

Let us develop health related physical fitness

Physical fitness is the ability to perform physical activities effectively. As you already know, physical fitness is divided into two main categories as skill related physical fitness and health related physical fitness. Health related physical fitness factors directly affect our health. There are five main health related physical fitness factors called cardiovascular endurance, muscular endurance, muscular strength, flexibility and body composition.

In grade 8 you identified health related physical fitness factors which are important to maintain a healthy lifestyle and engaged in activities which improve them.

In this chapter, we will learn about ways of measuring physical fitness. By performing these tests you can get to know how to maintain your fitness at an optimal level.

Health related physical fitness tests

These tests can be performed in many ways. With the development of technology these tests are performed using various instruments both in and outside research labs. The simple tests we use in Sri Lanka can be done also in the playground.

These results help to understand the health state of a person and accordingly can improve health related physical fitness. These can also be used for people starting new sports to choose the sport best suited for them.

Getting ready to measure fitness factors

In order to measure fitness factors divide the class into four groups. Get each group to measure and note the results. Arrange the measurement in each category from the highest to the lowest of all the students in the class. Grade the values into five groups.

1. Very good
2. Good
3. Average
4. Satisfactory
5. Poor

Compare your results with those of others in your class and get involved in activities to achieve higher grades.

Pay attention to the three steps below and organize a programme to test the level of fitness.

1. Preparation before the test
2. Carrying out the test
3. Analysis after the test

Instructions to be followed when performing tests to assess fitness levels

- Prepare the field so that accidents and injuries are minimized.
- Prior to the test make sure the participants do warming up exercises.
- After the test, make sure they do exercises to warm down.

Follow the instructions above and perform tests to assess each factor.

Measuring cardiovascular endurance

Cardiovascular endurance is the ability of the heart and respiratory system to function properly and supply adequate amounts of oxygen to the muscles.

Test - Continuous running (boys 800m and girls 600m)

Equipment needed - Stop watch.

Prepare a track in your school grounds so it has two straight sides and two bends. Mark how many rounds they need to run to complete 800m and 600m.

eg: If the track is 200m it will be 4 and 3 rounds

Procedure



Figure 12.1

- Prepare to run the required distance from the starting point. Use the standing start. You need to complete this distance in a minimum time duration.
- Start on the signal given by the leader.
- Start the stop watch and measure the time taken to complete the distance
- Give each student the time he or she has taken to complete the distance
- If a student finds it difficult to run the complete distance, he can alternate between running and walking to complete the distance.
- Chart the time taken by each student to complete the distance and identify the capabilities comparing the charts given by your teacher.

Measuring muscular endurance

Muscular endurance is the ability of the muscles to work for a long time without getting fatigued.

Test - Pushups test.

Equipment needed - Stop watch.

Procedure

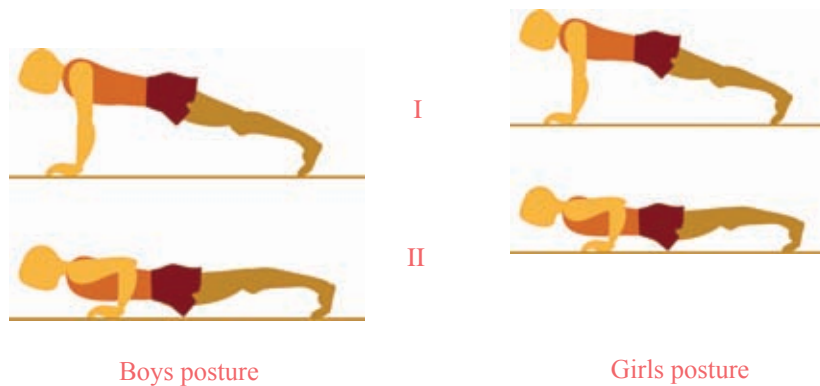


Figure 12.2

- Start the exercise in the posture recommended for you. (Figure 12.2 I)
- Change posture after the signal. Bend the elbows and bring the body close to the ground. (Figure 12.2 II)
- Straighten the arms at the elbow and raise the body off the ground, to the starting position.
- Count the number of times the exercise can be done in 30 seconds. Bringing the body from down to up is considered as one turn. If the number of repetitions in 30 seconds is high it is considered as high endurance.
- Measure the endurance of all the children in your class.

Measuring muscular strength

Muscular strength is the ability of a muscle to generate force when doing some work.

Test - Standing long jump test.

Equipment needed - Measuring tape.
Long jump pit or a safe surface.
marker.

Procedure



Figure 12.3

- Student should stand placing both feet behind the mark drawn close to the long jump pit.
- Bend your knees, swing arms forward and jump forwards with power.
- Measure the horizontal distance jumped. The '0' of the tape should be kept at the landing point.
- Compare the distance you jumped with those of others in your class and get to know your capabilities.

Measuring flexibility

Flexibility is the ability to move or stretch through the joints.

Test - Stand and reach test.

Equipment needed - A small steady table.
A measuring tape ('0' to be in the middle of the tape with + and - marked in centimeters in either direction).

Procedure

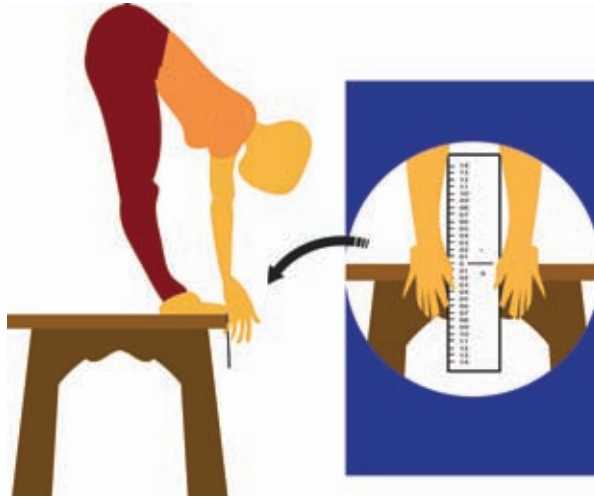


Figure 12.4

- Fix the tape vertically so that the mark '0' coincides with the upper edge of the table having the + side below and the – side above.
- Place your feet 30cm apart so that the tape measure falls between your feet.
- Without bending your knees bend down and try to touch the lower end of the tape with your hands. Measure this distance from '0' to the tip of your middle finger.
- If you have bent past your feet you will get a + measurement.
- Assess your level of flexibility by comparing it with the charts given by your teacher.

Measuring Body composition

Body composition is the components which make up the body. The composition of the body can be divided into two main components as fat component and fat free component. If the body composition has too much fat there is a higher chance of getting non-communicable diseases later in life.

Test I - Measuring the body mass index (BMI)

Equipment needed - Measuring tape
Weight balance

Procedure

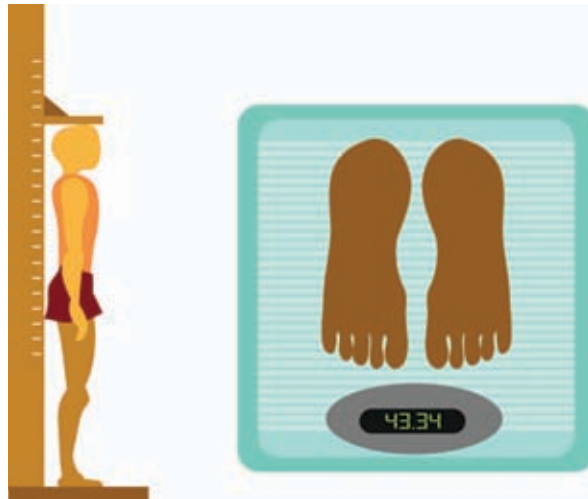


Figure 12.5

- Measure the height and weight of the students.
- Calculate the BMI according to the formula given below.

$$\text{Body mass index (BMI)} = \frac{\text{Weight (Kg)}}{\text{Height (m) x Height (m)}}$$

Use the BMI chart given to you in grade 6 and check if your BMI is in the appropriate range.

Test II - Measuring waist to height ratio.

Equipment needed - Measuring tape.

Procedure

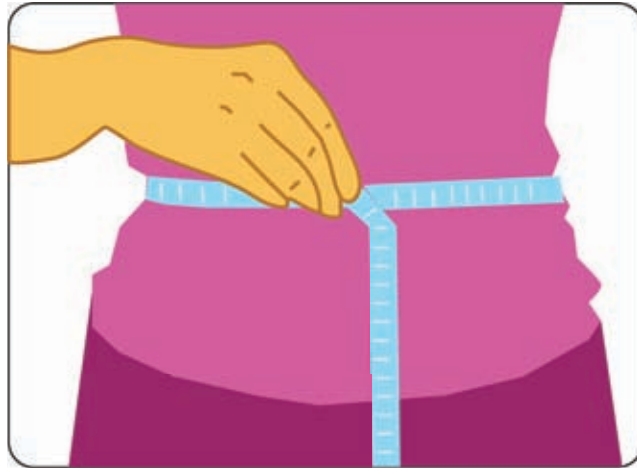


Figure 12.6

- Measure the circumference of your waist and your height. (You have learnt in grade 6 how to take these measurements correctly).
- Use it in the formula given below and get the waist to height ratio.

$$\text{Waist to height ratio} = \frac{\text{Circumference of waist (cm)}}{\text{Height (cm)}}$$

Try to maintain this value at 0.5 or less by engaging in relevant exercises.



Activity

Do a self-assessment on the following factors when you performed the test in groups. Each factor can get a maximum of five points

Factor	Group 1	Group 2	Group 3	Group 4
1. Preparation				
2. Performing the correct tests and obtaining the points				
3. Assessing the level of physical fitness on the points obtained				
4. Cooperation within the group				

Summary

Health related physical fitness affects our health directly. There are five factors considered in health related physical fitness. Different tests are used to measure these factors.

Cardiovascular endurance is the ability of the heart and respiratory system to function properly and supply adequate amounts of oxygen to the muscles. This is measured by 800m and 600m non stop running.

Muscular endurance is the ability of the muscles to work for a long time without getting fatigued. Doing pushups is a way of measuring muscular endurance.

Muscular strength is the ability of a muscle to generate force when doing some work. The standing long jump test is a way of measuring muscle strength.

Flexibility is the ability to move or stretch through the joints. Stand and reach test can be done to measure the level of flexibility.

Body composition is the components that the body is made. The two main components are, fat component and fat free component. Measuring body mass index and waist to height ratio, give an idea about the body composition.



Exercise

1. Give three instructions to be followed when performing physical fitness tests.
2. You can organize a physical fitness test in three steps. Name the steps.
3. Name health related physical fitness factors. Mention a test that can be used to measure each factor.