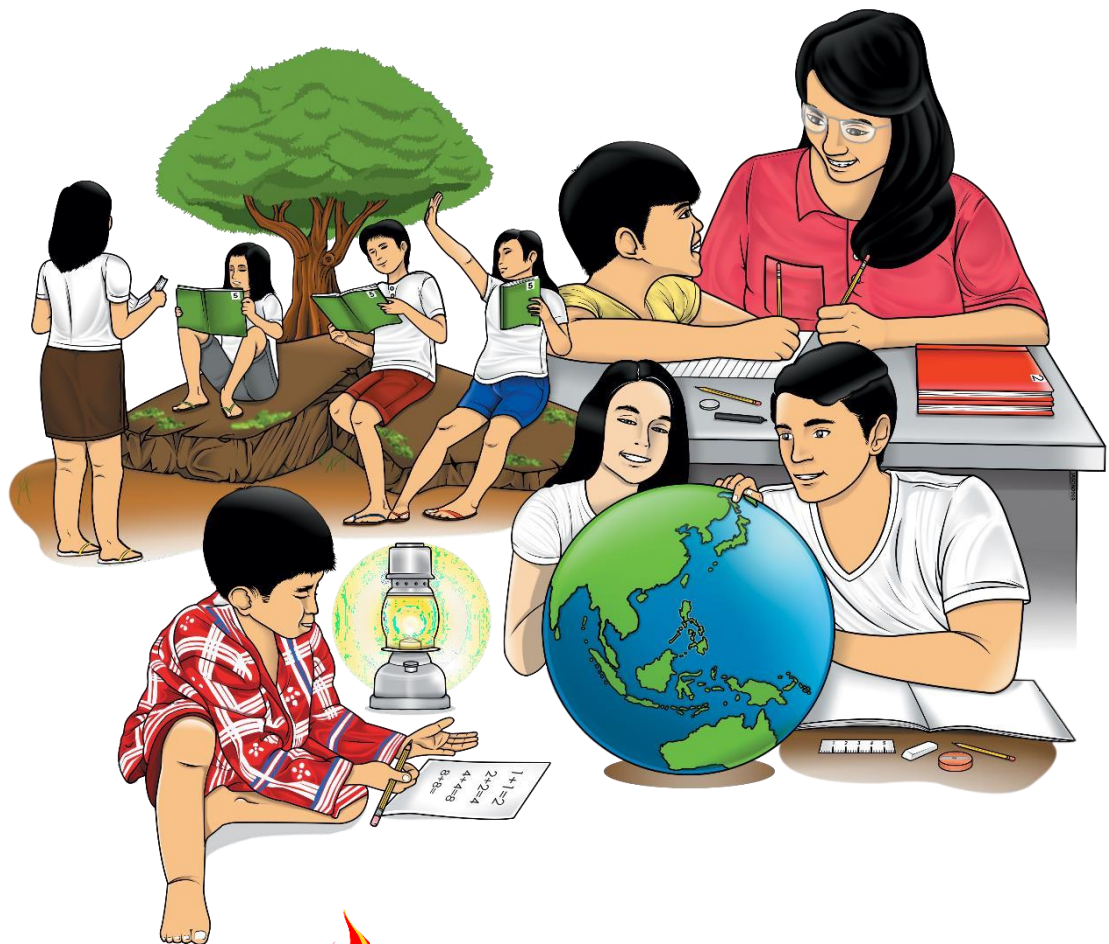


10

Physical Education

Quarter 1- Module 1: Strength Training



Physical Education- Grade 10
Alternative Delivery Mode
Quarter 1 – Module 1: Strength Training
First Edition, 2020

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10

Physical Education

Quarter 1 – Module 1:

Strength Training

Introductory Message

For the facilitator:

Welcome to the Physical **Education 10** Alternative Delivery Mode (ADM) Module on **Strength Training!**

This module was collaboratively designed, developed and reviewed by educators both from public and private institutions to assist you, the teacher or facilitator in helping the learners meet the standards set by the K to 12 Curriculum while overcoming their personal, social, and economic constraints in schooling.

This learning resource hopes to engage the learners into guided and independent learning activities at their own pace and time. Furthermore, this also aims to help learners acquire the needed 21st century skills while taking into consideration their needs and circumstances.

In addition to the material in the main text, you will also see this box in the body of the module:



Note to the Teacher

This contains helpful tips or strategies that will help you in guiding the learners.

As a facilitator, you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their own learning. Furthermore, you are expected to encourage and assist the learners as they do the tasks included in the module.

For the learner:












Welcome to the Physical Education Alternative Delivery Mode (ADM) Module on Strength Training!

The hand is one of the most symbolized parts of the human body. It is often used to depict skill, action and purpose. Through our hands we may learn, create and accomplish. Hence, the hand in this learning resource signifies that you as a learner is capable and empowered to successfully achieve the relevant competencies and skills at your own pace and time. Your academic success lies in your own hands!

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time.

You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts with their corresponding icons:

	<i>What I Need to Know</i>	This will give you an idea of the skills or competencies you are expected to learn in the module.
	<i>What I Know</i>	This part includes an activity that aims to check what you already know about the lesson to take. If you get all the answers correctly, you may decide to skip this module.
	<i>What's In</i>	This is a brief drill or review to help you link the current lesson with the previous one.
	<i>What's New</i>	In this portion, the new lesson will be introduced to you in various ways such as a story, a song, a poem, a problem opener, an activity or a situation.
	<i>What is It</i>	This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.
	<i>What's More</i>	This comprises activities for independent practice to strengthen your understanding and skills of the topic. You may check the answers in the exercises using the Answer Key at the end of the module.
	<i>What I Have Learned</i>	This includes questions or open-ended statements to be filled in to process what you learned from the lesson.
	<i>What I Can Do</i>	This section provides an activity which will help you transfer your new knowledge or skill into real life situations.
	<i>Assessment</i>	This is a task which aims to evaluate your level of mastery in achieving the learning competency.
	<i>Additional Activities</i>	In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned. This also develops retention of learned concepts.
	<i>Answer Key</i>	This contains answers to all activities in the module.

At the end of this module you will also find:

References

This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!



What I Need to Know

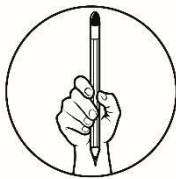
This module was specifically developed and designed to provide you fun and meaningful learning experience, with your own time and pace.

The module is divided into four lessons, namely:

- Lesson 1- Introduction to Strength Training
- Lesson 2- Strength Training
- Lesson 3- Development of Strength Training
- Lesson 4- Making it Part of Life

After going through this module, you are expected to:

- assess physical activity, exercise and eating habits; **PE10PF-Ia-h-39**
- engage in moderate to vigorous physical activities for at least 60 minutes a day in and out of school **PE10PF-Ib-h-45**; and
- express a sense of purpose and belongingness by participating in physical-related community services and programs **PE10PF-Ib-h-48**



What I Know

Directions: Select the letter that represents your best answer. Use your activity notebook in writing your answers.

1. How many hours is the most ideal time for an individual to engage in doing on-line activities?
A. 8 hours B. 6 hours C. 4 hours D. 2 hours
2. Which of the following is the best way to maintain an active lifestyle?
A. Reading books B. Using gadgets C. Watching TV D. Biking
3. Which of the following physical activities is the most convenient?
A. Brisk Walking B. Jogging C. Biking D. Running
4. What strengthening exercise requires the body to be lowered until the chest is approximately one fist off the ground then pushed off the ground to return to its original position?
A. Push up B. Superman C. Crunches D. Side Crunches
5. What strengthening exercise requires the body to proceed to prone lying position followed by lifting up both arms and legs?
A. Push up B. Superman C. Crunches D. Side Crunches

6. What do we call the number of repetitions or the full movement of exercise from starting point to finish?
 A. Rep B. Set C. Laps D. Cycle
7. Which of the following is the most ideal reps for lower body?
 A. 6-15 B. 6-9 C. 12-15 D. 15-25
8. What strengthening exercise is considered most helpful in burning fat in the stomach area?
 A. Push up B. Superman C. Crunches D. Side Crunches
9. What strengthening exercise can help in burning fat on the body sides or waist?
 A. Push up B. Superman C. Crunches D. Side Crunches
10. Among the given choices, what is the most effective exercise that can improve the muscles in the butt area?
 A. Crunches B. Side Crunches C. Squats D. Burpees
11. Which of the following statements is correct about strengthening exercises?
 A. It weakens the immune system
 B. The bones will just get tired and weak
 C. It aims to develop the circulatory system only
 D. It is both beneficial to muscle and bones for better mobilization.
12. What principle of exercise refers to the difficulty level of a work-out?
 A. Rep B. Frequency C. Intensity D. Set
13. Which of the following is not ideal rep for upper body?
 A. 6-15 B. 6-9 C. 12-15 D. 15-25
14. What do we call a group of repetitions?
 A. Start B. Point C. Rep D. Set
15. What strengthening exercise should you do if you want to tone your gluteus maximus?
 A. Push-ups B. Side Crunches C. Crunches D. Squats

Lesson

1

Introduction to Strength Training



Hi! How are you? Let us explore the different basic strength training activities. Are you ready? Come on!



What's In

Directions: Identify the different basic strength training activities by arranging the sets of letters provided before each statement.

U P S S H U P

1. The body is lowered until the chest is approximately one fist off the ground then pushed off the ground to return to its original position.

R E P U S N A M

2. It requires the body to proceed in prone lying position followed by lifting up both arms and legs.

S C R E N C U H

3. This strengthening exercise is helpful in burning fat to the stomach area.

E D I S S C R E N C U H

4. This exercise will help the body in burning fat to the sides or waist.

Q A U S S T

5. This activity can improve the muscles in the butt area.



What's New

Directions: The following questions will help you determine your physical activity preference. Use the scoring guide to help you assess your fitness level. Please answer the questions honestly. Use your activity notebook in writing your answers.

- How active were you during your P.E. classes?
A. Inactive B. Lightly Active C. Active D. Very Active
- In the past week, how many days were you active for at least 60 minutes?

- A. 0 B. 1-2 days C. 3-4 days D. 5 or more days

3. In the past week, how many days did you spend watching TV, playing video games or using your phone for more than 2 hours?

- A. 5 or more days B. 3-4 days C. 1-2 days D. 0

4. You complete the statement. In the past week, I spent most of my leisure time_____.

- A. Reading books, watching TV, playing video games, surfing the net and sleeping
B. Helping with household chores, cleaning my room and running errands
C. Performing moderate intensity sports, games and dance
D. Performing high intensity sports, games and dance

5. For the past weeks, how many hours in a day did you spend playing video games or surfing the net?

- A. More than 4 hours B. 3-4 hours C. 1-2 hours D. 30 min.

6. How many hours of your weekend did you spend in doing high intensity activities?

- A. More than 4 hours B. 3-4 hours C. 1-2 hours D. 30 min.

7. How many minutes of your PE class did you actually spend playing or dancing and moving?

- A. Less than 15 min. C. 31-45 minutes
B. 15-30 minutes D. More than 45 min

8. How would you classify your participation in various physical activities?

- A. Inactive B. Lightly Active C. Moderately Active D. Very Active

9. What is the best way to keep healthy if there is pandemic?

- A. Stay at home C. Go to the gym
B. Accomplish paper works D. Do work-out or exercise at home

10. How long can you endure on on-line class/ work / activity?

- A. 8 hours B. 6 hours C. 4 hours D. 2 hours

11. How many hours do you allocate for your exercise?

- A. 5 min. B. 15 min. C. 1 hour D. 3 hours

12. How do you define your lifestyle nowadays?

- A. Not-active B. Healthy C. Active D. Very Active

13. How many hours should we expose ourselves doing on-line activities?

- A. 8 hours B. 6 hours C. 4 hours D. 2 hours

14. Which of the following physical activities is the most convenient exercise for you?

- A. Reading Books B. Singing C. Dancing D. Walking

15. Which of the following physical activities is the most difficult exercise for you?

- A. Brisk Walking B. Jogging C. Biking D. Running

Scoring Guide

1. Equate the following points for each response to the questions above:
A=1-point, B= 2 points, C= 3 points, D= 4 points
2. Add all the points from each question.
3. Rate your score:
“Very Active” if your score is 30 and above
“Active” if your score is 19-29
“Less Active” if your score is 9-18.
“Inactive” if your score is lower than 17.
4. In your activity notebook, based from your score and your rating, write three things that you can improve on and explain why you choose those.

This activity was adapted from the book of Lualhati Fernando –Callo and Peter FerminDajijme. Physical Education and Health Volume I-



What is It

A. STRENGTH TRAINING

Strength training specializes in the inducement of muscular contraction through the use of free weights, weight machines, and resistance bands which builds the strength, size of skeletal muscles, and anaerobic endurance. It strengthens and increases the amount of muscle mass in the body by making the muscles work harder than they're used to. It improves overall health and well-being because the bones, muscles, tendons and ligaments are strengthened and toughened. It also increases metabolism, improves cardiac function, and elevates good cholesterol.

Strength *training* is most commonly seen as a weight-bearing activity. There are two terms concerning strength exercises: **Repetitions and sets**. A *rep* (repetition) is one full movement from starting point to finish. A *set* is a group of repetitions. The most basic training design is to have anywhere between 6 and 15 reps in a set, and performing 3 sets. Some people will go for 6 to 9 reps, some will go for 9-12 and some will go for 12-15 reps in a set. These numbers are for *upper body strength training*. The lower body reps must be anywhere between 15-25 reps also with an approximate of three sets.

Benefits of the Weight-Bearing Strength Training Exercises

With good strength training program, a learner will:

1. have an increase in muscle strength;
2. strengthen tendons and ligaments;
3. improve in range of motion joints;
4. have a reduction of body fat and increase in lean muscle mass;
5. potentially improve his/her blood pressure levels;
6. gain positive changes in levels of blood cholesterol;
7. gain an improvement in glucose tolerance and insulin sensitivity; and
8. gain overall strength, balance and functional ability.

B. PRECAUTIONARY MEASURES

Even if we are so concentrated in developing a healthy and active lifestyle, we still need to consider our safety. So bear in mind the following precautionary measures:

1. Before engaging yourself to the activity, warm up first through walking. After doing the exercise, cool down for five to ten minutes through stretching.
2. Align body correctly and move smoothly through each exercise. Focus on form, not weight. Poor form can cause injuries and slow gains. When learning a strength training routine, start with no weight, or very light weight, then concentrate on slow-smooth lifts and equally control descents while isolating a muscle group.
3. To be in control is to work at the right tempo. Take three counts while lowering a weight and hold, then count three again while raising it to the starting position.
4. Pay attention to your breathing during workouts. Exhale while working against resistance by lifting, pushing, or pulling and inhale at every release.
5. Keep challenging muscles by slowly increasing weight or resistance. The right weight differs depending on the exercise.
6. Stick with the routine. Working all the major muscles of the body two or three times a week is ideal.
7. Give time for muscles to recover too. Strength training causes tiny tears in muscle tissue. These tears aren't harmful, but they are important. Muscles grow stronger as the tears knit hours to recover before the next strength training session. Always give the muscles at least 48 hours to recover before the next strength training session.

C. FOOD REQUIREMENTS

The way we eat when we were children may strongly affect our eating behavior as adults. When we repeat this behavior over many years, it becomes a habit. Eating proper food and proper exercise should go hand in hand to achieve a healthy and active lifestyle.

Every year, many people check their general level of physical fitness. Some people choose to focus on increasing physical activity while others choose to begin eating healthy and nutritious food.

A combination of good exercise routine and consistent intake of balanced diet can help achieve a well-rounded health and fitness level.

Food and Nutrients

There are different dietary and nutritional requirements for each method used to increase levels of general fitness. The food that you eat serves as a fuel for your various activities.

Every year many people check on their general levels of fitness. A combination of good exercise routine and consistent healthy food intake can help someone achieve a well-rounded health and fitness program.

WATER- During exercise, evaporation is usually the primary mechanism of heat dissipation. Temperature rises rapidly if the body cannot adequately evaporate sweat from skin's surface. Continuous sweating might lead in losing valuable fluids from the reservoir within the body. The rate is being related to exercise intensity, individual differences, environmental conditions, acclimatization state, clothing, and baseline hydration status.



Eight or more glasses of water a day keep us hydrated.

CARBOHYDRATES- The majority of your diet must consist of healthy, natural carbohydrates. These should not come from sugar (even though sugar is packed with carbohydrates). Get your carbohydrates from natural sources such as rice and whole grains.



Rice is a good source of carbohydrates.

PROTEIN- Protein is very important if you add strength training to your aerobic routine. You need to consider protein to be an integral part of your diet. The amino acids that make up proteins are the small amount of acid that make every biological function of your body possible. For those trying to lose weight, diets high in protein and fiber are very likely to limit cravings and make you feel full faster and longer.



Pork is one good source of protein.

FRUITS and VEGETABLES- Make your plate filled with fruits and vegetables. Dark green, red, orange vegetables, have high levels of nutrients such as vitamin C, calcium, and fiber. Adding spinach or romaine lettuce and tomato to your sandwich is the easiest way to get more veggies in your meal



Tomatoes and eggplant are some of the nutritious food our body needs.

GRAINS- Choose whole grains, like whole-wheat bread, brown rice and oatmeal. It is also best to consume them with fruits.



Wheat bread is more advisable to eat.

DAIRY- If you are trying to build strong bones, drink fat-free or low-fat milk products. In some cases when you cannot digest lactose, there are alternatives that you can have like soy or rice milk and low-fat yogurt instead.



Milk builds strong bones.

PIZZA, CANDY, and FAST FOOD- You don't need to deprive yourself from eating these items. Eating less of them may help you maintain a healthy weight. Pizza, candy, fastfood, and sodas have a lot of added sugar, solid fats, and sodium which could be beneficial at some point especially when consumed in proper amount. A healthy eating plan should still be observed.



Pizza must be eaten in moderation.

ADDED SUGAR- Fruits are naturally sweet not like cookies, snack cakes, and brownies, which have added sugar to make them taste better. Sugar adds calories but has no nutrients so you need to have less intake or consumption of it.

Cookies have added sugar thus, these must be consumed in moderation.



SOLID FATS- Fat helps your body grow and develop. It is a source of energy and it even keeps your skin and hair healthy. But some fats are better for you than others. Solid fats are fats that are solid at room temperature, like butter, stick margarine, shortening and lard. They often contain saturated trans fat, which is high in calories and not healthy for the heart so be easy on cakes, cookies, pizza and fries which often have a lot of solid fat.



Margarine is an example of solid fats.

SODIUM- Your body needs a small amount of sodium. But, consuming too much of this can raise your blood pressure, which is unhealthy for your heart and your body in general. Processed foods, like those that are canned, frozen or packaged, often have a lot of salt. Try to use less than one teaspoon of salt in preparing food when cooking.



Too much salt in the body absorbs too much water

Skipping Meals may lead to weight gain. Follow these tips to maintain a healthy weight.

1. *Eat breakfast every day.* It gets your body going. You can even grab something on the go, like a piece of fruit and a slice of whole-grain bread. It also helps you concentrate on your studies or even enables you to focus on your work brought about by the power of taking regular breakfast.
2. *Pack your lunch.* Aside from being economical, if you pack your lunch, you can control the portions and can ensure a healthy meal since you prepare it.
3. *Eat healthy snacks,* and try not to skip meals. If you can bring your own snack, then do so. Eat boiled bananas, camote and the like instead of taking junk foods.
4. *Take dinner with your family.* When you eat with your family, you are more likely to eat a healthy meal, and you can take the time to catch up with each other.
5. *Be involved in grocery shopping and meal planning at home.* If you're involved, you can make sure meals are healthy and taste good. Share your knowledge to your parents while picking up your groceries and strengthen your bonding, too.

Proper Nutrition for Exercise

Nutrition is the health branch of health science that emphasizes the importance of the food for growth and development, as well as in lowering the chances of acquiring diseases and illnesses. Proper nutrition depends on the mix of food with varied nutrients that we need to consume every day. Having too much or too little of these nutrients can lead to disorders, so keep principles of nutrition like adequacy, balance, and variety. Nutrients are important food substances that help our body function properly. They provide energy and facilitate growth and repair of cells.

Macronutrients such as carbohydrates, fats, proteins, and water are mandatory intake by the body in large amounts. **Micronutrients** such as

vitamins and minerals are only needed in very little amounts. They all aid our bodies to produce enzymes, hormones and other substances critical to growth and development.

Micronutrients	Importance	Signs and Symptoms of Deficiency
Vitamin A	Helps the body use carbohydrates, proteins and fats. Maintains healthy skin, bones, teeth, hair, and vision	Anemia, painful joints, cracks in teeth, depression, frequent infections
Vitamin B	Produces energy from carbohydrates and fats. Breaks down glycogen to release glucose and make hemoglobin in carrying oxygen in the blood	Anemia, depression, convulsion, skin rashes, nervous system degeneration, progressing to paralysis and hypersensitivity
Vitamin B12	Aids maintenance of red blood cells	Red blood cell breakage, anemia, muscle degeneration, difficulty walking, leg cramps
Vitamin E and C	Aids in bone, teeth and skin formation and resistance to infection it protects the body from oxidative damage	Anemia frequent infection, bleeding gums, loosened teeth, muscle degeneration and pain, joint pain, blotchy bruises, failure of wounds to heal.
Folate	Aids in the formation of red blood cells and protein	Anemia, heartburn, frequent infections, smooth and red tongue, depression and mental confusion.

D. FITT PRINCIPLE

The FITT Principle is an acronym for Frequency, Intensity, Time, and Type. These are the key factors in designing an exercise program that will address the current fitness level; provide means to overload the body; and trigger positive adaptations. These variables can be modified occasionally to consistently challenge the body to become stronger. It is important to remember that increasing the workload should be done one variable at a time to prevent chronic injuries or overtraining. The proposed recommendations should be observed to reduce the likelihood of injury and encourage adoption of an active lifestyle.

The **frequency (number of sessions in a week)** of an exercise program depends on the current fitness level of a person and the type of activity performed. It is important to provide rest days to allow the body to recover. Consequently, beginners should exercise less frequently as compared to athletes. As the fitness level increases, the individual can increase the number of sessions gradually. Some individuals train twice or thrice every day. However, one should refrain from designing his/her program (especially for beginners) this way because it leads to burnout and possible injuries.

The **intensity (difficulty level of the exercise or work demand)** of an exercise, refers to the difficulty level of the workout. It is important to set a

workload that is more challenging than what one is used to. This factor is affected by the current fitness level and the time allotted to an exercise session. Each type of exercise has its own method of estimating intensity. Current research indicates that exercise intensity is the most important factor in improving fitness level.

The **time or duration (duration or distance covered in an exercise session)** of an exercise session is influenced by the intensity and the type of activity performed. An exercise that is performed at a high intensity level cannot be sustained for a long period of time. Furthermore, a stretching program usually takes a shorter period to complete as compared to resistance training program.

Lastly, the **type (mode of exercise or activity)** of activity is influenced by the fitness goal and the current fitness level. The program should be designed to produce the best activity that will specifically address the fitness goal. For instance, an individual who wants to develop his or her endurance to swim 2 kilometers should choose swimming as his or her main activity though there are strategies to achieve this goal. There is no single exercise for a specific goal, but one can choose from various alternatives or activities that will provide enjoyment to him/ her. This is where the art and science of exercise prescription come into play.

E. INTRODUCTION TO STRENGTH TRAINING

The Five Basic Strength Training Exercises

A. **Push-ups**- Regular push-ups are prescribed to most people. However, for some who have health concerns, newbies and even females, they may start off with knee push-ups. Regular push-ups are performed with the body forming a straight line from the heels. The body is lowered until the chest is approximately one fist off the ground. The body is then pushed off the ground to return to its original position.



B. **Superman**-From prone lying position, lift both arms and legs. Try not to bend the legs; then lower arms and legs without relaxing the ground.



Superman

C. **Crunches**- From the supine lying position while legs are bent and arms touching the ears, lift the head and shoulders with the shoulder blades lifting off completely from the ground. Return to original position while keeping the head elevated off the ground.



Crunches

D. **Side crunches**- Starting with legs together and bent, lie on one side. Extend the arm close to the ground 30-45 degrees from the body as support or balance. Position the other arm across the chest or have it float in front of it. Lift the shoulder closer to the ground while legs and the chest slightly face upward. Return to original position without letting the shoulder touch the ground.



Side Crunches

E. **Squats**-From an upright position with arms and hands crossed in front of chest or up, squat lower until the thighs are parallel to the ground. The chest and butt must be pushed out and the knee must not thrust forward beyond the toes. Return to original position, keeping both legs and slightly bent.



Squats



Additional Activity

Directions: It is now time to apply what you have learned. Try to create a proposed work plan with just the right number of sets and reps you want to target in a week.

Exercises	1stweek	2ndweek	3rdweek	4thweek
Push-up				
Superman				
Crunches				
Side Crunches				
Squats				

Directions: In your notebook, give your impressions on strength training activities by completing the statements in each box below.

STRENGTH TRAINING ACTIVITIES		
I can recall...	I already understand about...	I can make a connection with this topic because.

Strength Training



Participation in daily fitness activities supports a healthy function of the heart and lungs. Choose the best fitness activity not only to enhance the body's performance but also to enjoy the active engagement that supports lifetime goals.

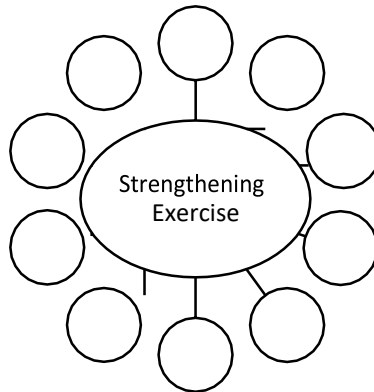


What's In

I. **Directions:** Answer the following questions in your activity notebook.

1. What are the different strength training exercises? Provide the significance of each strength training activity to the body.
2. In strength training, what is the difference between prep and set?

II. Complete the semantic map by writing words associated with the theme given below.



III. **Direction:** Think of some household chores that can be done as alternative to the exercises identified below. Write your answer in your activity notebook.

Exercises	Household chores
Push-up	<i>(Ex: Getting up from the bed from prone lying position)</i>
Superman	
Crunches	
Side Crunches	
Squats	



What is It

A. Warm-up

Directions: Perform the following warm-up exercises for 1-minute each and record your pulse rate after each activity for 1-minute.

Exercise	Number of Sets and Reps	Pulse Rate for 1-minute
Jog-in-place		
Jumping jacks		
1-minute step test		

B. Work-out

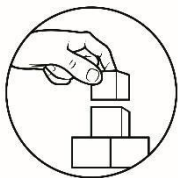
Directions: Below is the list of work-out exercises. Fill out the table with the number of reps and sets you can perform within a minute.

Exercises	Set	Rep
Push-up		
Superman		
Crunches		
Side Crunches		
Squats		

C. Cool Down

Directions: Perform the following cool down activities with your favorite calm music in 1 minute. Determine which part of your body can feel the stretch and tension. Describe your experience in this activity on your notebook.

Exercise	Spot	Reflection
Standing-toe-touch		
Upward dog		
Plank		



What's More

Directions: Create a visual presentation or poster of the different safety tips that we need to consider when doing strength training. Use an A4 size bond paper. Below are the criteria for grading your output. You may pass this output after accomplishing this module.

Criteria	
CONTENT 50%	<ul style="list-style-type: none"> ◆ Appropriate details support main idea ◆ Accurate and detailed information ◆ Information adequately supports purpose of visual presentation
FOCUS 20%	<ul style="list-style-type: none"> ◆ Topic and title are clear and easily identified ◆ Main idea is clearly appropriate to topic ◆ All illustrations complement the topic
VISUAL APPEAL 20%	<ul style="list-style-type: none"> ◆ Outstanding use of color, design, and space ◆ Original and creative design ◆ Overall design is pleasing and harmonious
MECHANICS 10%	<ul style="list-style-type: none"> ◆ Free of grammatical errors ◆ Words are legible and pertinent to topic
Total- 100 %	



Congratulations for doing a good job. Take a break and continue when you're ready for the next lesson.

**Lesson
3**

Development of Strength Training



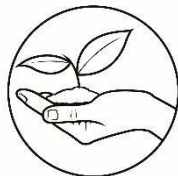
Today you are moving to lesson 3. Are you ready to take some actions? Let's begin.



What's In

Directions: Fact or Myth? There are various myths and fallacies surrounding exercise and fitness. It is important that you are able to identify valid claims. A sound understanding of how the body responds to exercise and training is going to help you weed out fact from fallacy. Check out the following statements and decide whether it is a fact or myth by writing **F** if it's a fact and letter **M** if it's a myth. Write the answers on your activity notebook.

1. It is best to exercise in the morning because it helps burn more calories.
2. Running a kilometer and walking a kilometer will burn the same amount of calories.
3. Performing 1,000 crunches a day will trim fat in the belly.
4. Free weights are better than exercise machines in increasing strength.
5. Performing static stretching before jumping decreases vertical jump height.



What's New

RPE SCALE	
1	Very Light Activity (anything other than complete rest)
2-3	Light Activity (Feels like you can maintain for hours, easy to breath and carry on a conversation)
4-5	Moderate Activity (feel like you can exercise for long periods of time, able to talk and hold short conversation)
6-7	Vigorous Activity (on the verge of becoming uncomfortable, short of breath, can speak a sentence)
8-9	Very Hard Activity (difficult to maintain exercise intensity, hard to speak more than a single word)
10	Max Effort (feels impossible to continue, completely out of breath, unable to talk)

This is the Rate of Perceived Exertion (RPE) Scale. If you want to measure the intensity of your workouts, get familiar with the numbers. In simple terms, the numbers correspond to the intensity of exercise. Have you seen this chart? How is it related to the Philippine activity pyramid?



What is It

Heart Rate

The heart rate is an indicator of the level of participation in physical activity. The intensity of activity is measured by the percentage of the maximum heart rate (maxHR) during exercise, which literally means the maximum number of times the heart contracts in one minute. An easy formula to determine your maximum heart rate, based on your age, is called the Maximum Heart Rate (MaxHR).

Prediction Equation:

$$\text{MaxHR FORMULA} = 220 - \text{your age}$$

However, this only gives you an estimate, as the maximum heart rate actually varies for different people. The aging factor affects this formula and **maxHR** decreases as one gets older. A more accurate measure of heart rate is known as the maximal stress test (**VO_{2,max}**). This test makes use of a treadmill or exercise bike. Another accurate way to measure the heart rate is through a heart rate monitor that uses either watch or chest strap attached with a device that measures one's heart rate and calculates its percentage against your maxHR.

Rate of Perceived Exertion

The Rate of Perceived Exertion (RPE) can measure exercise intensity and can be combined with the Prediction Equation. A number is assigned to coincide with the subjective feelings of exercise exertion (from 1 to 10). Based on the given number (RPE), there is an assigned ratio scale. The higher the number given by the exerciser, the higher the level of exertion is. To use this text, the exerciser is tasked to determine the approximate level of his/her exertion between 1 and 10. The equivalents are as follows:

RPE	Approximate Level of Exertion
1	10 % No Exertion
2	20% Very Very Weak
3	30% Very Weak
4	40% Weak
5	50% Moderate
6	60% Somewhat Strong
7	70 % Strong
8	80 % Very Strong

9	90 % Very very strong
10	100 % Maximal Exertion

If the student gives a number of 5, for example, it garners an exertion level of 5, which means that he/she would more or less, be at his/her 50% personal maxHR. This value can then be compared to the Prediction Equation, which is based on the student's age. A simple way of determining the maxHR is through this formula.

$220 - \text{age}$ (for example, 20 years old) = 200 (maxHR of the student)

RPE = 5 (exertion = 5, or approximately 50% heart rate)

Therefore, at the rate the student is exercising, the heart rate should be 100 bpm (beats per minute).

$200 - 20 = 200$ $200 \times .50 = 100$

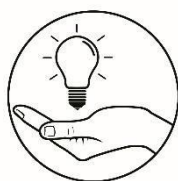
Activity 1: Try this one. Compute for the maximum heart rate of a 24-year old athlete whose RPE is 8. Show your step-by-step computation in your activity notebook.



You just did a computation on heart rate. Now, it's time to create your own fitness plan.

FITT PRINCIPLE

Exercise is an activity that stimulates the body to adapt and become stronger. The stimulus has to be appropriate to derive the health benefits. If the stimulus is too light, the body will not adapt, and if it is too hard, it may cause some injuries. The exercise program should be designed to fit the current health condition of the individual and it should be interesting. The FITT Principle is a helpful guide in designing a personalized fitness program.



What I Have Learned

Activity 1. Directions: Prepare a simple fitness program by simply selecting the set of exercises that you want. In your work-out or strengthening activity, use the alternative exercises that you have chosen in the previous activity or lesson.

Exercise	Duration	Pulse Rate
<i>Warm-up</i>		
1		
2		
3		
4		
5		
<i>Work-out/ Strengthening Exercise</i>		
1		
2		
3		
4		
5		
<i>Cool Down/ Stretching</i>		
1		
2		
3		
4		
5		

Activity 2. Directions: Create your own fitness plan, warm-up, work-out and cool down exercises. Be ready to perform them with music and record your performance. You will be graded using the following rubrics:

Criteria	
CONTENT 40%	♦ All the exercises were appropriate for strengthening activity.
Execution 30%	♦ All the exercises were executed properly. Overall, they were pleasing and harmonious
Mastery 20%	♦ All exercises were executed with full mastery and in proper order
Attainability 10%	♦ The exercises used were easy to follow and can be performed by everyone
Total- 100 %	

Lesson

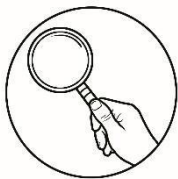
4

Making it Part of Life

Hello! You are about to finish this module with your last lesson. Ready?
Let's proceed.

Being well and fit enables one to perform everyday duties and daily routines from moderate-to-vigorous levels without excessive fatigue or getting tired and become miserable at the end of the day. One should still have the strength to perform other activities for recreation. There are contributory factors for being fit. One of which is the fitness activity.

A fitness activity includes physical movements designed to burn fats or calories. Everybody can benefit from regular physical activities, whether it be moderate or vigorous activities. Greater amount of physical activity, 'longer duration' or greater intensity' can provide additional health benefits. Some of the suggested fitness activities are strength training, walking, running and jogging.



What is It

Lifting weights is as important as those exercises using one's body weight for resistance or resistance bands. This type of exercise increases lean muscle mass which is particularly important for weight loss since lean muscles burn more calories than other types of tissues. When you drop pounds, you can also lose muscle, so it's important to do resistance training to keep that muscle mass especially for those learners whose BMI fall under ***obese, overweight, and underweight***. This is all part of improving and maintaining one's Body Mass Index (BMI).

Benefits of Strength Training

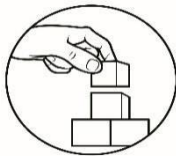
- Increases lean muscle mass (or prevention of its loss) – Continuous strength training will help tone your muscles because of its repetitive action or contraction of the muscle
- Increases bone density and reduced risk of osteoporosis- As we age, our bone density changes and our bone become more brittle so strength training can help reduce the risk of osteoporosis which is the main problem of older people.
- Increases muscle strength to make everyday activities easier- The muscle gets immune with the strength being exerted and it will help you accomplish harder work easily and with ease.
- Lowers risk of injury (by allowing the muscles to better support the joints). Exercising the joint to achieve its maximum range could be attained

through strength training. As a result, the individual can accomplish more tasks.

Use your resourcefulness in doing the next activity. You need plastic bottles, water, sand, pebbles or soil. Filling the bottles with water, sand, or pebbles is a good substitute for dumbbells.



Reminder:



1. Make sure to undergo warm up exercises first to condition yourself in doing the suggested activity.
2. Perform in a wide space and make sure you are wearing a comfortable fitness attire.
3. Hydrate yourself.
4. Have someone observe you (any member of the family) while performing to get instructions relating to execution, safety, and security.



What's More

Directions: Using improvised materials, execute the following simple strengthening exercises.

Positions	Procedure
<div style="text-align: center;">  <p>1st Position</p>  <p>2nd Position</p> </div>	<p style="text-align: center;">Bicep curls</p> <ol style="list-style-type: none"> 1. Stand firm on the ground with feet apart and distribute your weight well. 2. Starting position- While holding the bottles, place your hands on your sides (you may change the way you handle and the direction of the bottles as long as you hold them firmly.) 3. Lift the bottles by bending your hands in front of you. 4. Go back to the 1st position. Repeat the whole steps 15 times

 1 st Position	<h3>Side Swings</h3> <ol style="list-style-type: none"> 1. For the starting position, place your hands on your sides with 1 bottle per hand like the 1st exercise (Bicep Curls). 2. Step your right foot to the side then swing your arms until shoulder level like flapping wings then return to 1st position. 3. Do the same thing with the left side then repeat the whole figure for 15 times.
 2 nd Position	

Directions: In your activity notebook, record your progress in doing these simple strength exercises by writing how many reps you can accomplish from Monday to Friday. Write your experience as you engage in this activity. Copy the table in your notebook. You may use music while doing the exercises. If you can think of more related activities using improvised equipment, then you may include them.

Exercise	Mon	Tue	Wed	Thu	Fri
Bicep Curls	(Write how many preps you were able to accomplish and your brief observations)				
Side Swings					

Criteria	Description
CONTENT 40%	◆ All the exercises were appropriate for strengthening activity.
Execution 30%	◆ All the exercises were executed properly. Overall movements were pleasing and harmonious.
Mastery 20%	◆ All exercises were executed with mastery and in proper order.
Attainability 10%	◆ The exercises used were easy to follow and can be performed by everyone.
Total - 100 %	

Reminder!

Participation in daily fitness activities supports a healthy function of the heart and lungs. Choose the best fitness activity not only to enhance the body's performance but also to enjoy the active engagement that supports lifetime goals.



What I Have Learned

Directions: Provide insights on all the lessons in this module. Write your answers in your activity notebook.

Lesson 1- Strength Training	Lesson 2- Maximum Heart Rate	Lesson 3- Fitness

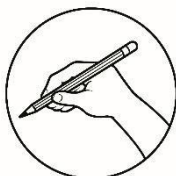


What I Can Do

Directions: In essay form, explain the importance of working-out using the guide questions below.

1. How could you apply strength training as part of your everyday living?
2. Why is strength training important in your life?

Your output will be graded according to its substance, relevance and expression.



Assessment

Directions: Select the letter that represents your best answer. Use your activity notebook in writing your answers.

1. Which of the following statements supports strengthening exercises?
 - A. It deteriorates the immune system
 - B. The muscles will just get tired and weak
 - C. It aims to develop the reproductive system only
 - D. It is both beneficial to muscle and bones for better mobilization.
2. What do we call the number of repetition or the full movement of exercise from starting point to finish?
 - A. Rep
 - B. Set
 - C. Laps
 - D. Cycle
3. Which of the following is the most ideal reps for lower body?
 - A. 6-15
 - B. 6-9
 - C. 12-15
 - D. 15-25
4. Which of the following is the right procedure in executing Superman?

- I. Start with prone position III. Don't bend legs
II. Lift both arms and legs IV. Lower arms and legs without relaxing on
the ground
- A. I-II-IV-III C. I-II-III-IV
B. IV-III-II-I D. I-III-IV-II

5. You were asked to execute lying with legs together and extending the arms close to the ground 360 degrees from the body as support or balance, what are you trying to execute?

- A. Push-ups B. Side Crunches C. Crunches D. Squats

II- Write **AGREE** if the statement is correct and **DISAGREE** if it's not.

1. Walking and stretching are effective warming up and cooling down activities.

2. Proper breathing helps you to be in control by executing physical activities with the right tempo.

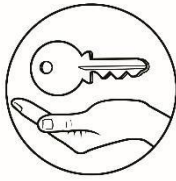
3. Exhaling while working against resistance by lifting, pushing, or pulling helps you carry the weights with ease.

4. Slowly increasing weight or resistance challenges your body as it tests one's muscle strength.

5. Sticking to the routine of working all the major muscles of the body two or three times a week is most ideal.



Congratulations for a job well done! See you again next time!



Answer Key

LESSON 11
 What is
 1. English
 2. English
 3. English
 4. English
 5. English

LESSON 12
 Vocabulary
 1. English
 2. English
 3. English
 4. English
 5. English
 6. English
 7. English
 8. English
 9. English
 10. English

LESSON 13
 What is
 1. English
 2. English
 3. English
 4. English
 5. English
 6. English
 7. English
 8. English
 9. English
 10. English

LESSON 14
 What is
 1. English
 2. English
 3. English
 4. English
 5. English
 6. English
 7. English
 8. English
 9. English
 10. English

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