

GROW FOODS

LEARNING OBJECTIVES

By the end of this module, students should be able to:

- demonstrate a thorough understanding of the benefits of eating Grow foods of various kinds in the right proportions.
- advocate for healthier eating habits within the community by encouraging others to eat different kinds of Grow foods in the right proportions each day.

MATERIALS

Lesson 1

- video: **Module 3 Glow Foods**
- file: **GR06_M03_Lesson 1 Powerpoint**
- pad paper

Lesson 2

- pad paper
- bond paper (one sheet per small group of three or four students)
- coloring materials

Lesson 3

- *cartolina* (one sheet per large group of seven or eight students)
- coloring materials

Lesson 4

- Grow Foods Poll results (from previous lesson)

REMINDERS

Letters to the Parents

Each module comes with a letter to parents explaining the key points that our students are learning in class. The letter also encourages parents to model healthy nutrition habits at home. We hope that through these circulars, parents will become involved in their child's learning process. Please remember to photocopy and distribute the corresponding parent circular at the start of each module. These letters can be found in the folder marked 'Letters to Parents.'

Rubrics

Many of the activities in these modules serve as formative assessments for you to gauge each student's progress. You may use the PDF file named 'Rubrics' as a guide for grading major outputs and performance tasks.



MODULE OVERVIEW

Dear Teacher.

This Module Overview is a summary of the key learning points that we want our students to understand and master by the end of this module. These key learning points are presented in the video presentation and powerpoint that accompany this module. The supplementary activities further reinforce these key points.

KEY POINTS

1. Grow foods provide our bodies with protein. Protein is made of different building blocks called amino acids. Our body needs amino acids to grow big and strong. These amino acids also help wounds and injuries heal.
2. According to the Pinggang Pinoy® guide, approximately one-fourth of our plate should consist of proteins. There are many different sources of protein:
 - a. meat - pork, beef, chicken
 - b. seafood and fish
 - c. eggs
 - d. plant sources - *tokwa*, nuts, beans, legumes
 - e. milk and dairy products (e.g. yoghurt and cheese)
3. It is important that we get our protein from all of these different sources, and not just one or two, because different sources have different kinds of amino acids and additional nutrients such as vitamins and minerals. Eating different sources of protein raises your chances of getting all the amino acids that your body needs.
 - a. Complete proteins - contain all the amino acids needed by the body (e.g. egg, meat, fish, poultry, milk). These promote growth and development, and maintains life.
 - b. Partially complete proteins - contain some, but not all, amino acids needed by the body (e.g. legumes and nuts). These maintain life but not growth and development.
 - c. Incomplete proteins - contains very little amino acids needed by the body (e.g. gelatin). These cannot support neither life nor growth.

4. Listed below are common health effects of inadequate intake of Grow foods among children and adolescents. Eating the right amount of Grow foods in each meal can help prevent these health concerns:

- a. stunted growth
- b. poor wound healing
- c. brittle hair and nails
- d. poor muscle development
- e. weak immunity

5. Other nutrient deficiencies associated with a lack of Grow foods are:

a. Iron (iron deficiency anemia)

- i. Function: Iron is found in the blood which helps transport oxygen. Low iron results in low hemoglobin concentration in the blood. Hemoglobin is the component in blood that carries oxygen throughout the body for energy metabolism.
- ii. Signs and symptoms of deficiency: fatigue, weakness, pale skin, poor cognitive performance, impaired work performance and weak resistance to infectious diseases
- iii. Significant animal sources of iron: red meats, liver, fish, poultry, shellfish, eggs, legumes

b. Zinc (zinc deficiency)

- i. Function: normal taste, wound healing, sperm production, strengthens immunity and secondary sexual maturation
- ii. Signs and symptoms: stunted growth, delayed maturation of sexual organs, weak resistance to infectious diseases, hair loss, eye and skin lesions, and poor appetite. Chronic zinc deficiency may cause damage to the central nervous system and brain, and may lead to poor motor development and cognitive performance.
- iii. Significant animal sources of zinc: seafood (oyster and crab), beef, milk and dairy products (yoghurt, cheese), whole grain

c. Iodine (iodine deficiency disorder)

- i. Function: component in thyroid hormones which help regulate growth, development and metabolism
- ii. Signs and symptoms: enlargement of the thyroid gland (goiter), mental and physical retardation among infants and children
- iii. Significant sources of iodine: iodized salt, seafood, dairy products

d. Vitamin A

- i. Function: maintains clear vision, keeps skin smooth, helps in development of bones and teeth, strengthens immunity
- ii. Signs and symptoms of deficiency: night blindness (slow recovery of vision after flashes of bright light at night or inability to see in dim light), weak resistance to infectious diseases
- iii. Significant animal sources of vitamin A: fortified milk, cheese, eggs, liver

e. Vitamin B (B1, B2, B3, B6 and B12)

- i. Function: helps in energy metabolism
- ii. Signs and symptoms of deficiency: swollen tongue, irritated or inflamed corners of the mouth, fatigue, weakness, poor appetite
- iii. Significant sources of vitamin B: milk products (yogurt, cheese), liver, eggs, meat, poultry, fish

f. Vitamin E

- i. Function: antioxidant (a substance that prevents or delays some types of cell damage)
- ii. Signs and symptoms of deficiency: vitamin E deficiency is uncommon but deficiency can cause a type anemia
- iii. Significant animal sources of vitamin E: liver, egg yolks

g. Vitamin K

- i. Function: aids in blood clotting
- ii. Signs and symptoms of deficiency: hemorrhage (excessive bleeding)
- iii. Significant animal sources of vitamin K: liver, milk

6. We should do our part to promote healthier eating habits among family members, friends, and others in our community.

Lesson 1



LET'S GET STARTED



10 Mins.

1. Ask the students to write down in their Health notebook all the Grow foods they ate throughout the week. Have them count how many different protein sources they ate from the list below. For example, if they ate pork, chicken and eggs throughout the week, they ate THREE protein sources:
 - a. pork
 - b. chicken
 - c. beef
 - d. fish
 - e. other seafood
 - f. eggs
 - g. protein from plant sources - *tokwa*, nuts, legumes
2. Do a quick survey of how many students ate only one protein source, two protein sources, three protein sources, etc. Remind the students that our goal for each day is to eat as many different protein sources as possible to get a wide range of proteins and amino acids.
3. After finding out how many different protein sources your students ate in the past week, ask them to discuss their answers to these questions with a seatmate:
 - a. Why is it important to eat a variety of protein sources?
 - b. What happens to our bodies when we fail to include a variety of protein sources in our diet?
4. Give your students a few minutes to discuss, before directing their attention to the next activity.



WATCH & LEARN



15 Mins.

1. You will play the video for this lesson, **Module 3 Grow Foods**. Before playing the video, instruct your students to find a partner and bring out a sheet of pad paper. They should write their names on top of the paper.
2. Instruct the students to listen very carefully to the video and look for the answers to the following questions:
 - a. Why is it important to eat a variety of protein sources?
 - b. Name all sources of protein mentioned in the video.
 - c. What happens to our bodies when we fail to include a variety of protein sources in our diet?
3. After watching the video, each pair should write their answers on their paper.
4. After working in pairs, allow your students some time to compare their answers with another pair of students. While comparing answers, they should look for answers that they missed. They can add those to their own papers.
5. Ask the students to submit their papers. This activity is meant to help students identify gaps in their content knowledge, and at the same time, it will help you gauge which students may need additional support with the basic principles.



LISTEN & LEARN



25 Mins.

1. You will need the file **GR06_M03_Lesson 1 Powerpoint** for this lesson. Open the PDF file, and at the top menu bar, select VIEW > Enter Full Screen. This places one page of the PDF file on the computer screen, and you can scroll up or scroll down to go through each page like a powerpoint slide.
2. This lesson discusses the three types of protein (i.e. complete, partially complete and incomplete), as well as some nutrient deficiencies related to Grow foods.
3. As you go through each slide, make sure the students take down notes as they will need this information for the following lesson.
4. After showing all the slides, give students 3-4 minutes to compare their notes with their seatmates' notes. While comparing notes, they should look for key points in their seatmates' notes that they were not able to include in their own notes. They can add the points that they missed to their own notes.

Lesson 2



LET'S GET STARTED



15 Mins.

1. Ask the students to bring out one sheet of pad paper, and to write "Created by" at the top of the page. Beside "Created by" they should write their name.
2. On the second line, ask them to write "Answered by".
3. Start the lesson by challenging the students to construct their own 5-point quiz about Grow foods. Their quiz can include any fact or concept that they recall from the previous lesson.
4. Their quiz can have multiple choice, fill-in-the-blanks, or true-or-false questions. Make sure they work independently as they construct their quizzes, as this will also help you gauge what each student is able to recall from previous lessons.
5. After a few minutes, instruct the students to exchange papers with their seatmates. On the paper they receive, they should write their name beside "Answered by". Give the class a few more minutes to answer their classmate's quiz.
6. When all are done, instruct the students to return the quiz they answered to the student who created it. Each student will now check the answers of their classmates.
7. Collect each paper. After class, review each student's output to assess which students may need additional support with the basic principles or if any students have misconceptions about the lesson.



WHY GROW?



20 Mins.

1. Instruct the students to return to their original groupings (i.e. the grouping that consisted of three or four students) from Lesson 2 of the previous module.
2. Distribute one sheet of bond paper per small group and coloring materials. Tell the students that their task is to create a brochure designed to convince people why they must eat a variety of protein sources everyday.
3. Their brochure must:
 - a. provide information about the health benefits of protein and the types of protein sources (i.e. complete, partially complete, incomplete).

- b. provide information about the nutrients associated with protein and the related signs and symptoms of micronutrient deficiencies discussed in the previous session.
 - c. convince people to eat a wide variety of protein sources each day.
4. They can use their notes from the previous lessons to come up with compelling reasons for eating a variety of protein sources each day. For instance, they can discuss the differences between complete, partially complete and incomplete protein sources, or refer to the effects of micronutrient deficiencies, to justify why eating a variety of protein sources is needed.
 5. Ask some groups to share their brochures and demonstrate how they would use it to try and convince someone of the importance of eating a variety of Grow foods each day.



GROW FOODS POLL – PART 1



5 Mins.

Before dismissing the class, tell the students that each group will again conduct a survey among their friends, family members and others in their community.

1. They must ask at least ten individuals the following questions:
 - a. What happens when you do not get enough protein in your diet?
 - b. What nutrients do we get from proteins?
 - c. What sources of protein do you eat the most?
 - d. What sources of protein do you eat the least?
2. Each group must record their interviewees' responses to the survey. They should tally:
 - a. the different answers given by their interviewees for question (a).
 - b. the different nutrients that interviewees are able to name for question (b)
 - c. which protein sources are eaten most frequently.
 - d. which protein sources are eaten least frequently.
3. After asking the survey questions, each group must show their brochure to their interviewee and share the information in the brochure. (If possible, they should also take pictures for documentation purposes. Instruct the students to print out and keep these pictures, as they will be included in the culminating activity.)
4. Students should bring the results of this survey to class the following session.

Lesson 3



GROW FOODS POLL – PART 2

1. Instruct your students to join their group members in their larger grouping (i.e. the groups of seven to eight members). They will once again combine the results from their survey, and present their data using tables and graphs. For example, from among those interviewed, they can present:
 - a. a tally of the answers given for question (a), which reveals which consequences of a lack of protein intake are more widely known.
 - b. a list of the top five nutrients available in Grow foods that interviewees are able to name for question (b).
 - c. a frequency distribution or bar graph of the number of times each protein source was eaten.
2. After combining their data and planning out how they will present it, distribute a sheet of *cartolina* and some coloring materials to each group on which to place their tables, graphs, tallies and charts.

LET'S WRAP THIS UP

Call on some students to share with the rest of the class what struck them the most about the data they collected.

Lesson 4

GROW FOODS POLL - PRESENTATION

1. For this session, give the students more time to finish their Grow Foods Poll results. When all groups are done, ask the groups to share their results with the rest of the class.
2. Guide them to reflect on the implications of their data. For instance, you may ask them the following:
 - a. What consequences of a lack of protein intake do many people already know about? What consequences do people need more information on?
 - b. Which protein sources are popular among friends, family and community members? Which are not?
 - c. What nutrients are contained in the protein sources that are not popular among friends, family and community? How can we encourage friends, family and community members to consume more of these unpopular protein sources?
3. Remind the students that at the end of the program, they will review all their data to come up with a campaign to convince more people to develop healthier eating habits. In order for their campaign to be persuasive, it should be based on the data that they gather in the past two weeks and in the remaining weeks of the program.