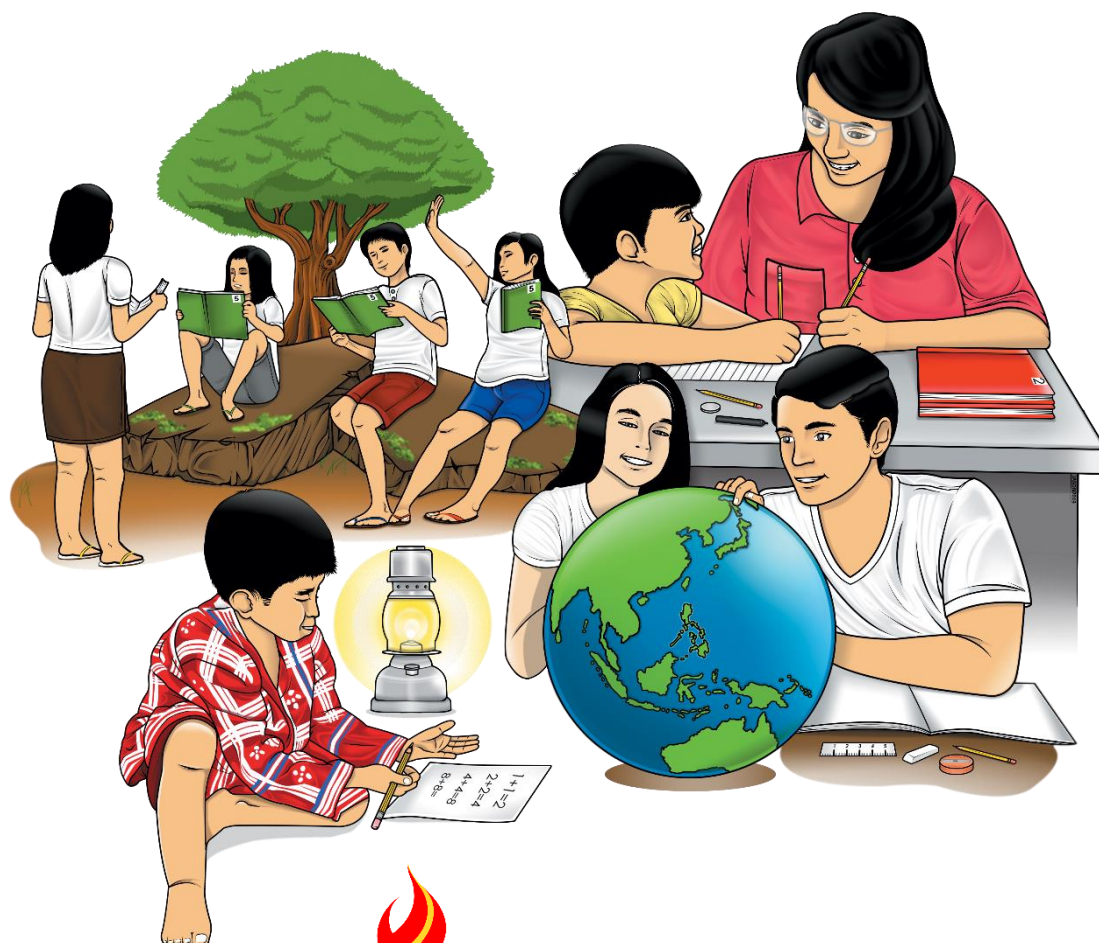


Health

Quarter 2 – Module 4: Malnutrition and Micronutrient Deficiency



Health – Grade 7
Alternative Delivery Mode
Quarter 2 – Module 4: Malnutrition and Micronutrient Deficiency
First Edition, 2020

Republic Act 8293, section 176 states that: No copyright shall subsist in any work of the Government of the Philippines. However, prior approval of the government agency or office wherein the work is created shall be necessary for exploitation of such work for profit. Such agency or office may, among other things, impose as a condition the payment of royalties.

Borrowed materials (i.e., songs, stories, poems, pictures, photos, brand names, trademarks, etc.) included in this module are owned by their respective copyright holders. Every effort has been exerted to locate and seek permission to use these materials from their respective copyright owners. The publisher and authors do not represent nor claim ownership over them.

Published by the Department of Education
Secretary: Leonor Magtolis Briones
Undersecretary: Diosdado M. San Antonio

Development Team of the Module

Writers: Elsa M. Gonzales

Editors: Orly A. Orsos, Ma. Rubynita T. Del Rosario, Raizza Marie R. Buñag,
Elizabeth T. Delas Alas, Ferdinand J. Gotoy, Maria Salvacion P. Villanueva

Reviewer: Laarni G. Palasigue

Illustrator: Danne Robin M. Ramos

Layout Artist: Ma. Rubynita T. Del Rosario, Maribel B. Zamora, Marvy R. Villamor

Learning Resource Evaluators:

Content Evaluators: Jennifer L. Oliver, Jayne Cerise G. Ical

Language Evaluators: Baby Joy O. Atienza, Darwin A. Muleta

Design Evaluator: Mark Angelo A. Dacayanan, Marvy R. Villamor

Management Team: Benjamin D. Paragas
Mirafior B. Musa
Freddie Rey R. Ramirez
Danilo C. Padilla
Raquel P. Girao
Elizabeth T. Delas Alas
Ferdinand J. Gotoy

Printed in the Philippines by _____

Department of Education – MIMAROPA Region

Office Address: Meralco Ave., cor. St. Paul Road, Pasig City, Philippines

Telefax: 02-8631-4070

E-mail Address: mimaropa.region@deped.gov.ph

Health

Quarter 2 – Module 4: Malnutrition and Micronutrient Deficiency

Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



What I Need to Know

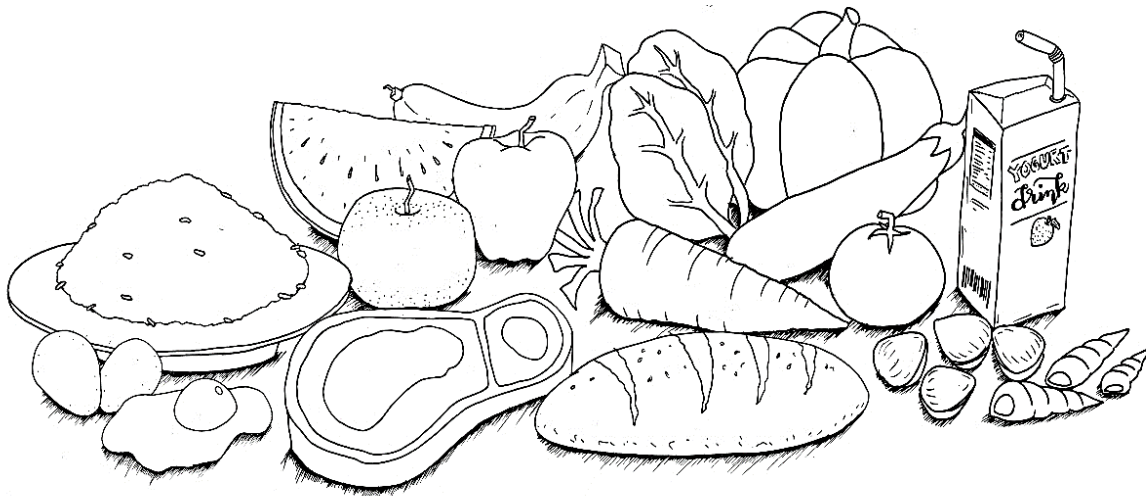
Eat well and live well! Nutrition addresses the importance of eating healthy and establishing good nutritional practices to enhance health and prevent diseases. This module aims to describe the characteristics, signs and symptoms of malnutrition and micronutrient deficiencies. Likewise, it discusses the way to prevent and to control them.

The module focuses on this lesson;

- Lesson 1 – Nutrition: Malnutrition and Micronutrient Deficiency

After going through this module, you are expected to:

1. describe the characteristics, signs and symptoms of malnutrition and micronutrient deficiencies (*N7N-IId-f-23*)
2. discuss ways of preventing and controlling malnutrition and micronutrient deficiencies (*H7N-IId-f-24*)





What I Know

Part I: Multiple Choice

Directions: Choose the letter of the best answer. Write your answer in your activity notebook.

1. The condition wherein a person is not getting enough of the right food is called _____.
 - a. Micronutrient Deficiencies
 - b. Malnutrition
 - c. Nutrition
 - d. Deficiency

2. The vitamins and minerals that all human need to maintain strong bodies and mental sharpness, fight off diseases and bear healthy children are_____
 - a. Micronutrients
 - b. Junk Foods
 - c. Fruits and Vegetables
 - d. Bread

3. Which of the following diseases is caused by the deficiencies of vitamins and minerals in the diet?
 - a. Micronutrient Deficiencies
 - b. Malnutrition
 - c. Nutrition
 - d. Deficiency

4. Which disease is caused by the lack of Vitamin A?
 - a. Anemia
 - b. Night blindness
 - c. Rickets
 - d. Goiter

5. If Anna eats much and doesn't like doing active games, she will likely be_____?
- getting fat
 - getting thin
 - getting healthy
 - getting energized
6. Which of the following is one of the signs and symptoms of overnutrition?
- low blood pressure
 - obesity
 - lack of appetite
 - tiredness
7. Which of the following is the mark of the program that fortifies the manufactured processed food in our country?
- Sangkap Pinoy Seal
 - Halal Pinoy Seal
 - Pinoy Ako Seal
 - Kain Pinoy Seal
8. What particular government organizations conduct feeding program for malnourished children in public schools in the Philippines?
- DSWD/DOH
 - DSWD/DepEd
 - DPWH/DepEd
 - DOST/PAGASA
9. What government agency is in-charge in disseminating nutrition information and technology to the public?
- DepEd
 - DSWD
 - DOST
 - DTI
10. This act requires the addition of the iodine to all salt intended to eliminate micronutrient malnutrition in the country.
- Salt Iodization Act
 - Salt Happy Act
 - Salt for all
 - ASIN for all

Part II: Matching Type

Directions: Select the deficiency in Column B that matches to its corresponding disease on Column A. Write your answer in your activity notebook.

- | A | B |
|-----------------------------------|-------------------------------------|
| 1. Night blindness | A. Iodine Deficiency Disorder (IDD) |
| 2. Hypothyroidism | B. Vitamin A Deficiency (VAD) |
| 3. Anemia | C. Iron Deficiency Anemia |
| 4. Goiter | |
| 5. Mental Retardation to children | |

After checking the correct answer. You may now rate your performance using the rubric below.

SCORE	DESCRIPTION
13-15	VERY GOOD
8 -12	GOOD
5 – 7	FAIR
1-4	NEEDS IMPROVEMENT

Lesson

1

Nutrition: Malnutrition and Micronutrient Deficiency

Nutritional needs vary in each stage of life, so it is important to be healthy. Adolescence is one of the fastest growth periods in a person's life. Changes in this stage affect the body's nutritional needs.


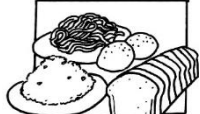

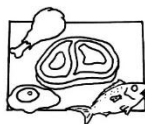



What's In

The Food Pyramid will guide you on how many servings from each food group is recommended daily. In this activity, your knowledge will be tested on the correct food group in the food pyramid.

Activity 1: Right Connection

Directions: Put the correct number of each food group that corresponds to its correct position on the food pyramid. Write your answer in your activity notebook.

1	_____		Fats, Oils and Sweets
2	_____		Cereals, Bread, Pasta and Rice
3	_____		Vegetables
4	_____		Meat, Poultry and Fish
5	_____		Fruits

After checking the correct answer, you may now rate your performance using the rubric below.

SCORE	DESCRIPTION	INDICATORS
4-5	STRONG	You really know and understand the food groups in the food pyramid
2-3	IMPROVING	You are to learn and understand the food groups in the food pyramid
0-2	DEVELOPING	There is still time to learn and understand the food groups in the food pyramid

Very well done! Knowing the proper food groups helps you identify the proper nutrition you need.

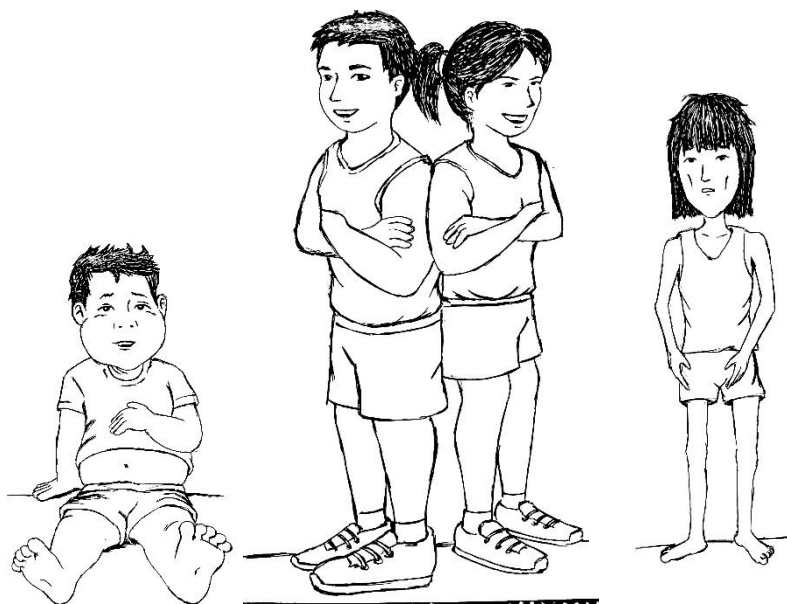


What's New

Activity 1: Let's Analyze

Malnutrition is characterized by lack, excess, or imbalance in nutrients. There are two forms of malnutrition: undernutrition and overnutrition. Now, in this activity, you are going to analyze the characteristics, signs, and symptoms of malnutrition.

Directions: Look at the pictures below. Analyze the appearance of each one and answer the questions in your activity notebook.





What is It

After a closer look at the four pictures, let us answer the following questions.

1. Who do you think among the four teenagers are considered healthy? Why do you say so?
2. Who do you think are eating properly? Why do you say so?
3. Who do you think among the four are suffering from malnutrition?

Is eating too much or eating less is considered malnutrition?

Do you know that?

- **Malnutrition** refers to a condition wherein person's energy and nutrition intake is not enough.
- Eating enough food that does not give the proper amount of micronutrients, vitamins and minerals to meet the daily nutritional need, will make you malnourished.

Do you know that there are two types of malnutrition?

- The picture below describes a type of over nutrition;
 - **Overnutrition** happens when you eat and gets nutritional requirements beyond the needed and ideal amount.

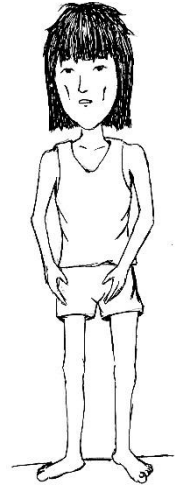


Here are some of the **signs and symptoms** of over nutrition:

- Obesity
- Diabetes
- High blood pressure
- Heart problems
- Difficulty in walking

- The picture below describes a type of undernutrition;
 - **Undernutrition** on the other hand is a condition wherein a person does not eat or take the daily needed nutrients and nutritional requirements leading to disease and deficiencies.

- **Signs and symptoms** of undernutrition include:
 - lack of appetite
 - tiredness
 - irritability
 - inability to concentrate
 - loss of body fat
 - higher risk of getting sick
 - longer healing time for wounds
 - depression
 - breathing difficulties
 - low blood pressure
 - bleeding or swollen gums



Malnutrition should be attended immediately. Here are some reasons why adolescents like you are malnourished:

- Poor eating practices/habits
- Poor food choices often influenced by peers
- Becoming conscious of the kinds and amounts of food they eat (i.e. females tend to eat less because of fear of becoming fat)
- School canteens and cafeterias serving less nutritious foods (i.e. chips, carbonated beverages, and artificial fruit juices)
- Not fond of drinking milk
- Low intake of iron and vitamin C-rich foods.

Now here are some reminders for you to eat right, so that you can prevent malnutrition:

- Always consider the Food Guide Pyramid.
- Decide on the serving you need.
- Follow good eating habits.
- Make healthy food choices.
- Be careful about the fat stored in food.
- Drink enough water daily.

Activity 2: What are your deficiencies?

In the next activity, you will be able to describe some of the most common micronutrient deficiencies.

Directions: Listed below are different diseases. Identify the deficiency that caused those diseases. Write your answer in your activity notebook.

Blindness	Anemia	Hypothyroidism
	Goiter	Mental Retardation
	Sickness and death to infants	

Vitamin A Deficiency	Iron Deficiency	Iodine Deficiency

After checking, evaluate your answer using the rubrics below.

SCORE	DESCRIPTION	INDICATORS
4-6	STRONG	You really know and understand micronutrient deficiencies
2-4	IMPROVING	You are to learn and understand micronutrient deficiencies.
0-2	DEVELOPING	There is still time to learn and understand micronutrient deficiencies

Very well done! Let us now talk more about micronutrient deficiency.

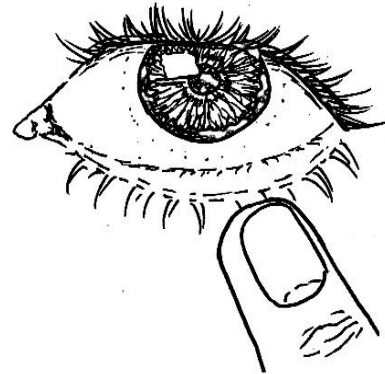
- **Micronutrients** also referred as vitamins and minerals that we all need to maintain healthy bodies, have mental sharpness, and prevent disease.
- Few foods contain micronutrient. People may have enough to eat but still do not consume micronutrient.
- **Micronutrient Deficiencies** is a kind of diseases caused by lack of vitamins or minerals in our diet that our body need for proper growth and development.

Below are the types of micronutrient deficiencies, their characteristics, signs and symptoms.

Vitamin A Deficiency (VAD)

It affects children and it causes night blindness that later becomes permanent blindness. A child suffering from VAD is prone to infections that contribute to high rates of sickness and death.

Some of its signs and symptoms are dry skin, dry eyes, night blindness, delayed growth, throat infections, poor wound healing, and acne breakout.



Iron Deficiency Anemia



A condition in which the red blood cell is less than normal. It affects adolescents especially girls and women. Anemia causes retarded physical growth, low resistance to infections, and slow development of learning abilities.

Some of its signs and symptoms are weakness, tiredness, paleness, slow cognitive and social development, dizziness, and lack of appetite.

Iodine Deficiency Disorder (IDD)

A condition caused by lack of iodine in the diet that is needed for production of thyroid hormones. The lack of this hormone causes developmental delay and brain damage.

Some of its signs and symptoms are; slow mental development, deafness, difficulty in looking in bright light, weakness, sleepiness, cold feeling, thick dry skin, difficulty in swallowing, bulging eyes, and enlargement of the thyroid in the lower front of the neck.

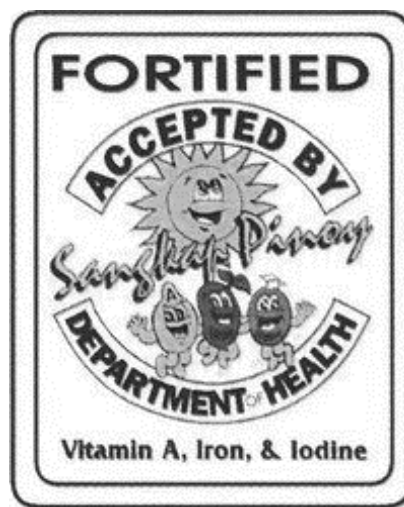


After we discussed malnutrition and micronutrient deficiencies and some ways to control and prevent them, we will now talk about the government initiatives to prevent these problems.

Philippine Food Fortification Act of 2000 addresses the micronutrient deficiencies problem in our country.

Republic Act 8976 fortifies rice, flour, refined sugar, and cooking oil.

Sangkap Pinoy program urges manufacturers of processed food to fortify their products.



Fortification of foods is one of the most cost-effective ways of our government to address malnutrition. It will supplement the insufficient diet of the people.

- **Act for Salt Iodization Nationwide (ASIN)** is an act that requires the addition of iodine to all salt used intended for animal and human consumption in order to eliminate micronutrient malnutrition. It is shortly known as the “*Salt Iodization Act*”.

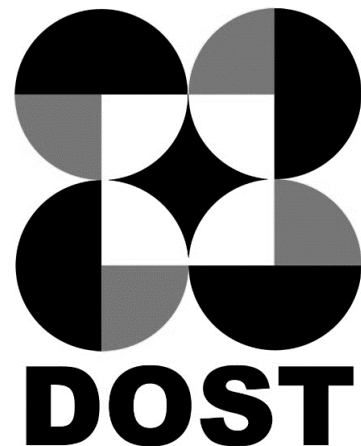
Even in school nowadays, there are programs and initiatives that address malnutrition. Some agencies are working with them to make these programs possible.

Here are some of the government agencies that work with the *Department of Education* (DepEd).



The *Department of Social Welfare and Development* (DSWD) is the primary government agency that conducts feeding programs for public schools in the country.

The *Department of Science and Technology* (DOST) is an agency that helps in government campaigns by disseminating nutrition information and technology to the public.



Food and Nutrition Research Institute (FNRI) is doing its share by featuring healthy and nutritious recipes for Filipino families to enjoy.



Food and Nutrition Research Institute
Department of Science and Technology



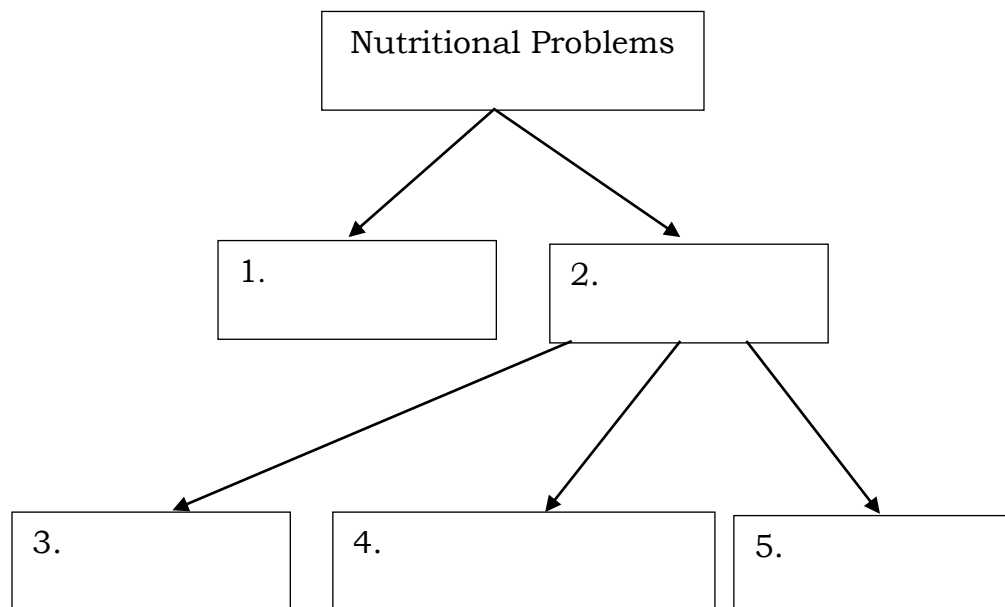
What's More

Activity 1: Map your thoughts

After discussing some Nutritional Problems during adolescence, this next activity will further test your understanding of the lesson.

Directions: Fill in the missing item of the chart. Choose your answer from the box below. Write your answer in your activity notebook.

Anorexia nervosa Malnutrition and micronutrient deficiencies
 Bulimia Compulsive eating disorder Eating disorders



After answering, evaluate your answer using the rubrics below.

SCORE	DESCRIPTION	INDICATORS
5	Very Good	You really know and understand nutritional problems among adolescence
4-3	Good	You need to learn and understand more about nutritional problems among adolescence.
2-1	Fair	You are to learn and understand the nutritional problems among adolescence.
0	Needs Improvement	There is still time to learn and understand nutritional problems among adolescence.

Activity 2: Text Twister

Now let's have another activity that will test your learning about malnutrition and micronutrient deficiencies.

Directions: Arrange the letters of each item to know the correct word(s). A hint is provided below. Write your answer in your activity notebook.

1.

M	L	A	T	R	I	N	U	T	O	N	I

Hint: It is a condition wherein a person is not getting enough of the right food.

2.

M	C	I	R	O	T	U	N	R	E	I	T	N	S

Hint: These are vitamins and minerals that all human need to maintain strong bodies and mental sharpness, fight off disease and bear healthy children.

3.

M	C	I	R	O	T	U	N	R	E	I	N	T		D	F	E	I	E	I	C	N	C	Y	

Hint: Disease caused by deficiencies of vitamins and minerals in the diet.

4.

B	I	L	N	D	S	E	N	S

Hint: What condition is caused by lack of Vitamin A?

5.

S	N	G	A	P	A	K		P	O	N	I	Y

Hint: Fortifies the manufactured processed food in our country.

6.

D	D	S	W

Hint: It is an agency that helps in disseminating nutrition information and technology to the public.

7.

S	L	A	T		I	D	O	I	A	Z	I	T	O	N		T	C	A

Hint: This act requires the addition of the iodine to all salt intended to eliminate micronutrient malnutrition in the country.

8.

O	E	B	I	T	S	Y

Hint: One of the main signs and symptoms of over nutrition.

9.

I	D	O	E	N	I		D	F	E	I	C	E	I	C	N	Y

Hint: It causes goiter and hypothyroidism.

10.

I	N	O	R		D	F	E	I	C	E	I	N	C	Y

Hint: It causes anemia.

Very Good! Now evaluate your answer using the rubrics below.

SCORE	DESCRIPTION	INDICATORS
8-10	Very Good	You really know and understand malnutrition and micronutrient deficiency.
5-7	Good	You need to learn and understand more about malnutrition and micronutrient deficiency.
2-4	Fair	You are to learn and understand malnutrition and micronutrient deficiency.
0-1	Needs Improvement	There is still time to learn and understand malnutrition and micronutrient deficiency.



What I Have Learned

Activity 1: Complete Me

In this activity, your knowledge and understanding about malnutrition and micronutrient deficiencies will be tested.

Directions: Complete the statement below. Choose your answer in the box below. Write your answer in your activity notebook.

sangkap pinoy
malnutrition
micronutrient deficiency
obesity
over nutrition

1. _____ is a nutritional problem wherein a person is not getting enough of the right food.
2. _____ are diseases caused by deficiency of vitamins or minerals in the diet.
3. _____ is one of the signs and symptoms of over nutrition.
4. _____ is a deficiency that causes night blindness that eventually leads to permanent blindness.
5. _____ a program that urges manufacturers of processed food to fortify their products.

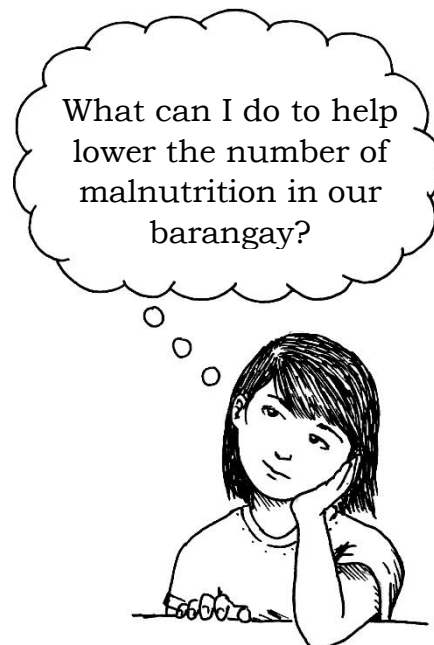
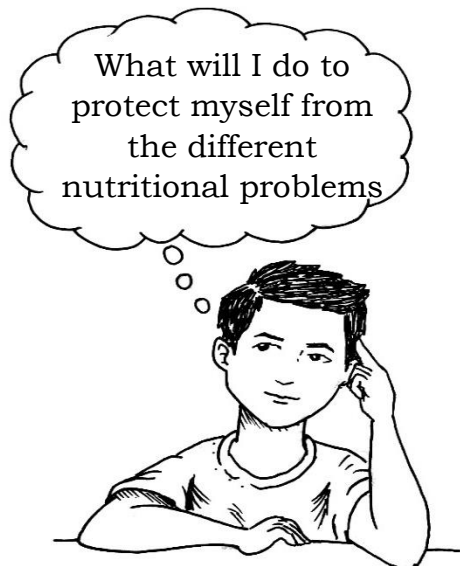


What I Can Do

Activity 1: Critical Thinking

You are now aware of the signs and symptoms of malnutrition and micronutrient deficiency. Let's have another activity that will strengthen your knowledge.

Directions: Imagine that you have a chance of giving solutions on how to decrease the number of malnutrition and micronutrient deficiencies in our country. Answer the question in each bubble and write it in your activity notebook.





Assessment

Part I: Multiple Choice

Directions: Choose the letter of the best answer. Write your answer in your activity notebook.

1. The condition wherein a person is not getting enough of the right food is called.
 - a. Micronutrient Deficiencies
 - b. Malnutrition
 - c. Nutrition
 - d. Deficiency

2. The vitamins and minerals that all human need to maintain strong bodies and mental sharpness, fight off disease and bear healthy children are_____.
 - a. Micronutrients
 - b. Junk Foods
 - c. Fruits and Vegetable
 - d. Bread

3. Which of the following diseases is caused by the deficiencies of vitamins and minerals in the diet?
 - a. Micronutrient Deficiencies
 - b. Malnutrition
 - c. Nutrition
 - d. Deficiency

4. Which disease is caused by the lack of Vitamin A?
 - a. Anemia
 - b. Night blindness
 - c. Rickets
 - d. Goiter

5. If Anna eats much and doesn't like doing active games, she will likely be_____?
 - a. getting fat
 - b. getting thin
 - c. getting healthy
 - d. getting energized

6. Which of the following is one of the signs and symptoms of overnutrition?
 - a. low blood pressure
 - b. obesity
 - c. lack of appetite
 - d. tiredness

7. Which if the following is the mark of the programs that fortifies the manufactured processed food in our country?
 - a. Sangkap Pinoy Seal
 - b. Pinoy Ako
 - c. Halal Seal
 - d. Kain Pinoy Seal

8. What government organizations conduct feeding program for malnourished children in public schools in the Philippines?
 - a. DSWD/DOH
 - b. DSWD/DepEd
 - c. DPWH/DepEd
 - d. DOST/PAGASA

9. What government agency is in-charge in disseminating nutrition information and technology to the public?
 - a. DepEd
 - b. DSWD
 - c. DOST
 - d. DTI

10. This act requires the addition of the iodine to all salt intended to eliminate micronutrient malnutrition in the country.
 - a. Salt Iodization Act
 - b. Salt Happy Act
 - c. Salt for all
 - d. ASIN for all

Part II: Matching Type

Directions: Select the deficiency in Column B that matches to its corresponding disease on Column A. Write your answer in your activity notebook.

- | A | B |
|-----------------------------------|-------------------------------------|
| 1. Night blindness | A. Iodine Deficiency Disorder (IDD) |
| 2. Hypothyroidism | B. Vitamin A Deficiency (VAD) |
| 3. Anemia | C. Iron Deficiency Anemia |
| 4. Goiter | |
| 5. Mental Retardation to children | |

After checking the correct answer. You may now rate your performance using the rubric below.

SCORE	DESCRIPTION
13-15	VERY GOOD
8 -12	GOOD
5 - 7	FAIR
1-4	NEEDS IMPROVEMENT



Additional Activities

Activity 1: Make a mark!

Now that you have learned everything about malnutrition and micronutrient deficiency. This activity will enhance your knowledge of the lesson.

Directions: Create a bookmark that contains your reflection about malnutrition and micronutrient deficiencies.

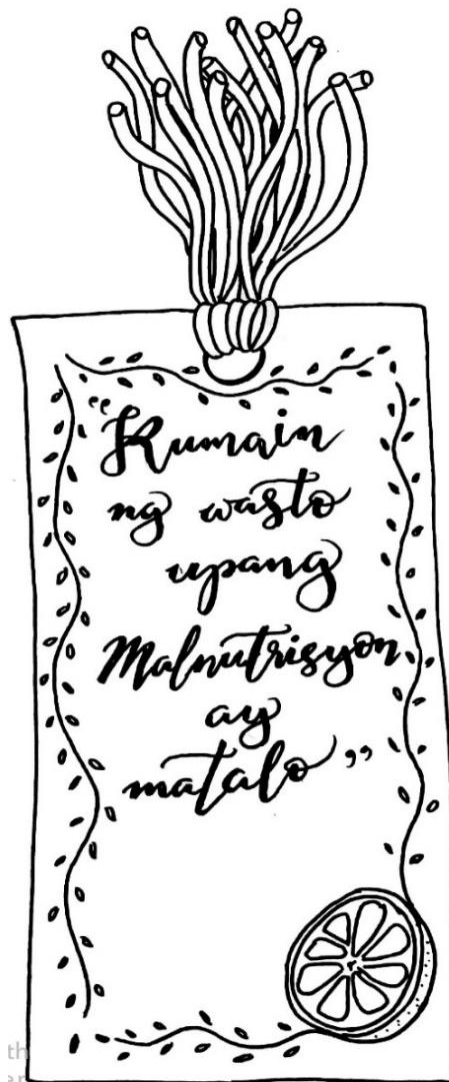
Materials Needed:

Colored Paper

Scissors

Yarn

Pentel Pen





Answer Key

<p>Assessment I. Multiple Choice 1. B 2. A 3. A 4. B 5. A 6. B 7. A 8. B 9. C 10. A II. Matching Type 1. B 2. A 3. C 4. A 5. A</p>	<p>What In Activity 1 Right Connection 1 4 3 2 3 4. B 5. A 6. B 7. A 8. B 9. C 10. A Activity 1 what's your deficiencies? Vitamin A Deficiency Blindness Sickness and death to infant Iron Deficiency Anemia Iodine Deficiency Disorder Hypothyroidism Goiter Mental Retardation What's More Activity 1 Map your thoughts Malnutrition and micronutrient deficiency Eating disorder Anorexia Bulimia Compulsive eating disorder (Number 1-5 can be in any order) Activity 2 Text Twister Malnutrition Micronutrients Blindness Sangkap Pinoy DSWD Salt Iodization Act Obesity Iodine Deficiency Iron Deficiency What I Have Learned Activity 1 Complete Me 1. Malnutrition 2. Micronutrient Deficiency 3. Obesity 4. Vitamin A Deficiency 5. Sangkap Pinoy</p>	<p>What I Know I. Multiple Choice 1. B 2. A 3. A 4. B 5. A 6. B 7. A 8. B 9. C 10. A II. Matching Type 1. B 2. A 3. C 4. A 5. A</p>
---	---	--

References

1. Department of Education. *Physical Education and Health Learner's Material*. Pasig City: Department of Education, 2017
2. Department of Education. *Physical Education and Health Teaching Guide*. Pasig City: Department of Education, 2017
3. Vera, Matt. "Food Fortification Program in the Philippines (RA 8976)." Accessed October 30, 2019. <https://nurseslabs.com/food-fortification-program/>
4. Bukas Palad Foundation of the Philippines Inc. "DSWD Logo". Accessed October 30, 2019. <https://bukaspaladfoundation.org/dswd-logo/>
5. Region 4B DOST. "Department of Science and Technology (Philippines)". Accessed September 1, 2020. <https://region4b.dost.gov.ph/histor-and-logo/>
6. iFNRI Food and Nutrition Research Institute Department of Science and Technology. Accessed October 30, 2019. <https://i.fnri.dost.gov.ph/>

For inquiries or feedback, please write or call:

Department of Education - Bureau of Learning Resources (DepEd-BLR)

Ground Floor, Bonifacio Bldg., DepEd Complex
Meralco Avenue, Pasig City, Philippines 1600

Telefax: (632) 8634-1072; 8634-1054; 8631-4985

Email Address: blr.lrqad@deped.gov.ph * blr.lrpd@deped.gov.ph