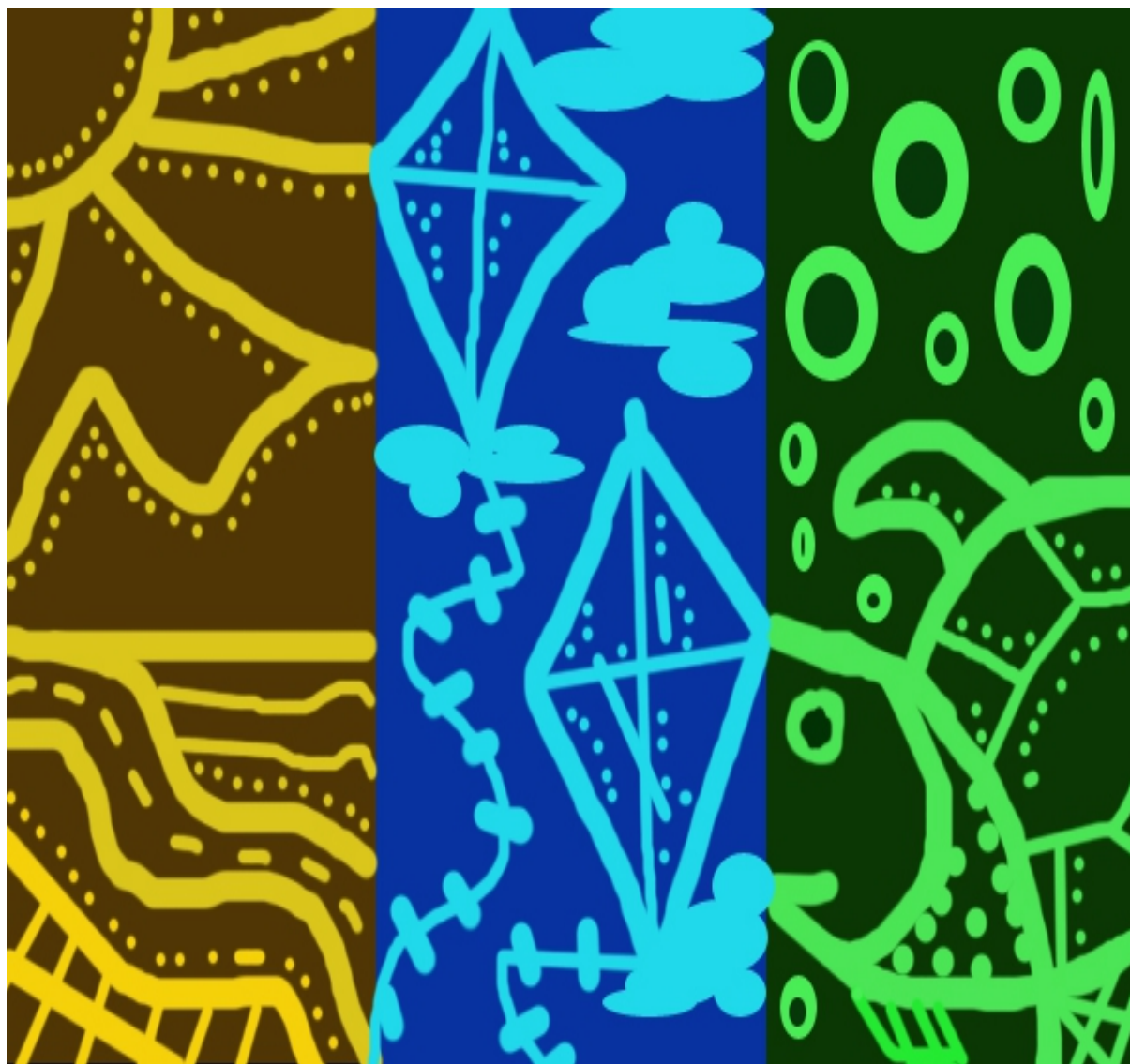


HOPE 4



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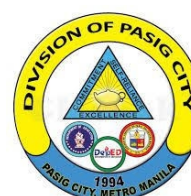
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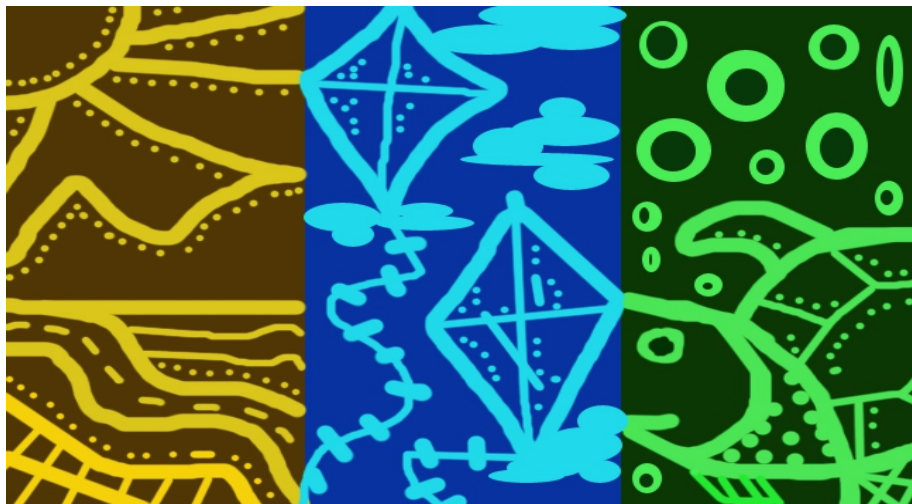


HOPE 4

Quarter 3

Self-Learning Module 1

**Body Composition, Muscular Strength and
Endurance, Flexibility
(Recreational Activities)**



Introductory Message

For the Facilitator:

Welcome to the Health Optimizing Physical Education (HOPE 4) Self-Learning Module 1 on Body Composition, Muscular Strength and Endurance and Flexibility

This Self-Learning Module was collaboratively designed, developed and reviewed by educators from the Schools Division Office of Pasig City headed by its Officer-in-Charge Schools Division Superintendent, Ma. Evalou Concepcion A. Agustin, in partnership with the City Government of Pasig through its mayor, Honorable Victor Ma. Regis N. Sotto. The writers utilized the standards set by the K to 12 Curriculum using the Most Essential Learning Competencies (MELC) in developing this instructional resource.

This learning material hopes to engage the learners in guided and independent learning activities at their own pace and time. Further, this also aims to help learners acquire the needed 21st century skills especially the 5 Cs, namely: Communication, Collaboration, Creativity, Critical Thinking, and Character while taking into consideration their needs and circumstances.

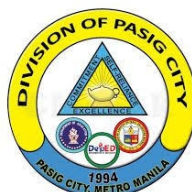
In addition to the material in the main text, you will also see this box in the body of the module:



Notes 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. Moreover, you are expected to encourage and assist the learners as they do the tasks included in the module.



For the Learner:

Welcome to the Health Optimizing Physical Education 4 (HOPE) Self-Learning Module 1 on Body Composition, Muscular Strength and Endurance and Flexibility

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 material while being an active learner.

This module has the following parts and corresponding icons:



Expectations - This points to the set of knowledge and skills that you will learn after completing the module.



Pretest - This measures your prior knowledge about the lesson at hand.



Recap - This part of the module provides a review of concepts and skills that you already know about a previous lesson.



Lesson - This section discusses the topic in the module.



Activities - This is a set of activities that you need to perform.



Wrap-Up - This section summarizes the concepts and application of the lesson.



Valuing - This part integrates a desirable moral value in the lesson.



Posttest - This measures how much you have learned from the entire module.



EXPECTATIONS

Most Essentials Learning Competencies:

Self-assesses health-related fitness (HRF) status, barriers to physical activity assessment participation and one's diet

At the end of the module, the learners will be able to:

1. discuss what is recreational activities and some health related-fitness components.
2. undergo different physical fitness test to determine the level of fitness in terms of muscular strength muscular endurance and flexibility
3. compute for your body mass index
4. value the importance of muscular endurance, muscular strength flexibility and body composition through journal entry

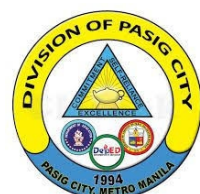


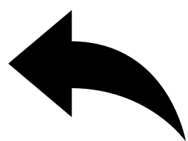
P R E - T E S T

Directions. Choose the letter of your answer on the choices below.

1. The ability of the body to do daily task without undue fatigue and with extra enough energy in case of emergency.
2. The ability of a muscle to move high resistance for a short period of time.
3. The ability of a muscle to move low resistance for a long period of time.
4. A joint's ability to move through its full range of motion.
5. The proportion of fat, muscle and bone of an individual's body.

- A. Body composition
 - B. Flexibility
 - C. Muscular endurance
 - D. Muscular strength
 - E. Physical Fitness





R E C A P

Based on your previous lesson during your grade 11, identify what particular health related fitness is being develop by the following activities:

Activities	Health-Related Fitness
1. Weightlifting	
2. Cleaning the windows	
3. Yoga	
4. Boxing	
5. Gardening	



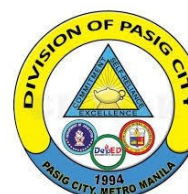
L E S S O N

Recreational from term recreation, is an activity done for enjoyment when one is not working. Recreational means relating or denoting activity done for enjoyment during free time. It refers to the time spent in an activity one loves to engage in with intent to feel refreshed.

Recreational activities help you to take a break from monotony and diversion from the daily routine. It gives people the benefit of a positive change from the stereo typical life style and involves an active participation in entertaining activities that a person is interested in. When a person is engaged in recreating activities that he or she likes, it would naturally give them enjoyment. Recreational activities provide source of joy and relaxation to one's mind and body

Health – related fitness is all about psychology, personal health and how activity influences us as person. This is important for anyone who wants to live a physically active lifestyle to support a higher quality of life.

An individual requires a fine level of health – related fitness for a normal life style regardless of age, gender or sporting ability. One's failure to sustain this could lessen his/her quality of life. Poor fitness on the other hand also controls the capability to perform daily activities like walking/ cycling to work, shopping and picking up children to school, or climbing the stairs at home.



Fitness is a complex subject. In fact, there are many definition and explanation about it. Health – related fitness speaks about the components of fitness, which composed our health condition. Body composition, muscular strength and muscular endurance, flexibility and cardio – respiratory endurance are the components of health – related fitness.

BODY COMPOSITION is the percentage of body fat and lean body tissue in an individual, Lean body tissue is composed of water, blood, skin, muscles and bone. From a health viewpoint, it is very significant to have a low level of body fat,

BMI is an indicator of total body fat which is related to the risk of disease and death. Body Mass Index (BMI) refers to the measurement of one's weight relative to his or her height. Researchers frequently use BMI in studies that examine health risk associated with body weight. BMI is useful in areas where there is no adequate equipment to measure body fat. It is also effective when use in large population survey

Muscular Strength and Muscular Endurance

Strength is also known as **MUSCULAR STRENGTH**. It is vital for everyone not just to athletes. Strength is the ability of a particular muscles or group of muscle to put forth force in a single maximal contraction to conquer other form of resistance. Relating to everyday life, this resistance is classified as an activity that involves a level of strength to perform such as picking up and carrying shopping bags from the supermarket. A good level of strength permits an individual to carry out daily activities concerning strength without feeling exhaustion or weariness.

Unlike strength that involves the muscles performing one action, **MUSCULAR ENDURANCE** involves the muscle in building a number of continuous movements. Muscular endurance can be a specific muscle or group of muscle such as the biceps, making continual contractions over a considerable period, perhaps over a number of minutes.

Muscular strength and endurance are advantages in the capability to carry out daily activities such as lifting, carrying, pushing and pulling without tension or unwarranted exhaustion.

Picking up shopping bags from floor or reaching for something, needs good flexibility. **FLEXIBILITY** is capacity of a particular joints such as our knee, to move during a complete range of motion. A flexible body possesses a better variety of motion which should help in the performance of skills.

Flexibility is the ability of the joints to move. Each joint (location where your bones join together) in your body is designed to move in a certain way. Flexibility is as important as aerobic endurance and must be specifically included during training.












ACTIVITIES

Before we proceed to our activities, students should have their warm up exercise first.

Warm up Exercise

 Jog in place	50 counts on the left foot
 Neck rotation	5 complete slow rotation to the left and 5 complete slow rotation to the right
 Arm circling	10 counts forward, 10 counts backward
 Shoulder rotation	10 counts forward, 10 counts backward
 Knee rotation	10 counts clockwise, 10 counts counter clockwise
 Ankle rotation	10 counts clockwise, 10 counts counter clockwise
 Jumping jack	16 counts

ACTIVITY #1 Computation of the BMI (body mass index)

Formula for computing BMI (body mass index)

$$\frac{\text{Weight (in kilogram)}}{\text{height}^2 \text{ (in meter, squared)}} = \frac{30\text{kg}}{1.20^2}$$

$$\frac{30\text{kg}}{1.44\text{m}} = 20.83 \text{ (Normal)}$$

Standard:	Less than 15	Starvation
	15.0 – 18.5	Underweight
	18.5 – 24.9	Normal
	25.0 – 29.9	Overweight
	30.0 – 40.0	Obese
	Greater than 40	Morbidly Obese

ACTIVITY #2 90° Push ups

This test measures the strength and endurance of the arms and chest muscles (Do some warm up exercises before taking the test, stop if you do not have the strength to continue the activity)

Procedure



- ✚ Lie face down with your hands on the floor and your thumbs in line with your shoulder
 - ✚ Keep legs slightly apart with knees and back straight.
 - ✚ Push your trunk off the floor and assume the starting position.
 - ✚ Bend your arms at the elbows and lower yourself until your arms are at a right angle position (90 degrees)
 - ✚ Repeat the movement for a maximum of 50 counts for boys and 30 counts for girls
- Stop when you commit any of the following form breaks:
- Failure to go down at a 90 degree angle;
 - Inability to extend your elbows fully;
 - Failure to keep your legs and back straight ; and
 - Inability to maintain the cadence of one second per count in going down and up

Interpretation of Scores

Level	16 YEARS OLD		17 – 19 YEARS OLD		20 – 29 YEARS OLD		30 – 39 YEARS OLD	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
High Performance	36 +	16 +	47 - 56	27 - 35	39 - 47	30 – 36	34 - 41	30 - 37
Good Fitness	18 - 35	7 - 15	35 - 46	21 - 27	30 - 39	23 - 29	25 - 33	22 - 30
Marginal Fitness	16 - 17	6	19 – 34	11 - 20	17 - 29	12 – 22	13 - 24	10 - 21
Low Fitness	15 -	5 -	11 - 18	6 - 10	10 - 16	7 - 11	8 - 12	5 - 9

ACTIVITY #3 Partial Curl – ups

This measures the strength and endurance of the abdominal muscles (Do some warm – up and stretching activities before taking the test)

Procedure

- ✚ Lie flat on the floor, knees bent with the heels about six (6) inches from the buttocks, feet slightly apart, and held down firmly by your spotter (may be any member of the family who is at the same age or older than the performer)
 - ✚ With elbows straight, place your hands on your knees and hold yourself up by holding knees firmly. This is the starting position
 - ✚ Lower yourself slowly until the tips of your middle fingers are about an inch from the top of your knees.
 - ✚ Raise yourself until you assume the starting position and, without resting, repeat the movement as many times as you can.
 - ✚ Perform slowly at a rate of going down and one second going up.
- For the tester:



- Call out the cadence by using stopwatch or counting “one thousand and one, one thousand and two” for complete curl – up
- Avoid applying too much pressure when holding the feet of the performer
- Stop when the student completes 40 curl – ups for females or 50 curl – ups for males or commits two (2) “form breaks.” A form break occurs when the student could not keep up with the cadence or stops and rests by holding on to his or her knees.

Interpretation of Scores

Level	15 - 16 YEARS OLD		18 - 25 YEARS OLD		26 25YEARS OLD	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
High Performance	48 +	36 +	44 - 49	37 - 43	40 - 45	33 - 39
Good Fitness	24 - 47	18 - 35	39 - 43	23 - 36	35 - 39	29 - 32
Marginal Fitness	20 - 23	15 - 17	35 - 38	29 - 32	31 - 34	25 - 29
Low Fitness	19 -	14 -	31 - 34	25 - 28	29 - 30	21 - 24

Activity #4 A: Sit and Reach

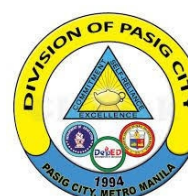
This is to measure the flexibility of the hamstring muscles (back of the thigh) and to some degree, the lower back.

Materials needed:

A tape measure accurate to 0.1 centimeter, firmly attached to the floor, marked distinctly at the 50 – centimeter point.

Procedure

- ✚ Sit down on the floor with the tape measure between your legs. Your spotter places the tip of your shoes exactly at the 50 – centimeter point.
- ✚ Brace the heel of your extended right leg against the shoes of your spotter and bend your left leg, pulling your heel as close as possible to your buttocks, soles flat on the floor
- ✚ Extend your arms forward over the measuring device. Place your hands one on top of the other, with your palms facing down. The middle fingers should be together with the tip of one finger exactly on top of the other. Avoid bouncing while extending your arms.
- ✚ Lean forward and reach with your arms with and fingers four times. On the fourth reach, hold 3 seconds and observe the centimeter mark below your fingertips. Then record your score to the nearest centimeter.
- ✚ Repeat the test with the left leg straight.



Reminder: Avoid fast and jerky movement in doing the test

Interpretation of Scores

Level	25 Below		26 - 35 YEARS OLD	
	MALE	FEMALE	MALE	FEMALE
High Performance	18 - 19	20 - 21	17	20
Good Fitness	20 - 21	22	18 - 19	21 - 22
Marginal Fitness	14 - 17	17 - 19	13 - 16	18 - 19
Low Fitness	12 - 13	15 - 16	10 - 12	14 - 17

Activity # 4 B: Shoulder stretch

This to measures the flexibility of the shoulder joints

Procedure

- ✚ With your right hand, reach over the back of your right shoulder and the same time, place your left hand behind your back and try to touch the fingers of your right hand
- ✚ Perform the test with the left hand, over the back of the left shoulder and the right hand behind the back.

Interpretation of Scores

Record the scores as pass or fail for each test. Mark it as **Pass** if the right and left hand touched one another; and mark it **Fail** if not.





W R A P – U P

Direction: Answer the following questions on your notebook.

1. Using a Venn diagram differentiate muscular strength from muscular endurance.
2. List some benefits of having a good muscular strength and muscular endurance and how can you develop them.
3. What do you mean by flexibility? What are the benefits of having a good level of flexibility to an individual?
4. What composes our body? What is the importance of identifying the composition of our body?



V A L U I N G

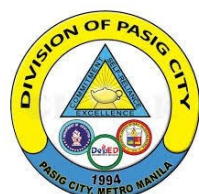
Your daily physical activities play an important part in having a fit and well lifestyle. As such, you should also consider your daily routine when you develop your fitness program plan. Think of ways by which you could be more active as you go about your daily routine.

On your journal make a personal fitness program plan.



P O S T T E S T

MATCHING TYPE: Choose what particular health related is being measured by the following test.



A

1. Partial curl – ups
2. 90° push up
3. Sit and Reach
4. Shoulder stretch
5. BMI

B

- A. Body composition
- B. Flexibility
- C. Muscular Endurance
- D. Muscular Strength
- E. Speed



KEY TO CORRECTION

Recap	Pre Test	Post Test
1. Muscular strength	1. E	1. C
2. Flexibility	2. D	2. D
3. Flexibility	3. C	3. B
4. Muscular strength	4. B	4. B
5. Muscular endurance	5. A	5. A

References

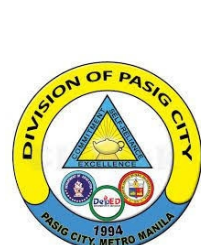
Books

Arthur Fernandez Turpio – Physical Education (HOPE I)

Romeo P. Gonzalvo Jr – Physical Education and Health (For Senior High School)

Darilag, Vergara, et al - Enjoy Life with P.E. and HEALTH IV

WEBSITE



www.shsph.blogspot.com

<https://www.topendsports.com>

Protocol – Flexibility (B) - Kinesiologists.ca

