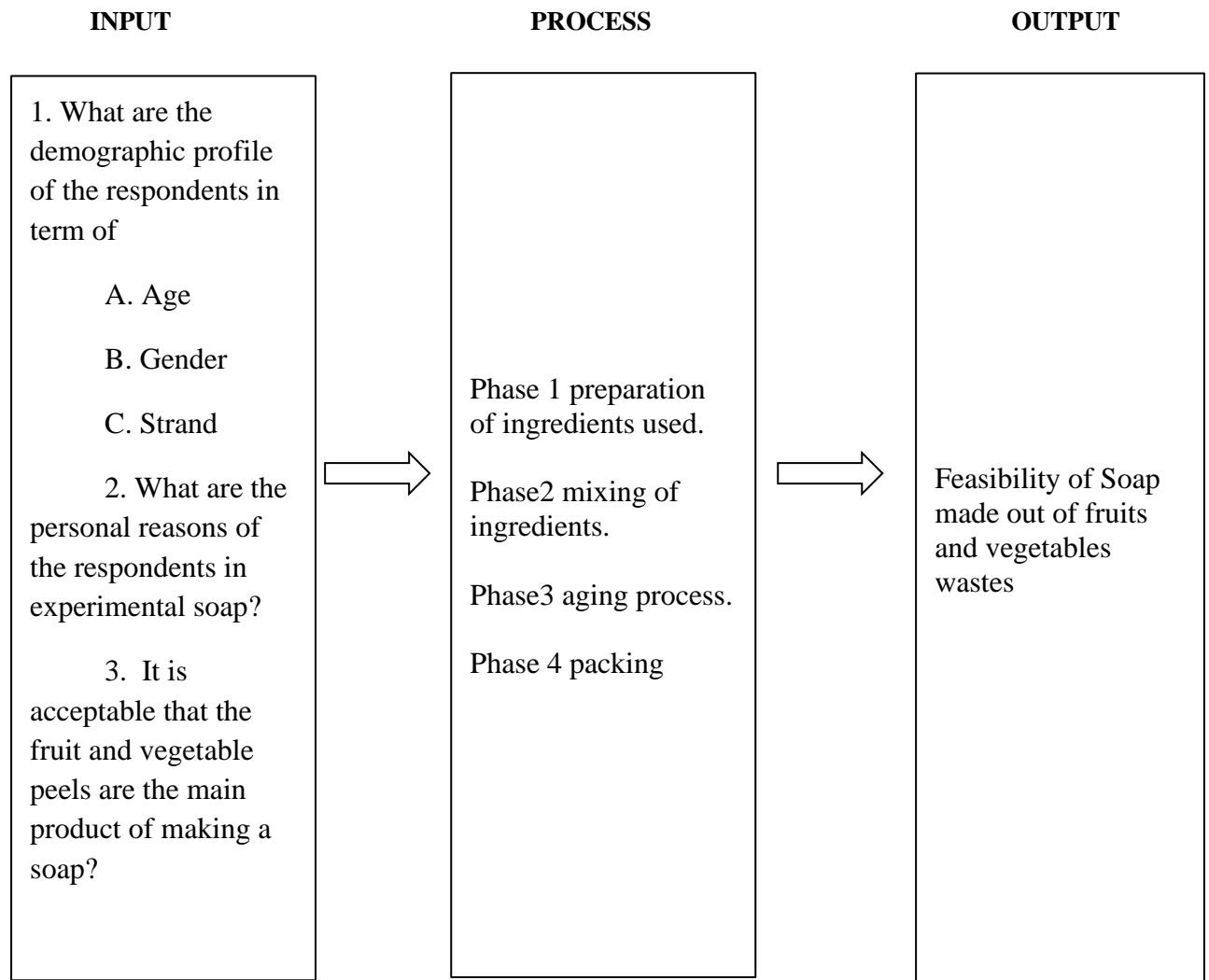
Essential oils included in fruit peels give the fruit its distinctive scent. There are oil glands everywhere throughout the peel, however they are concentrated more there. Citrus fruits like lemons and oranges have particularly developed oil glands.



**VEGETABLE PEEL** : According to their nature and cooking method, these foods are eaten raw, barely cooked, or thoroughly cooked. The production and processing of horticulture crops have increased dramatically to keep up with the growing demand brought on by changing dietary preferences and an expanding population. Fruit and vegetable-based companies, as well as domestic kitchens, produce a lot of peel waste, which has caused significant nutritional and monetary losses as well as environmental issues. Just the fruit and vegetable processing alone produces a lot of waste,

Accordingly to health line, Peels are among the most nutrient-dense components of a plant since they are high in fiber, vitamins, minerals, and antioxidants. Some fruits and vegetables have stiff peels that are either impossible to eat, difficult to digest, bitter, or both. It is advised to avoid eating these peels.

## CONCEPTUAL FRAMEWORK



### **CHAPTER 3**

This chapter present the research design, subject of the study, research instrument , scoring and the methods used gathering data.

#### **RESEARCH DESIGN:**

A descriptive research design includes gathering information that will serve as a description or account of a participant, a group, or a situation. The effectiveness of fruit and vegetable peel soap will be assessed using a questionnaire or survey form.

When conducting experimental research, a researcher alters factors and examines their effects. Fruit and vegetable peels are used to produce soap out of waste products.

#### **SUBJECT OF THE STUDY:**

30 students from a general academic strand of CITI GLOBAL COLLEGE participated in this research design. The views and comments of these 30 evaluators formed the basis of the good review of our fruit and vegetable waste soap, or what we called teen six soap based on an evaluation of the product using a rubric.

**RESEARCH INSTRUMENT:**

The evaluators used to adopt a rubric assessment tool to assess the three mixtures in terms of appearance, texture, and smell of the fruit and vegetable waste soap.

CRITERIA	EXCELLENT 5	VERY GOOD 4	GOOD 3	FAIR 2	POOR 1
SMELL	Perfect, Scent ingredients are well blended and mixed.	All indicators of excellent smell are observed except one.	All indicators of excellent smell are observed except two.	Almost all of the indicators are not present.	
TEXTURE	Soft, Refined and not Rough.	All indicators of excellent texture are observed except one.	All indicators of excellent texture are observed except two.	Rough.	
APPEARANCE	Brown in color and well prepared.	All indicators of excellent appearance are observed except one.	All indicators of excellent appearance are observed except two.	Almost all of the indicators of desirable appearance are not present.	

**LEGEND:**

Numerical Scale	Norm Scale	Descriptive Scale
4	3.5.4.0	Excellent
3	2.4.3.4	Very Good
2	1.5.2.5	Good
1	1.0.1.4	Poor

## **DATA GATHERING PROCEDURE:**

The researcher make of use of an google questionnaire. The questionnaire was used as an instrument to gather the data of the respondents about the said research. The researcher needs to made request in the adviser and ask the name of list of the student when the researcher got the list of the name of students the researcher will send the google form questionnaire to the respondents. Instrument used was originally constructed by the researchers. The respondents give an enough time to answer the survey questionnaire.

## **SAMPLING DESIGN**

Purposive sampling was used by the researcher to obtain 20 respondents. The respondents fill out a questionnaire from the researchers to determine how fruit and vegetable peels affect the body.

## **STATISTICAL TREATMENT:**

To answer the question raised in this study, the researcher used the following statistical tool.

**MEAN**, it was used to determine the acceptability of fruit and vegetables peel soap.

**STANDARD DEVIATION**, it was used to measure the variability of dispersion of a set of scores.

**ANNOVA** (Analysis of Variance), it was used to measure the mixture of fruit and vegetables waste soap.

## CHAPTER IV

### PRESENTATION, ANALYSIS AND INTERPRETATION DATA

This chapter demonstrates the data of this study's presentation, interpretation, and analysis.

In this chapter, the student researcher's analysis and interpretation of the data collected are presented together with the findings.

**TABLE : QUALITY OF FRUIT AND VEGETABLE PEEL SOAP IN TERMS OF SMELL,TEXTURE, APPEARANCE, EFFECTIVENESS.**

CRITERIA	CGC STUDENT		FAMILY MEMBERS		NEIGHBORHOOD		MEAN	DR
SMELL	4.3	VG	3.7	G	4.1	VG	4.03	VG
TEXTURE	4.1	VG	4.2	VG	4.1	VG	4.13	VG
APPEARANCE	4.1	VG	4.2	VG	3.8	G	4.1	VG
EFFECTIVENESS	3.8	G	4.1	VG	3.6	G	3.38	G
TOTAL MEAN	3.5	G	4.05	VG	3.39	G	4.02	VG

This table show the overall mean 4.02 distribution of the product fruit and vegetable peel soap. The highest mean score of the qualities came from CGC STUDENT descriptive as a VERY GOOD. In addition the overall ratings of the three group of evaluation appreciated the Fruit and vegetable peel soap.

## **CHAPTER V**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

This chapter summarizes the study's findings and draws conclusions from them and also the recommendations of researcher.

#### **SUMMARY**

This action research focused on the Preparation and Evaluation of Fruit and vegetable peel soap. It was conducted during the Second semester of S.Y 2022-2023. The data were supplied by (10) students, (10) family members and (10) neighbors. The first questionnaire was the main tool in gathering the data

#### **FINDINGS**

The result of the study showed that Fruit and vegetable peel soap was rated as Very "Good" in terms of Smell, Texture Appearance and effectiveness.

1. Texture has the highest overall mean which is 4.13 with a "Very Good" rating followed by Appearance which has a mean 4.1 with a rating of "Very Good" followed by Smell which has a mean of 4.03 with a rating of "Very Good" Followed by Lastly, the effectiveness which has a mean of 3.83 with a rating of "Good". A similar study may be conducted to validate the findings of the study.

#### **CONCLUSION**

Based on the findings, it is concluded that Fruit and vegetable peel can be used as a main ingredient in making soap. In addition, the overall ratings are good in terms of smell, appearance, texture, and effectiveness.

#### **RECOMMENDATION**

Based on the findings and conclusion derived from the study, the researchers recommend the following

1. Fruit and vegetable peel soap may be produced commercially.
2. A similar study may be conducted to validate the findings of the study.
3. Verification trials in both adults and teenagers are required to further support these findings.

## BIBLIOGRAPHY

### Online Reference

Saponification-The process of Making Soap (2016)

<https://amrita.olabs.edu.in/?sub=73&brch=3&sim=119&cnt=1>

fruit peel soap and its antibacterial properties in skin care (2019)

[https://www.researchgate.net/publication/333107198\\_FRUIT\\_PEEL\\_SOAP\\_AND\\_ITS\\_ANTI\\_BACTERIAL\\_PROPERTIES\\_IN\\_SKIN\\_CARE](https://www.researchgate.net/publication/333107198_FRUIT_PEEL_SOAP_AND_ITS_ANTI_BACTERIAL_PROPERTIES_IN_SKIN_CARE)

Fruit and Vegetable Peels: Utilization of High Value Horticultural Waste in Novel [Industrial Applications](#)(2020)<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7356603/>

Banana Peels and Orange Peels in the Garden (December 14, 2018)

<https://homeguides.sfgate.com/banana-peels-orange-peels-garden-31257.html>

fruit peel soap and its antibacterial properties in skin care (April 2019)

<https://sg.docworkspace.com/d/sIKmw4sSEAYjC9qAG?st=0t>



## QUESTIONERS

### FEASIBILITY OF SOAP MADE OUT OF FRUITS AND VEGETABLES PEELS

#### GOOD DAY RESPONDENTS!

**NAME:**

**Direction:** kindly mark the scale from (5) being excellent,(4) very good, (3) good, (2) fair and (1) poor base on what you observe in our Fruit and vegetable peel soap in terms of SMELL ,TEXTURE, APPEARANCE AND EFFECTIVENESS.

CRITERIA	EXCELLENT (5)	VERY GOOD (4)	GOOD (3)	FAIR (2)	POOR (1)
SMELL					
TEXTURE					
APPEARANCE					
EFFECTIVENESS					

## **PROCEDURE OF MAKING FRUIT AND VAGETABLE PEEL SOAP**

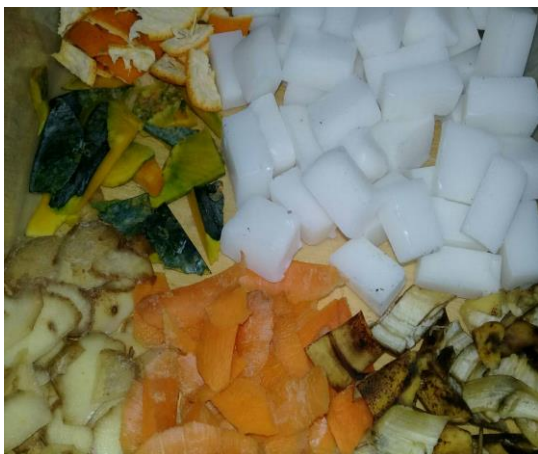
### **STEP 1**

Gather all the Ingredients and equipment.



### **STEP 2**

Once you gather all the Ingredients and equipments you need, you wanna start off by slicing the fruit and vegetable peels or you can also use a blender if you have one. After slicing your fruit and vegetable peel, now you proceed by slicing your soap base into small pieces.



### **STEP 3**

You can now melt the soap base in a double boiler.



### **STEP 4**

Next you can add your fruit and vegetable peel on melted soap base, And boil until the juice of the skin of fruits and vegetables comes out.



#### **STEP 4**

Then filter it using a strainer.



#### **STEP 5**

And finally put it in molder and wait for it to harden.

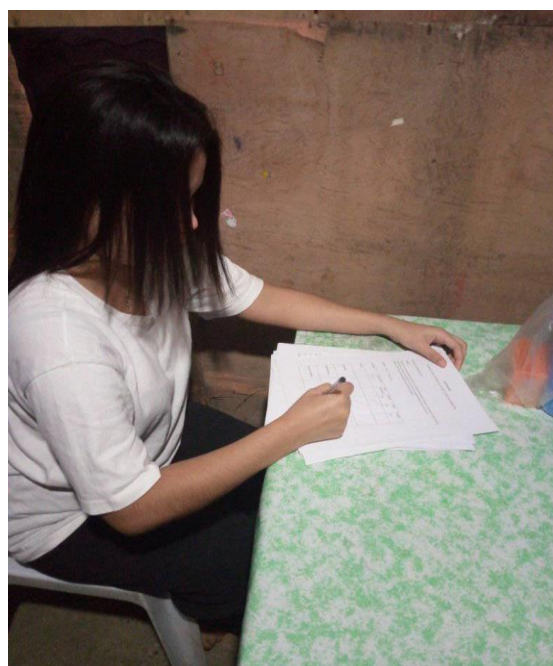


**FINISH PRODUCT!!**



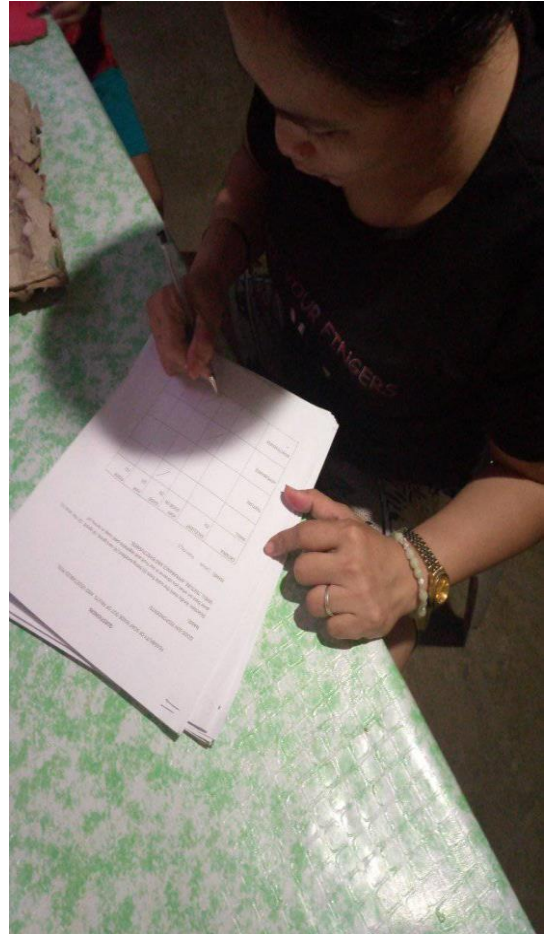
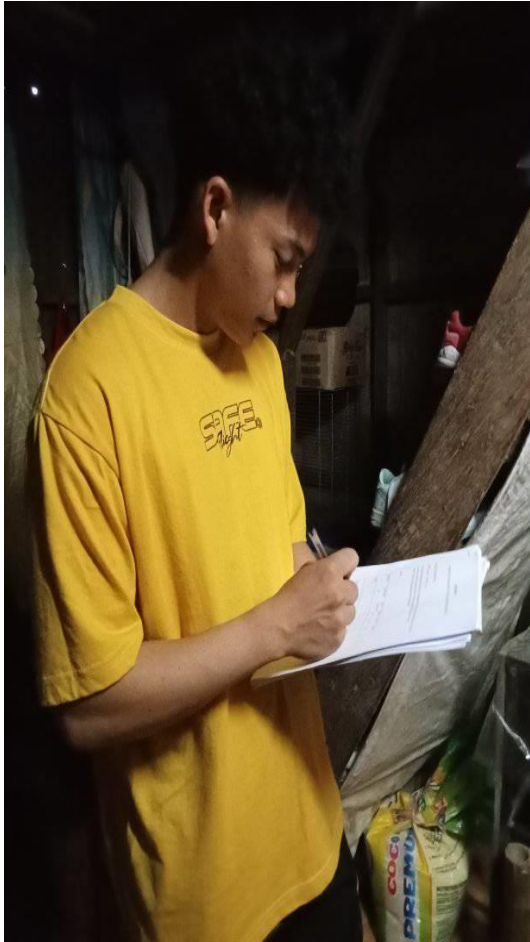
# **SURVEY DOCUMENTATION**

## **FAMILY MEMBERS**

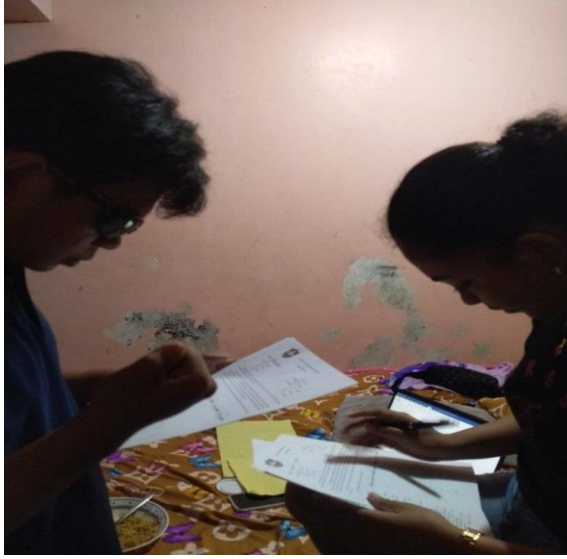




## NEIGHBORS



## CGC STUDENTS





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### **PERSONAL INFORMATION**

**NICKNAME:** Gel

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**FATHER'S NAME:** Gerardo M. De Leon

**MOTHER'S NAME:** Janneth M. De Leon

### **EDUCATIONAL BACKGROUND**

#### **EDUCATION**

#### **PERIOD**

**ELEMENTARY:** Southville 4 Elementary School  
2017

SY. 2010-

**JUNIOR HIGH SCHOOL :** Southville 4 national High School  
2021

SY.2017-

**SENIOR HIGH SCHOOL :** CITI Global College  
2023

SY. 2021-

#### **SKILLS:**

- Creativity
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# **ERIKA M. AVALON**

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## **EDUCATIONAL BACKGROUND**

<b>Education</b>	<b>Period</b>
<b>ELEMENTARY:</b> Southville4 Elementary school	SY. 2010-
2017	
<b>JUNIOR HIGH SCHOOL :</b> Southville4 National High School	SY. 2017-
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- Communication
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**CIVIL STATUS:** Single

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### **EDUCATIONAL BACKGROUND**

#### **Education**

#### **Period**

**ELEMENTARY:** Special Science Elementary School Central III

SY. 2010-2012

**JUNIOR HIGH SCHOOL :** Applied Academic for Excellence

SY.2017-2021

**SENIOR HIGH SCHOOL :** CITI Global College

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- Computer Literate
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- Painting
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### **PERSONAL INFORMATION**

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**FATHER'S NAME:**Alberto Moldez Bulong II

**MOTHER'S NAME:**Maribeth Moldes Bulong

### **EDUCATIONAL BACKGROUND**

Education	Period
<b>ELEMENTARY:</b> Macabling Elementary School	S.Y. 2010-
2017	
<b>JUNIOR HIGH SCHOOL:</b> Balibago integrated High School	S.Y. 2017-
2021	
<b>SENIOR HIGH SCHOOL :</b> CITI Global College	S.Y.2021-
2023	

**SKILLS:**

- Communication
- Creativity

# MORALES NARDWIN I.

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## PERSONAL INFORMATION

**NICKNAME:**nard

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**MOTHER'S NAME:**Nora I. Iporac

## EDUCATIONAL BACKGROUND

### Education

### Period

**ELEMENTARY:** Pulong santa cruz elementary school

S.Y. 2010-2017

**JUNIOR HIGH SCHOOL :** Pulog santa cruz national highschool

S.Y. 2017-2021

**SENIOR HIGH SCHOOL :** CITI Global College

S.Y.2021 -

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### SKILLS:

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# **KIMBERLY A. GABRIEL**

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## **PERSONAL INFORMATION**

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**FATHER'S NAME:** Junriel Gabriel

**MOTHER'S NAME:** Mary Jane Gabriel

## **EDUCATIONAL BACKGROUND**

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**ELEMENTARY:** Fatima Elementary School

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S.Y. 2017-2021

**SENIOR HIGH SCHOOL :** CITI Global College

S.Y.2021-

2023

### **SKILLS:**

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- Communication