

Physical Education, Health Science and Sports

Classes 9-10



NATIONAL CURRICULUM & TEXTBOOK BOARD, DHAKA

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Physical Education, Health Science and Sports

Class Nine-Ten

Written by
Abu Muhammad
Md. Abdul Haque

Edited by
Prof. A B M Faroque

Translated by
Dr. Md. Arafe Zawad
Md. Abdul Mannan

National Curriculum and Textbook Board, Dhaka

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Co-ordinator

Meher Niger

Jaria Tul Hafsa

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Sudarshan Bachar

Sujaul Abedeen

Illustrator

Ghazi Mohammad Mahmudur Rahman Tito

Design

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PREFACE

Education is the pre-requisite for holistic development. In order to face the challenges of the fast changing world and to accelerate the development and prosperity of Bangladesh, there is a need for well-developed human resources. One of the most important objectives of Secondary Education is to develop students' intrinsic talents and potentials to build the country in line with the spirit of the Language Movement and the Liberation War. Besides, purpose of education at this stage is also to prepare students for higher levels of study by integrating and enhancing the basic knowledge and skills acquired at the primary level. The secondary level of education also takes into consideration the process of learning that helps students become skilled and worthy citizens in the backdrop of country's economic, social, cultural and environmental realities.

The new curriculum of secondary education has been developed keeping in mind the aims and objectives of the National Education Policy 2010. In the curriculum, national ideals, aims, objectives and demands of the time have been properly reflected. It will ensure also the learning of the students according to their age, talent and receptivity. In addition, a broad range starting from moral and human values of the students, awareness of history and culture, the Liberation War, arts-literature-heritage, nationalism, environment, religion-caste-creed and gender is given due importance. Everything is done in the curriculum to enable students to grow up as a scientific-minded nation able to apply science in every sphere of life and to realize the Vision Bangladesh 2021.

All textbooks are written in light of this new curriculum. In the development of the textbooks, students' ability, inclination aptitude and prior experience are given due consideration. Special attention is paid to the flourishing of creative talents of the students and for selecting and presenting the topics of the textbooks. In the beginning of every chapter, learning outcomes are added to indicate what they might learn. Various activities, creative questions and other tasks are included to make teaching-learning and assessment more creative and effective.

The subject Physical Education, Health Science and Sports is mainly developed on the philosophy of life Good Health and Beautiful Mind. This lesson is selected so that students should be developed as good citizen by practising various kinds of games and sports around the world.

This textbook is written keeping in mind the promise and vision of the 21st century and in accordance with the new curriculum. So, any positive and logical suggestions for its improvement will be paid mentionable attention. Very little time was available for writing the textbook. As a result, there could be some unintentional mistakes in it. In the next edition of the book, we will be more careful to make it attractive, illustrative and error free.

We are truly thankful to all who have contributed immensely by their hard work in composing, editing, sketching, preparing sample questions and publishing of the textbook. It is our sincere hope that the textbook will help students acquire expected skills from its reading.

Professor Md. Mostafa Kamaluddin

Chairman

National Curriculum and Textbook Board, Dhaka.

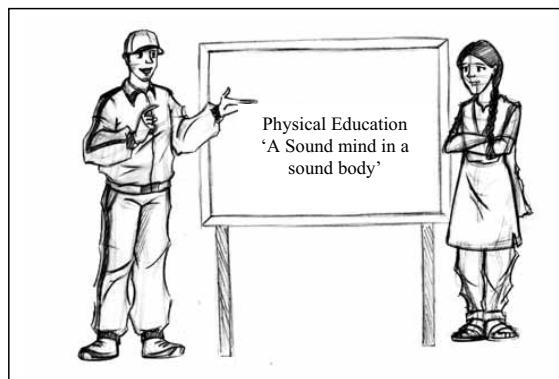
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Chapter One

Physical Education for Healthy Life

Physical Education is a precondition for healthy life. So it is essential to have knowledge of physical education. In the past people used to think that physical education relates only physical activities. In fact, when your body is not fit you do not feel mentally well and cannot concentrate in any work. Thus relationship between body and mind is intertwined and they cannot be studied separately. The old saying, “means sana in corporisano” (a sound mind in a healthy body) has been universal truth in all regarded as a universal truth in all ages. In modern time Physical Education, physical development, mental growth and social skills are an integrate part of total education process, A student through the physical education will develop a sound mind in a healthy body so that they become a good citizen of the country.



At the end of this chapter we will be able to-

- Explain aims and objectives of physical education
- Explain the necessity of physical education for healthy life.
- Discuss principles and foundation of physical education
- Explain concepts of physical education programmes
- Discuss current status of physical education in Bangladesh.
- Observe different physical education programmes such as inter class, inter schools, inter Madrasah sports competition, programme of national day properly
- Be habituated in healthy life style by realizing the importance of physical education.
- Be inspired with patriotism through observing physical education programmes,
- Be habituated in leading a discipline life; participate in various physical education programmes.

Lesson One

Physical Education: To say some thing about physical education or to define it first we need to know what education is. Physical education is an integral part of total education process. Without physical education, education remains incomplete. A definition of education will make it easy for us to understand what physical education is. Different scholars have defined education in different ways, which are related to different situations. Education is not only intellectual development it also include physical, social, and emotional and all round development of other areas. Education is nor limited to a specific point of time of an individual life but it takes place through out the life. Education is not confined with the boundary of a school but it may be acquired from home, society, play ground and so on.

A few relevant definitions of education-

- According to Plato- “Education helps in the body and soul of the pupil all the beauty and all the perfection he is capable of”.
- another scholar defines education is the creation of a sound mind in a sound body
- It is also defined that education is the harmonious development of body mind and soul.
- According to Charles A Bucher, “physical education is an integral part of the total education process and its aim the development of physically mentally emotionally and socially fit citizens, the medium of physical activities which have been selected with a view to realizing their outcomes”.

From these definitions it is clear that education and physical education are complementary to each other.

In the past traditionally it was thought that physical education means physical activities. But it was a wrong conception. Physical activities do not necessarily means physical education rather they may be called physical exercise. Issues of physical education not only deals with physical activities but it helps in attaining mental development and social virtues as well.

D.K. Mathews says “Physical education is the education which is acquired through physical activities”.

Hop smith and Clifton says Physical education refers to scientific and systematic movement of limbs.

According to **J.B. Nash**- Physical education is that of the whole field of education that deals with big muscle activities and their related responses that bring changes in an individual’s body and personality. From this definition above it is found that the essence of physical education is all round development of an individual’s personality. As a result of physical education one becomes physical fit, mentally sound, emotionally balanced, socially adjusted, morally true and spiritually up-lifted. All this outcomes are achieved by means of recreational activities games and sports.

Aims of Physical Education.

The main focus of physical education is all round development of an individual and creating a sound mind in a sound body. The main purpose of physical education is to help children grow naturally through amusement and games and sports. So that they become active and capable individuals. Different physical education has expressed different opinion about the aims of physical education. According to Williams the aim of physical education is all round development of personality through development of physical social and other areas of an individual. Book Walters states that the aim of physical education is the optimum development of the physical, socially and mentally integrated and adjusted individual. This aim can be achieved through participation in selected sports, rhythmic, and gymnastic activities conducted according to social and hygienic standards.

M.G. Mason and A.G.L. venter said about the aim of physical education as follows-

- 1) To help children live a healthy life.
- 2) To help children flourish their creativity and talents.
- 3) To help children grow socially.
- 4) To stimulate moral, emotional, mental and cultural qualities.
- 5) To development leadership qualities through sports.

From the opinions of physical education as discussed above it can be concluded that the aims of physical education are very similar to that of general education. It also stresses on optimum development of personality through participation systematic and guided games and sports and similar activities.

Task 1- Write the definition of physical education on poster paper and display on wall.
Task 2- Write the aims of physical education on the board and readout in the class.

Lesson-2: Objectives of physical Education: Generally we do not differentiate between an aim and an objective in most cases. Many cases we use them interchangeably. But these two terms are not synonymous. There are differences between them. Aim is the final goal where as an objective is a short and specific step towards the goal. For example in case of your climbing the stairs to reach the roof, the roof is the aim and every step of it stairs is an objective. An aim exists in human imagination which can not be depicted in reality. But an objective is real. Man can achieve an objective and can measure it also. Physical educationist has mentioned several interim measures to attain the aims. These measures are known as the objectives of physical education. Though experts have agreed upon some objectives, there are different opinions about some other objectives as well. From the opinions of majority of experts about the some primary objectives, we can identify common objectives of physical education. Considering the opinion of various thinkers, the objectives of physical education can be divided into four. They are

- 1) Physical fitness.
- 2) Mental development.

- 3) Character development.
- 4) Social adjustment.

1. Physical fitness:

- a) To play well maintaining the rules and regulation of games and sports
- b) To achieve specific objectives through hard work
- c) To improve human capacity through neuro-muscular coordination
- d) To ensure balanced development of body and mind.
- e) To attain strength maintaining good health
- f) To develop tolerance and self confidence

2. Mental development:

- a) To develop quick decision think ability
- b) To acquire knowledge about ethics & morality
- c) To be motivated for service and self sacrifice
- d) To foster friendly and competitive attitude among different team.

3. Character developments:

- a) To develop sense of obedience and morality
- b) To develop respect for law through games and sports
- c) To develop sports man like and friendly attitude
- d) To show respect for opponent
- e) To help control emotion and become self disciplined

4. Social adjustment:

- a) To acquire leadership qualities
- b) To know constructive way of leisure time
- c) To develop ability to participate in various cultural programmes.
- d) To maintain friendly relationship with others and to participate in welfare activities.

From the opinions of the physical educationist as mentioned above it can be said that the objectives of physical Education are very similar to that of general education. It also focuses on optimum development of personality of individuals and also on helping them master the art of games and sports through systematic guidance and participation in sports

Task-1: Write the aims and objectives of physical education as poster paper and display on the wall.

Task-2: In groups explain what can be acquired through the objective social adjustment.

Task-3: Write down the objectives of physical fitness on the board.

LESSON-3 Need and importance of physical education: Physical education maintains develops good coordination between body and mind. Any education is not complete without physical education. Physical education plays a vital role to inculcating those qualities into people which help individuals to grow as healthy, emotionally-balanced and responsible citizens. Man loves recognition by the society. It is the recognition through an individual's personality is developed. Therefore, physical education has a significant role in developing leadership and personality. Our body is a combination of some organs. Again each organ consists of different types of muscles,

bone, artery, vein. In order to keep body fit a number of system are functioning inside the body. Physical fitness is must to keep these systems functional. As a result lack of balance nutrition, lack of necessary physical movement, and required rest and sleep the body does not develop properly and fails to keep fit. In fact modern education puts equal emphasis on physical and mental development. The necessity of physical education at school is mentioned sequentially. A school is a social institution, so, a school is committed to the society and the country for social conservation, social reforms, and positive social changes. The school is responsible for proper development of human resource to develop the children of today as the good citizens of tomorrow. In this respect the school plays dual roles. First the prime duty of school is to help young students develop their personality, it includes physical, mental and spiritual aspects of the students secondly, the schools help the students transform biological entities into social ones. It includes development of character, social values and social adjustment.

Out of these two tasks the first one is direct responsibility where as the other one is the indirect responsibility of a school. Physical education is necessary for all round development of a student. According to Maslow these needs of a student are divided into three stages.

1. Biological needs
2. Psychological needs
3. Social needs.

1. Biological needs: Physical education has direct contribution in fulfilling a student's biological needs. In this respect the role of physical education is as follows-

- a) Physical education fulfills biological needs of quick movement of body by students.
- b) It makes beautiful and strong physical structure as a student.
- c) It develops physical ability and capacity of students
- d) It develops immunity of students
- e) Students acquire expertise in sports through learning skills of various games.
- f) Physical education develops a sound body for a sound mind.

2. Psychological needs:

- a) Physical education builds mental and intellectual foundation of children.
- b) It removes monotony and boredom of every day life as students.
- c) It develops character of students
- d) It develops self awareness, self dependence, self realization and self respect among the students,
- e) It helps student adjust with environment
- f) It develops sense of creativity among the students,
- g) It keeps students away from harmful addiction
- h) It helps students choose the means of recreation and enjoy pass-time

3. Social needs:

- a) Physical education helps students to develop co-operative attitude through competition.
- b) It helps develop mental qualities which reflect social relationship through game & sports.

- c) It develops the leadership qualities
- d) It makes the students familiar with social norms and culture
- e) It prompts national and international fraternity
- f) It creates liberal attitude and sense of social responsibility among the students.

Task-1: Discuss Biological needs in small groups.

Task-2: The class will be divided into three groups and each group will discuss and explain at least two of the psychological needs.

Task-3: Show the social needs on the board.

LESSON-4: Principles and foundation of Physical Education: Principles are established belief and doctrines based on fundamental truths supported by scientific theories, historical facts and philosophical ideas. Principles are developed on the basis of actual information and they are utilized in decision making process. According to Barrow, Principle may be defined as truths of general concepts based on facts and used as guider for taking action and making choices. A Principle based on scientific system usually applicable to in all situations and it is no changed easily. But it is to be remembered that principles are not eternal. In course of time principle may be modified and changed being influenced by new theories and new facts. But principles are relatively unchangeable. Acceptability of principles are determined by their application and effectiveness.

Principles of Physical Education: Based on sources principles of physical education are divided into a number of categories they are some of important categories are as follows-

- (1) Biological Principles
- (2) Psychological Principles
- (3) Sociological Principles
- (4) Biomechanical Principles
- (5) Philosophical Principles

(1) Biological Principles: From biological point of view man is also a living being. Man has altering higher level of biological status as a result as evolution in order to retain biological existence like any other living being man needs food, rest and physical activity. In physical education few remarkable principles derived from biological sciences are as follows:

- a) Physical exercise is biological foundation of life. Through physical exercise helps muscles develop maintaining capacity fitness and coordination different organs and systems. Hence physical exercise is necessary to maintain biological exercise.
- b) Physical exercise improves capacity and effectiveness of human body. The necessary of systematic physical exercise has been increased as physical labor has been decreased in this machine dependent age of modern time. Student should develop the habit of physical exercise through physical education. Proper emphasis should be given on physical exercise and development of values.

- c) A man's physical structure, height; muscle type and speciality of nerves system are dependent on genetic background. It is possible to make special improvement in these areas through training. This Principles should be kept in mind at the time of selecting players.
- d) The total physical characteristic of an individual are outcomes of complex action and reaction between genes and environment. So, it is important to create appropriate environment for proper development of heredity.
- e) There are specific difference of physical structure and physiological capacity between a man and a woman. This Principles should be kept in mind at the time of designing programme of physical education.
- f) Physical and physiological capacities are changed at different stages of intellectual development. The degree of this change varies in different stages. The application of this Principle is very essential at the time of developing school curriculum for physical education.
- g) Physical exercise is a key way of developing and retains physical capacity and effectiveness.
- h) Specialty of physical capacity depends on the type of physical exercise. So separate training programmes are required for improving strength, power and endurance etc.

2. Psychological Principles: Psychology is a science of human behavior. Behavior of an individual at the time of participation in games and sports is analyzed using psychological knowledge. Principles derived from psychology are as follows:

- a) As a result of participation in physical education programmes children not only develop physically but also psychologically.
- b) Physical health and psychological health of an individual are inter related.
- c) Attention and interest of children help them learn skills of games.
- d) Children's skill development in games takes place according the theory of learning and teaching.
- e) Mental preparation is necessary for children to learn anything.
- f) Personality of children develops through participation in games.
- g) To participate in games is natural tendency children.
- h) Games helps in development of children knowledge
- i) To develop skill in a specific game becomes easy for people will special bent of mind.

3. Sociological Principles: Man is a social being, This Principles helps in development of social affairs together with development of personal affairs, Principles derives from sociology are as follows:

- a) A child is not born as a social being. Their socialization takes place in appropriate social environment.
- b) Different social qualities and social relationship are reflected through games.
- c) There is no difference between the rich and the poor and the elite and the commoners in the play ground.

- d) Games and sports help us develop cooperation, brother hood and cultural integration.
- e) Games and sports are the best ways of recreation and passing leisure time.

4. Bio-mechanical Principles: Mechanism is a science that deals with the force applied to the object and its impact on it. Bio mechanism as an applied branch of mechanism deals with various forces that act on human body at the time of sports and their effects, Principles derived from bio mechanism are as follows:

- a) No Physical exercise or skills of games are complete without application of force/power.
- b) Force applied on the object allows create motion.
- c) Force in human body is generated through muscle contraction.
- d) Static and dynamic are two primary states of any object.
- e) Motion in games is a result of action and reactor of different forces.
- f) In human motion takes place following mechanical system though there are some biological limitations.
- g) Balance of human body mostly depends on the position of centre of gravity of the body.

5. Philosophical Principles: Philosophical Principles are based on various branches of knowledge of the universals such as idealism, naturalism; Principles of physical education derived from these sources are given below:

- a) Physical education is not the education of physics only; rather all round development of personality in the aim of physical education
- b) In physical education child centric approach is more important than subject centric approach.
- c) Physical education put emphasis on natural way of teaching
- d) Games and sports are a powerful medium for child development.
- e) Physical education is a friend and guide to a student
- f) Physical education teaches on international to adjust with the society.
- g) Physical education has its applied aspects too.
- h) Programme of Physical education should be set according to ability and interest of children.

Foundation of Physical Education: Modern Physical education is a scientific and education-based effort for development of personality. Therefore the programmes of education are developed on the basic of scientific theories and research findings. For the growth and development of children physical education programmes are designed according to physical, mental and social characteristics and needs of the children. For proper development and implementation of physical education programmes the

knowledge about structure of human body etc functions and relationship of individual with learns and society is highly important. Scientific foundation of physical education have been built relevant knowledge of Biology, Psychology and Sociology.

1. Sociological Foundation:

A student through Physical education will acquire the following qualities-

- a) To understand relationship of physical education with society.
- b) To learn from society
- c) To be socialized through physical education
- d) To arose sense of social responsibility
- e) To learn social welfare.

2. Psychological foundation: Physical education bring physical, mental, behavioral, and social changes in individuals, None of this changes is possible without change of mind psychology is the science of mind. In order to bring any change in a man one has to know the mind in various ways. Here lies the relationship of physical education with psychology and education psychology. Educational psychology deals with applicable methods of teaching and learning.

3. Biological Foundation: Biology is the science of life and live animal. According to biological sciences man like other animals was created in this earth through evolution. In the light of theory of evolution subjects like biological foundation of life, physical structure, and shape, physical capacity man-woman different, physical development etc are included in biological foundations of physical education.

Task-1: In groups discuss the principles of physical education.

Task-2: Discuss the sociological principles

Task-3: Display the foundation of physical education on a poster.

LESSON-5: Programmes of physical education: Programmes of physical education in an educational institute include games and sports, Physical exercise and all other health related as well as recreational activities. All the activities performed by a physical education teacher are included in physical education programmes.

Physical education programmes are divided in three categories.

- 1) Service programme
- 2) Intramural Sports
- 3) Extramural sports

1. Service programme: In an educational institution service programme of physical education includes government instructions about physical education. Physical education class, competition, assembly and local instructions etc. A physical education teacher has observed all these programmes. By government instructions we mean all the orders and circulars issued by ministry of education relating to physical education programmes such as compulsory daily assembly, three classes a week, participation in inter school sports competition and games and sports on national days and so on. By local instructions we mean the rules and regulation of an institution such as maintaining cleanliness of

campus, participating in annual sports competition, participating in cultural programmes, participating in physical development test and running tiffin programme etc.

2. Intramural sports: Intramural is a Latin word. Intra means inside and mural means wall. So intramural sports mean all the games and sports taking place within the boundary of a school. For example annual sports competitions class ix vs x cricket match of class vi A section vs vi B section competition of any type. If there are different houses in the school, competitions between them are also called intramural activities. Besides, competitions between departments or first year vs second year are also included under intramural sports. In short all the sports or competitions that take place within the institutions are called intramural sports.

3. Extramural sports: Extra means outside and mural means wall. So all the games and sports competitions outside the wall are called extramural sports. The games and sports or any type of competition of one school or college with or other are commonly called extramural competition. For examples inter school, inter college, inter university, inter club etc. By participating in an extramural competition the strength of one's own team can be tested. Players of different standard participate in such types of competitions. As a result coming in close contact wth good players one can learn good behavior and better technique from them. Through these competitions students can develop team spirit, mutual understanding, competitive attitude and good relationship.

Task-1: Discusses the programmes of physical education in groups.

Task-2: Write on the board what you understand by service programmes

Task-3: Show the differences between intramural and extramural programmes on poster paper.

LESSON 6: Physical education in Bangladesh: The importance of physical education in Bangladesh is increasing day by day. The subject of physical education is getting priority in educational institutions. Though in the past physical education was thought as the education relating to body in the present time it includes development both body and mind. In Bangladesh there are six physical education colleges under the Ministry of youth and sports. There is a separate department for physical education under the directorate of secondary and higher secondary education where a deputy director is head of this physical education department. This department performs some specific task they observe national schools sports competition twice a year. They also arrange refresher course for physical education teachers of secondary schools and madrasa twice a year. The deputy director performs various programmes based on the memorandum of understanding (MOU) signed by Ministry of education and ministry of youths and sports with different sports federations for various games and sports programmes. In September 2002 Ministry of youth & sports and Ministry of education singed an Mou regarding infrastructure development, expansion of games and sports coverage and improvement of their standard. There is a district sports officer under Ministry of youth and sports in each district. The DSO can expand physical education programme from district to upazila down to union level.

The present status of physical education in Bangladesh is mention below-

- 1) The government of Bangladesh has made the subject of physical education and health compulsory up to class viii.
- 2) From 2013 the subject of physical education. Health science and sports is going to be compulsory for class ix and x.
Holding of examination of physical education has been made compulsory which will make physical education more important.
- 3) The areas in which high emphasis should be given for the development of physical education are physical and mental development of children and development of education system suitable for them. In this regard physical education gets special emphasis in primary schools.

Task-1: Discuss about the status of physical education in Bangladesh.

Task-2: Write down the different programme of physical education in Bangladesh.

Exercise

1. Put tick mark to show correct answers.

- 1.1 Aim of physical education is-
 - a) To systematically develop a child to live a healthy life.
 - b) To give an idea about education
 - c) To get good marks
 - d) To motivate a child for physical education
- 1.2 Extramural sports meant-
 - a) Body related games
 - b) Competition with others school
 - c) Competition within the school
 - d) Competition within girls.
- 1.3 Participation in sports helps-
 - a) Refresh body and mind
 - b) Increase sadness
 - c) Make hands and legs painful
 - d) Feel drowsy.
- 1.4 The year of signing the MoU between ministry of sports and ministry of education is
 - a) 2005
 - b) 2001
 - c) 2003
 - d) 2002

2. Fill in the gaps will appropriate words

- a) Physical education brings.....development of body and mind.
- b) Without physical education, education remains.....
- c) our body is a combination of some
- d) General education and physical education areto each other.
- e) Physical education develops.....of children.

3. Match the words from left side with the words in the right side-

- | | |
|-----------------------|---|
| a) Physical education | a) Inter school completion |
| b) Philosophy | b) Service programme |
| c) Daily assembly | c) All round development of body and mind |
| d) Extramural | d) Naturalism. |

4. Short questions

- a) What is physical education
- b) What do you know about biological foundation of physical education
- c) Define intramural programme
- d) What is biomechanical principle

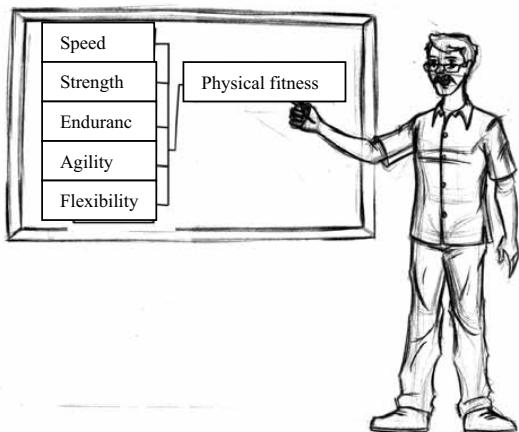
5. Essay type question

- a) “Sound mind in a sound body” analysis this statement.
- b) Discuss various types of principles of physical education
- c) Explain aims of physical education
- d) Discuss in details the programmes of physical education.

Chapter- Two

Physical Fitness

The main objectives of physical education are to all in physical fitness. So it is important for students to have a clear idea about components of physical fitness there relation with games and sports and means of ways of evaluating physical fitness. Students can develop physical fitness through physical exercise though there are differences in types of physical exercise for boys and girls. They should know role of specific games and sports in developing strength, endurance, speed, power, agility, and flexibility students will be able to lead healthy and discipline life by means of physical fitness.



At the end of this chapter we will be able to-

- Explain importance of physical fitness
- Explain ways of attaining physical fitness
- Discuss positive aspects of physical exercise in attaining in development physical fitness
- Discuss which physical exercise is suitable for boys or girls to have physical fitness.
- Realize effects of strength, speed endurance, power agility, flexibility in attaining physical fitness.
- Practice appropriate physical exercise through appropriate games suitable for boys and girls to develop physical fitness
- Do correct exercise to develop strength, speed, endurance, power, agility, flexibility for physical fitness
- Be habituated in living healthy and discipline life through physical fitness.

LESSON-1: Importance of physical fitness: Generally physical fitness means ability to do work. In broader sense physical fitness refers to ability to maintain health and normal life relating biological existence physical fitness includes ones physical mental and social fitness. Therefore it is thought that physical fitness and wellness are a holistic approach. A man with physical fitness can also maintain mental health, emotional balance and social relationship beside physical health to explain physical fitness as a holistic approach AAHPER (American Alliance of health physical education and recreation) has included the following as physical fitness.

- a) Physical health according to genetic inheritance
- b) Strength, speed, endurance, coordination and technique required to perform day to day activities and to face emergency.
- c) Proper attitude and values for performing day to day activities.
- d) Necessary emotional balance to manage stress of complex life style of model time
- e) Capacity to adjust with team and required social awareness
- f) Required knowledge and analytical power to solve the problems of faced in way of life.
- g) High morality and strong personality to perform duties and responsibilities as a good citizen of democratic country.

There for the concept of fitness includes total fitness of an individual. In fact fitness is based on the concept of totality of a human. Among all the components of total fitness the most practical, the most essential and the most primary component is physical fitness. This aspect as fitness is vital for maintaining biological existence physical fitness is the ability to perform physical activity. So degrees of physical fitness level varies depending on nature of physical activity. For example physical fitness of a common personal for walking, moving, sitting and doing other general activity and physical fitness of a player are same. A clear defined physical fitness as- the ability to carry out every day task will vigor and alertness without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies Many people think that in this instrument based modern life where physical activity has been decreased remarkably the above definition of physical fitness is not fully applicable in our context capacity of physiological organs and systems and ability to adjust with environment are some important dimensions of physical fitness.

Importance of physical fitness:

A student who acquires physical fitness will be able to leave a healthy life over coming all the odds and dangers of life. For example-

- 1) To perform any physical activity smoothly
- 2) To be able to face any emergency situation.
- 3) To develop immunity to fight diseases
- 4) To be attentive in study with fresh mind through attaining physical fitness.
- 5) To develop skills required for any type of game.

Task-1: What you know about physical fitness. Write on a poster paper and show to the class

Task-2: In groups discuss importance of physical fitness.

LESSON-2: Physical exercise for games specific physical fitness: There are different types of physical exercise for different games. A single type of physical exercise is not applicable for all games. For example, strength of hands is more required in some games where as strength of legs is more important in some other games. Game specific physical exercises are essential to do better in that game. For example, **Football:** In football most important components of physical fitness are strength, endurance, agility. Therefore football player should take exercise more to develop strength endurance and agility.

Swimming: Swimmers need to do more exercise to improve strength of hand and leg and higher endurance.

Basketball: The basketball players should give emphasis on development of endurance agility and strength of legs.

Volley ball: Good strength of hands helps volleyball players smash the ball. So volley ball should take physical exercise to improve strength of hand.

Handball: Handball players requires explosive power of hand and leg agility and endurance to do well in the game. So physical exercise is suitable for improving explosive power of hands and legs, endurance and agility are important for them.

Kabadi: The kabadi is known as a game of strength, only strength is not enough to do well as a player. In kabadi strength and agility are more important than other component. Kabadi players should take special care to improve strength and agility

The following chart shows types of physical fitness for specific games.

Requirement of physical ability is show in the table below:

Game	Endurance	Agility	Energy		Age upto	
			abdomen	hand and arm		
Football	H	H	H	M	H	35 years
Cricket	M	M	H	M	H	40 years
Handball	M	H	H	M	H	all age
Volley ball	L	M	M	M	H	30 years
Hockey	H	H	H	M	H	30 years
Basketball	H	H	H	L	L	30 years
Swimming	H	M	H	M	H	30 years
Sprint	M	M	H	M	H	40 years
Long-distance running	H	L	H	M	M	40 years
Kabadi	M	H	H	M	H	35 years
Badminton	H	H	H	M	M	45 years

H-Highly necessary

M- Moderately necessary

L-Less necessary

Task-1 : What types of physical fitness are required for a football player,

Task-2 : Write down on board the differences of physical fitness between a sprinter and a long distance runner.

Lesson-3: Importance of physical exercise according to age and sex:

According to Age: Physical education is applicable for people of all age. But programmes of physical education will be different for different age group. Not only physical exercise but also food likes and dislike and physical abilities are also different for different age group. For example-physical ability of a children is not equal to that of adult people. So for development of their abilities exercise through games should be introduced. Frog Jump, touch and back, crow Jump or recreational games are some physical activities that can improve physical ability of children. Selection of exercise and games for adolescent should be done systematically. Standing a line, exercise of hands and legs, running with ball, touch and play etc. games and physical exercise can be used to develop physical abilities of children. Reminder, children and adolescent should not participate in weight lifting exercise. It cause harm to body. Youths should take part in exercise systematically. So they can learn skills of different games which will build foundation in sports. We should keep in mind that exercise may cause fatigue among students. Selection physical exercise for specific part of the body is essential. Physical ability may be acquired in this way. For elder people light physical exercise is require for maintaining physical ability.

According it Sex: Though physical education is equally important for all, in reality it is different to implement physical education is different for man and women it cannot be childhood. Physical structure of boys and in their childhood more or less same. Priority should be given on recreational games, immetating activities, jumping and running etc. at the time of designing physical education programme for children. To ensure mental development of children physical education programme for children should be implement through games and sports. There is very little difference between boy and girl during 7-12 years of their age. This time girls donot participate any heavy games. Boys show more interest in team games though both boys and girls participate in individual games. For examples, badminton, table tennis, running etc. are a few individual games. From this stage physical education programme for to develop their physical capacities. With attuning puberty physical change take place among boys and girls. For this reason their activities are also different. Boys like athletics, swimming etc beside team games. Boys do not hesitate to challenge at this stage. In behavior of girls hesitation are shiness appear due to their physical changes. This is why physical education programme of girls differ from that of boys. In games and sports competition such as swimming, athletics,

badminton, table tennis. For boys and girls there being big differences in physical strength and tolerance, their physical programmes are different. Therefore, as children grow difference in their physical activities become distinct boys and girls participate separately.

Task-1: Make a list of physical activities suitable for children and adolescent according to their age.

Task-2: Discuss why physical activities of girls are separate from boys in youth.

LESSON-4: Effect of exercise on physical fitness: Exercise is essential for physical fitness. Without physical exercise no one can achieve/acquire/develop physical fitness. People of all age should take regular specific exercise systematically and also following methods of sports training. There are many changes take place inside the body due to exercise which develop physical fitness. What are the changes take place due to exercise are given below-

Heart muscle

1. Develop strong cardiac muscle: Blood circulation increased due to exercise as a result of this efficiency of heart developed. Efficiency of heart increased. Heart muscle become strong. Heart volume increased. Absent of disease as efficiency of heart increased. Which is called athletic heart.
2. Pumping capacity of heart increased: Heart of common people pumped 130 milliliter of blood. Blood circulation increased due to exercise so pumping capacity of heart increased. So heart become strong, efficient and develop immunity.
3. Pulse rate: Pulse rate increased if common people take exercise/do work. It usually takes time to become normal. Tiredness can not disappear easily, on the other hand pulse rate increase and become normal faster of a good player after taking part in exercise or participate in games and sports. Therefore players recover faster from fatigue than in comparison to common people.
4. Blood circulation: One take part in exercise or participate in games and sports that increase blood circulation. So, efficiency of heart muscle increased and stronger than common people.
5. Blood cell: There are three types of blood cells.
 - a) Red blood cells (Erythrocytes)
 - b) White blood cells (Leukocytes)
 - c) Platelets (Thrombocytes)
- a) Red blood cells: The amount of red blood cells in blood are highest. The amount of red blood cells in male is about 50,000,000 per cubic millilitre of blood and about 45,000,000 per cubic millilitre in female. The number of red blood cells increased and

- live long due to effect of exercise. Red blood cells with the help of hemoglobin supply oxygen to different parts of the body and control body temperature.
- b) White blood cells: The amount of white blood cells are less in our body and 6000-8000 per mililitre. White blood cells are round, colorless and with nucleus. Generally they live 12-13 days. If we take exercise it will live more and number will also increase. White blood cells kill bacteria by surrounding and digesting them therefore physical efficiency strong.
 - c) Platelets: Platelets also known as thrombocytes, are disc like structures that help stop bleeding. They are smallest formed elements. If a blood vessel is cut, platelets stick to the edges of the cut and to one another, forming a plug within 3 minutes.
 - 6. Respiration: During taking part in games and sports rate of respiration increases. As a result of this oxygen absorption removal rate of carbon dioxide increases. Depth of respiration also increases. Therefore Physical efficiency increased.
 - 7. Muscle: There are different types of muscles in our body. The number of muscle fiber is not increased but size of the muscles increase, tissue becomes thick and strong. So that improves physical efficiency. There are many changes take place due to effect of exercise that helps in improving physical efficiency.

Task-1: What changes in heart take place due to physical exercise? write on poster paper and hang on a wall.

Task-2: Explain what changes in red blood cells & white blood cells take place due to physical exercise.

LESSON-5: Exercise to improve strength, endurance agility and flexibility for physical fitness: Every body should have knowledge about their own body before taking any physical exercise. This knowledge is also essential for the sake of maintaining health. Knowledge about any ones organs and systems helps them select required physical exercise to develop the organs. By taking appropriate physical exercise we can develop our body to its optimum level. Physical fitness depends on its five components namely-

- 1) Speed
- 2) Strength
- 3) Agility
- 4) Flexibility
- 5) Endurance

- 1) Speed:** Speed means quickness of movement. The faster one can move, the more speed they have. We should take physical exercise to improve strength of leg muscles in order to gain speed.
- a) In supine position move your leg up and down.
 - b) In multi gym move the iron weight in and out using legs.
 - c) Practice 25 m. and 50m. sprint again and again.

- d) Practice running using running stand.
 - e) Run on sand to strengthen muscles. If we practice above-mentioned physical exercise it will ensure strength and growth of leg muscles.
- 2. Strength:** Strength is the ability to overcome resistance or act against resistance. For example-By developing muscles of hands we can increase strength of the hands. Some physical exercise to develop strength of hands are as follows.
- a) Move dumbbell up and down closing hands.
 - b) Lie in supine position and push barbell up and down with hands.
 - c) Put hands on floor parallel to shoulder and push up and down. Slowly raise one leg and push up.
 - d) Throw medicine ball.
 - e) Different types of exercise of hands in multigym. We can develop strength of hands and shoulders by doing above mentioned physical exercise systematically as per instruction of the trainer.
- 3. Agility:** Agility is the ability to perform a series of movement in rapid succession in opposing direction. The following physical exercise can improve agility.
- a) Run fast and stop with whistle.
 - b) Practice 10 meter shuttle run. Do this exercise for specific period.
 - c) Practice 20 meter shuttle run for two minutes. The one who can run for highest number will be champion. Thus agility will be improved.
- 4. Flexibility:** Flexibility refers to the ability to achieve one extended range of motion with being impeded by excess tissue. The following physical exercises are important to develop flexibility of our body.
- a) Stand up on a bench with your leg straight bend your forward slowly keeping hand attached to ears the one whose body bents more than other is more flexible.
 - b) Lie in supine position keep hands closer to ear and fold leg at knee and move the body up and down. It is called aching.
 - c) Sit on the ground keeping your leg straight and try to touch your toe while your hand are attach to ears.
- 5. Endurance:** Endurance is to overcome resistance under the condition fatigue. Endurance is a must for games and sports. It is to mention that games like football long distance run, marathon, basketball etc require high level of endurance. Here are some physical exercises to develop endurance.
- a) Run slowly and continuously for a long time.
 - b) Run across uneven places.
 - c) Run one kilometer when the 1st day one and half kilometer the next day and so on. Gradually increases the distance. Any student by acquiring (5) five virtue can develop physical fitness and these increase concentration to studies

Task_1: Write down the physical exercise in a poster paper hang on wall.

Task-2: Write down the exercise of increasing endurance one of leg another and explain.

Exercise

1. Put tick (✓) mark on write answer.

1.1 Development of strength of which part of the body is more necessary in 100 M. sprint.

- a) Hands. b) Leg muscles c) Chest d) Waist

1.2. What players do need endurance most?

- a) Sprinter
b) Thrower
c) Jumper
d) Long distance runner

1.3. Does heart beat increase at the time of exercise.

- a) Increase
b) Do not increase
c) Remain unchanged
d) Reduces

2. Fill up the gaps with appropriate words

a) We will be able to lead a life by improving physical fitness.

b) Physical exercise is different for games.

c) Physical exercise increased physical of heart increased. For developing physical efficiency and as a result heart become big and free from disease thin is why thin heart is called

3. Match the words of left side with the word of right side-

- | | | |
|------------------------|----------------|-----------------------|
| a) Heart attack | Athletic heart | a) Strength of hands |
| b) Throw medicine ball | | b) Red blood cells |
| c) Platelets | | c) Heart |
| d) Endurance | | d) Long distance run. |

4. Short questions.

- a) What do you mean by physical fitness?
b) According to sex what type of exercise one should do?
c) What are the benefits of exercises?

5. Essay type questions

- a) Discuss what changes take place due to exercise
- b) Discuss the importance of physical fitness.
- c) Explain necessity of strength and endurance.
- e) Prepare a list of games that showing which game requires what type as strength.

Chapter Three

Mental Health and Fatigue

Before we discuss anything about mental health and fatigue, we need to know what health is. Usually by health we mean physical healthiness or a state of body free from any diseases. But in broad sense, mental health is also necessary beside physical health. Mental health is largely dependent on physical health. Whatever may be our business, we do not feel good and motivated to work and also our performance falls if our body is not fit. Mental fitness is maintained through harmonious coordination between personal and environmental demands. Thus, an individual who can maintain a good balance between personal demands and social demands successfully is called a mentally fit person. It is the mental health of an individual that shows full and harmonious coordination between physical and mental activities of the whole personality. Temporary fall in performance capability is seen in an ordinary person or an ordinary player as a result of excessive workload or stress. Again, as a result of prolonged engagement in the same job, people experience changes in physical and mental behaviours toward the job. Consequently, there decreases performance capability of the individuals. This change in a person's physical and mental state is commonly called tiredness or fatigue.



Mentally healthy children vs. fatigued children

At the end of this chapter we will be able to-

- explain the role of mental health for healthy life style.
- discuss about the nature of mental behaviours.
- explain human behaviours depending on different situations.
- explain different ways of reducing mental stress.
- explain the concept of fatigue and its various categories.
- explain causes of being fatigued and its consequences
- discuss about the means of removing fatigue.
- be habituated in healthy life style by removing fatigue.

Lesson-1: Mental health and its importance- At the very start of this chapter, discussion on mental health is made. Generally, mental health means “full and harmonious functioning of the whole personality”. Games and sports help keep our body and mind fit by maintaining physical as well as mental health. As malfunctioning of a body organ creates physical illness so is the case with mind. When mind does not function properly, we call it mental illness. In the context of games and sports the students develop competitive attitude and in any stage of competition if they suffer from mental illness, it can be observed more explicitly. Games and sports require not only physical exercise but they are also the causes of happiness of victory and pains of failure. Since sportspersons maintain physical fitness, they require to be mentally fit as well. Physical health and mental health are complementary to each other. Once a student wins in any sports competition, they become more confident to do better in future events. With a view to retaining this success and performance, now they spend more time for training and practice, and thus become more hard-working. As a result of such victories, the winner may develop negative attitudes such as over confidence, self pride and tendency to belittle others. Therefore, there may be both good and bad results of a player’s competitive attitude.

On the other hand, when a player experiences defeat in any competition, it creates disappointment and they try to accuse others for the defeat. Many players may give up playing as a result of utter disappointment and mental tiredness. If a player cannot take the normal phenomenon of ‘win and loss’ of any competition easily, there appears inconsistency in their activities as a result of mental stress. In this respect, sports teachers or trainers should work together and try hard to maintain mental health or mental balance of the players and students.

Task-1: A group of students will write on the board how physical fitness impacts upon state of mind and then will discuss. Another group will write on the board how physical illness affects mind and then will discuss. The teacher will correct the mistakes in the discussion by the students.

Task-2: How victory or defeat in a competition affects and influences a player? Students will write it at home to discuss in the classroom next day.

Lesson-2: Mental behavior, its classification and ways of removing mental anxiety- Human nature is very complex to unfold. To discuss this nature and behaviours of human beings it can be said that they have come to the present state through gradual evolution starting from very primitive time of human civilization. According to the theory of evolution as propagated by Charles Darwin, a British Scientist, it has taken many ages for humans to reach their present status through evolution from lower animals to higher beings. During this process of evolution over the ages human beings have inherited many characteristics and motivations of their fore fathers. According to Darwin’s theory of evolution, as a result of continuous and gradual change and evolution in living beings humans have evolved from unicellular microorganisms to aquatic

animals first and then to caudate (tailed animals) before finally taking human appearance. Human beings, after taking human shape as a result of evolution, have to pass through various biological steps before they reach maturity. These steps are childhood, puberty, youth and old age. At different stages of biological evolution when physical changes occur, every human is influenced by specific types of behaviours. At one stage, these behaviours are mainly influenced by arrangement of physical-chemical functions on the one hand, and by tropism on the other hand. Tropism is the simplest process of adaptability pattern of lower class plants and animals to stimulus. These types of behaviours are controlled by direct action of physical and chemical stimulants. Beside this, such behaviours are also influenced and instigated by reflex actions and inherent reactions. So, as life proceeds there appears complexity in nature of behaviour and humans solve all the complexities by dint of natural intelligence, reasoning and power to achieve the targets.

Classification of mental behaviours: To know much about human nature makes us speechless in surprise thinking that there exist wonderful dissimilarities between individuals' characteristics and behaviours. For example, someone is extremely jolly but another is sad; one is fond of funs but one is grave; one is lively but another is serious; one is intelligent but the other is dull; one is cautious but the other is adventurous; one is soft and polite but the other is rough and rude. There are many such examples of contradictory characteristics which vary from individual to individual. When these characteristics are evident in a person, we call them personal characteristics. By means of this personal uniqueness, one person can be distinguished from another. We need to know the reasons of this personal uniqueness. It is found that all the children who were born and brought up in the same environment of a family do not share same characteristics. They differ in their personality traits and behaviours. Some scholars say that these differences are due to physical structure but some others opine that due to genetic uniqueness or environmental condition all these differences in personality occur. Which standard or principles do we apply to consider these contradictions in human individuals? It is called "principle of normality". From the view point of mental health science, the unique characteristics of human behaviours that are consistent with a person's mental state and nature and through which one's whole personality is reflected, are called 'normal behaviours'.

Another stream of characteristics of personality is physical type that largely depends on physiological structure of an individual. But the stream of mental type is a person's behaviour or disposition that mostly depends on family or social environment. Characteristics of personality are exposed through good character which is achieved for fulfillment of aims, objectives and ideals of human life. In the light of aims, objectives and ideals of life, one is considered as good or bad in the society. Now, we can divide mental behaviours into four types: 1) natural, 2) simple/ plain, 3) sensitive/responsive, and 4) psycho-neurotic diseased. Each of the mental types of mental behaviours can be

explained with examples. In fact, mental health can be categorised into above-mentioned four types.

Ways of removing mental anxiety: By health we mean physical and mental fitness. Body and mind are complementary to each other. If there is mental unhappiness, it naturally affects physical health as well. Mental illness may cause a lot of failure and distress in human life. Mental illness may initiate mental perversion in children for which parents and guardians should be especially careful to remove any anomaly of children's behaviours.

Mental condition and rules of mental health are the subject matters of mental health science. It includes subjects like psychology, mental diseases, herbal botany, zoology, social expansion etc. Child psychology and education, and mental health science help to prevent different types of mental anxiety, mental perversion and disorder. Mental disorder includes mental diseases, shortage of intellect, neurosis, obsession, mental morbidity, crime-proneness etc. In order to remove or prevent mental anxiety of children, good education for them, bringing them up in a healthy style, good care, good family environment and positive attitude of parents are essential. Again, patient behaviour with children, education for them, child-friendly environment, nutrition, care, and all other facilities necessary to live happy life should be made available with a view to manage complex nature and mental anxiety of children.

Task-1: In groups students will discuss and show arguments on the subject of contradictory behaviours and characteristics visible in human personality.

Task-2: In groups students will make a presentation and discuss harmful aspects of mental anxiety and ways to remove it.

Lesson-3: Mental fatigue, its classification and effects on students-

It is usually seen that when someone is engaged in the same job for long, there occur physical and mental change towards the job. The person who experiences physical and mental change towards the job naturally also experiences fall in their performance. This physical and mental change is known as tiredness or fatigue. So, fatigue refers to sloth in the working persons and reduction in their performance. Reduction in performance of individuals is the universal cause of fatigue. Psychologists have defined fatigue in various ways. Some said, "Reduction in performance is fatigue." Another scholar defined, "In work situation fall in working capacity or performance is fatigue; so, any kind of reduction in performance is fatigue." An analytical definition is, "As a result of continuous engagement in the same type of job for a long time, there appears decrease in working capacity of individuals and this decrease of working capacity may be termed as fatigue."

Classification of fatigue: Psychologists have classified fatigue into two types- a) physical fatigue, and b) mental fatigue.

a) Physical fatigue: The fatigue that occurs as result of physical labour for a very long time is called physical fatigue. This type fatigue is related to body muscles and senses. Every individual has got a limit or border line of their capacity to work or labour and when they cross their limit, fatigue occurs. In normal situations, body fulfils all the physical needs required at work. For example, body meets the demands of additional oxygen by breathing quickly. Again, in case of rise in blood pressure and heart beat, body discharges additional starch. But fatigue occurs in an individual when the job is highly labourious, or if the person is less endurable, or if the physical balance is affected due to very cold or hot weather.

b) Mental fatigue: Mental capacity decreases and fatigue occurs when someone does any mental work for a long time. For example, if we solve mathematical problems for a very long time at a stretch, we see that our thinking power, logical power and power to correct the results of the problems gradually fall and thus we experience a decrease in our mental capacity. This change of mental state or decrease of mental capacity is known as mental fatigue. Besides, fatigue may also occur due to differences in personal likes and dislikes, change in mental condition, and environment. As physical and mental work cannot be isolated fully, so is the case with physical and mental fatigue. Therefore, mental fatigue may occur as a result of long physical activity and similarly, physical fatigue may be caused by long mental work as well.

Effects of mental fatigue upon students: Here, by students we mean the participants in activities under physical education programmes. The physical fatigue occurred with the students participating in physical education programmes depends on the volume of physical activities they do. As a result of physical labour huge amount of sweat is discharged from their body and it has impact upon movement of body-organs and concentration in the activity. While performing physical education programmes, the students often suffer from mental fatigue which is visible through the following symptoms:

1. They may make mistakes in their performance of physical education programmes.
2. They may lose self confidence.
3. There lacks coordination among their activities.
4. They lose rhythm of work and take wrong decisions.
5. They become inattentive and cannot understand the techniques of implementing the programmes.
6. There decreases attentiveness to duty; and
7. They become mentally weak.

Task-1: Students will write on the board and discuss what fatigue is and what factors cause fatigue.

Task-2: Students will prepare a list of the effects of mental fatigue on mind and then they will discuss in groups.

Lesson 4: Causes of mental fatigue and their remedy: Physical or mental, whole or in part- whatever may be the nature of fatigue, there must be some reasons behind it. We have just discussed the causes of fatigue occurring in human beings due to programme related physical stress. There are many other reasons why fatigue may occur. Psychologists have divided the causes of fatigue into three classes: 1) causes related to body or physique, 2) causes related to mind or psyche, and 3) causes related to environment. Causes of physical fatigue include generation of lactic acid in muscles, decay of body muscles, discharge of salt from body, significant shortage of oxygen, excessive body movement etc. In this lesson we will discuss about mental fatigue. We can analyse the causes of mental fatigue in the following manner:

1) Lack of mental preparation: Before doing anything we should take mental preparation. If the performer does not have adequate and clear idea about the activity, fatigue may occurs more quickly than usual.

2. Lack of practice and habit: If the students practice the programme regularly and get habituated in the activities required for the programme, fatigue will not occur soon. Thus, fatigue occurs due to lack of practice and exercise in advance.

3. Lack of motivation and love for work: When you are motivated and you love the work, fatigue does not occur even after you have worked for a long time at a stretch. on the other hand which there is no motivation, is simply a burden. In such coercive work, fatigue appears very easily.

4. Lack of mental willingness: In implementing any physical education programme, if the student is unwilling, fatigue occurs in them very quickly. Strong will power of mind can make very difficult tasks easy. Hence, lack of metal willingness is considered as one of the causes of fatigue.

5. Environmental causes: Apart from physical and mental causes, there are also some factors that may cause environmental fatigue. Very hot, very cold or damp weather is not congenial for any work. In such an environment there is high probability for any individual to get fatigued. In the same way lack of adequate light, air, and clean environment creates fatigues in the workers.

Ways to remove mental fatigue: As loss of physical and mental strength is the root cause of fatigue, fitness and energy of the both can remove it. In order to remove mental fatigue we can put emphasis on the following subjects:

1. Generating love for programmes: When the students love physical education programmes, fatigue cannot overpower them easily.

2. Avoiding monotony of programmes: The monotony of boring programmes makes the students fatigued. On the contrary, making programmes enjoyable and ensuring diversity in them help remove monotony and fatigue.

3. Motivation: Programmes should be full of motivations and it will ultimately lead to spontaneous participation in the activities. Thus, motivations can remove fatigue.

4. Avoiding stressful programmes: Students should be compelled to implement any programmes that go beyond their capability.

5. Rest and sleep: As nutritious food essentially prevents physical decay, similarly rest and sleep help remove fatigue and tiredness. Rest and sleep remove physical and mental fatigue and thus people can work with new enthusiasm and fresh energy.

6. Avoiding unhealthy environment: By avoiding unhealthy environment e.g. damp and shabby environment, students should implement programmes in clean and well-ventilated place. This will inspire the students to participate in the programmes happily and consequently they will remain free from fatigue.

Task-1: Students will prepare a list of the causes of mental fatigue as homework. In the classroom, they will write the causes on the board and discuss in groups.

Task-2: Write serially the ways of removing mental fatigue and present it in the class. Then discuss the subject.

Exercise

1. Put tick (✓) mark to show correct answers:

1.1 Sports and games not only help maintain physical and mental fitness but also harmony between body and mind.

Which one is true?

- a) Games and sports make body tired.
- b) Physical fitness and mental happiness are achieved through games and sports.
- c) Victory in sports competition makes student haughty.
- d) Students become happy even being defeated.

1.2 ‘Body and mind are complementary to each other.’

The statement is-

- a) Partially true
- b) False
- c) True
- d) None of the above

1.3 When one is mentally fatigued-

- a) One can do every task perfectly.
- b) One can finish all tasks confidently.
- c) One makes mistakes in taking decisions.
- d) One loses attentiveness to work and becomes mentally weak.

2. Fill in the gaps with appropriate words:

- a) Mental health helps maintain harmony between ----- and -----.
- b) Mental state and principles of mental health are the subject matter of mental-----.
- c) Working for a long time at a stretch causes physical and mental ----- which results in decrease in human performance. This physical and mental change is called----- -----.

3. Answer in short:

- a) What is mental health?
- b) What do you mean by mental behaviour?
- c) What is physical fatigue?
- d) Define motivation?

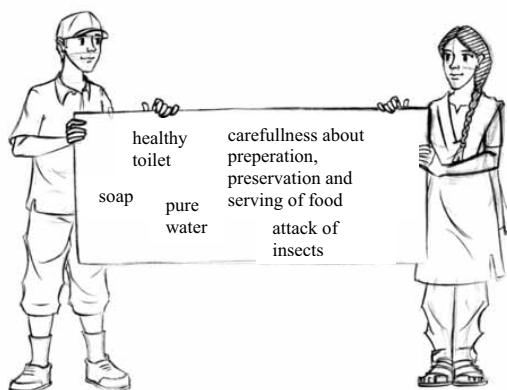
4. Essay type questions:

- a) Discuss different types of mental behaviours?
- b) Describe the ways of removing mental fatigue.
- c) Discuss various effects of mental fatigue upon students.
- d) Mention causes of mental fatigue.

Chapter Four

Health Science and Health Service

The branch of Medical service that discusses and analysis scientific ways of living individually and collectively is generally called health science. Now what do we mean by health may be discussed first. Lets start with a famous quotation from Socrates. In the “Republic” Plato quoted that Socrates said” Now to produce health is to part the various part of the body in their natural relations as authority or subservience to one another whilst to produce disease to disturb this natural relation”. If we simplify this definition we understand that health means physical fitness or healthy state of body. But in broad sense only physical fitness does not mean health; it also includes mental health. In order to be healthy we should have very good knowledge about health science. Health science gives us ideas about how to maintain health and it also shows the way how to get rid of discuses. That is health science gives us a dear idea about health services, so, we should identify the common health problems and be aware of maintaining individual and collective health. We still develop healthy environment at school and at home. School Tiffin programme to fulfill under nutrition and regular health service programmes at schools will play significant role as complementary to students education.



At the end of this chapter we will be able to

- Explain importance of health science.
- Explain concept and techniques of maintaining personal health.
- Take preventive steps for common health problems.
- Explain the coverage of health services.
- Discuss necessity of Tiffin programme at school.
- Have an idea about health card and to explain its usefulness to motivate others in preventing discuses.

LESSON (1) : Health science and its importance: The objective of study health science is to have knowledge about health and its principles. Again the objectives of following health Principles are to prevent diseases. The more we find out the reasons of diseases the more we will be able to prevent them. The ultimate objective is to get rid of diseases and has a long healthy life. Therefore by studying do is order to have good health and long life. We should acquire knowledge of health science to understand the essence of the proverb “health is the mother of all happiness. Environment and society have influence on our health. Dirty environment causes harm to our health. Communicable disease cause contamination from one body to another. Flow germ of communicable and contagious disease are transmitted from one person to another and what should we do to prevent such disease, are all the topics discussed under health science. From health science we also know about drinking safe water, remaining away polluted air, eating nutritious balance diet, living in a well lit and well ventilated house keeping school building healthy, traveling safely, ensuring self defense from ferocious animal, mad dog and mad fox, managing sewerage and garbage etc. Prevention and cure of diseases are two major objectives of health Principles. But prevention of diseases and nature of prevention depend on types of diseases. For example, different diseases like cholera, T.B. Pox typhoid, etc. require different preventive measures and curative treatment. Polluted air, water, rotten, stale and open food, problems in managing domestic garbage and sewerage and dirty environment contribute in the spread of all this diseases. Similarly two major aims of health policy are reduction death rate of mothers and children through better management and medical facilities, and ensuring “first AID” for accidents. The main barrier to building good health is ignorance and indifference of health instruction. Proper education, wide publicity for good health etc, play important role to remove this barrier. We should remember that every individual is the member of the society. So, people at very sphere as society should be aware about health science out they should advised to follow Principles of good health for collective welfare.

Task-1: What do you understand by health and health science? Write there separately and present in the class.

Task-2: Water and air save our life but they also spread diseases. Discuss elaborately and explain with relevant example.

LESSON-2: Concept and technique of personal health care: Physical fitness is a precondition to happy life. When a student is not physical fit, they can't concentrate in study and do not find interest in any activity. So they can not accomplish any task properly. It is essential to keep one self physically fit in order to do any thing successfully and live in peace fully and happy life. It is difficult to restore a person with health to its healthy condition. To lead a health life every body should take care of health and follow health instruction. What is health care? Health care refers to maintain physical structure and natural growth and to keep free from diseases. The personal health

care includes being ware of own health, taking necessary measures of health care and following all health instruction. The issue of health care is related to both physical and mental health. An individual's physical growth and mental development take place starting from child hood until youth. During this period they have to follow age specific health instruction. So besides maintaining physical health we should maintain mental health science relation ship as mind with body is very close.

Techniques of personal health care: We should develop health habits to live a healthy life. The foundation of developing health-friendly habits is health instructors which are known as health rules. Health rules includes cleanliness of oneself and their house, schools, surrounding road etc. necessary and adequate physical exercises; rest and sleep; sufficient intake of balanced diet and regular participation in games and sports. We can keep our body and mind fit by following these health rules. One of the main aspects of health care is doing all necessary tasks related to health in time. A fundamental means of maintaining mental health is keeping one self cheerful and perky. In this regards recreational activities such as playing games travelling, practicing cultural activities, observing religious activities etc. are important punctuality is also one of important issue of maintaining health. We should complete all activities in right times. Habit of regular and natural exertion keeping away from drugs etc are some important techniques of maintaining personal health. Knowing the technique of maintaining personal health and following them are very essential to lead a healthy life.

Task-1: Fill up the table below with activities rules and instructions relating to physical and mental health care.

Physical health related activities/rules	Mental related activities/rules
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Task-2: What do you for personal health care every day from early in the morning to bed time at night? Show them in the class through action.

LESSON-3: Midday school meal for students: World education conference 1990 was held in Jomtien, Thailand with the theme universal education. Based on the decision of this conference a programme named 'Education for all' was launched. According to this programme a policy was declared that all the participating countries would take necessary imitative to make primary education compulsory. It set its target to remove illiteracy from respective countries. Without education at primary level most of the children will not be able to read and write as result a country will not be able come out of vicious circle of illiteracy. Back wordiness in primary education seriously affects the

education at secondary level. In Bangladesh a high majority of its population is poor and they live in rural areas. School in rural areas is not able to fully implement education for all programmes as declared by government. Drop-out rate in this school is high and they cannot complete the course of education fully. There are many reasons for this situation one of the reasons of the dropout problem is that during their stay at school most of the students remain hungry. They cannot concentrate on study in the classroom. The school authority has taken initiatives to get rid of this problem by launching mid-day school meal programme.

Majority people of Bangladesh are poor and they cannot afford sufficient food for their children. Many of the students come to school half fed or unfed. They suffer from mal nutrition, cannot concentrate on study and are affected by other problems.

To solve this problem introducing mid-day meal programme for students school is necessary.

Objectives of mid-day meal programme : The some main objectives of this programme are as follows.

1. To mitigate hunger during school time.
2. To prevent dropout and to increase the number of students gradually.
3. To enhance interpersonal good relation and friendship, co existence, sympathy among students inside classroom and out side.
4. To prevent malnutrition and participate in different health programme.
5. To participate actively in games and scout programme
6. To remove pressure of providing food for children of the poor guardian and ensure their regular attendance in the classroom.

Healthy Tiffin: A students has to stay at school for 7-8 hours. Naturally they get hungry during this long period. They can concentrate on their lessons if they can gratify hunger during this time. It helps them remove fatigue and tiredness. As a result of this programme their standard of education goes up. The higher the quality of the Tiffin the better they will feel physically and mentally. Hence school authority has to arrange nutritious Tiffin regularly. Through implementing mid-day Tiffin programmes for students, education for all programmes will be carried forward, literacy rate will be increased and finally it will contribute in building a strong nation.

Task-1: Students will write on board main obstacles to fully implementing “Education for all” programme according to teaches instruction. Then students will be divided into two groups and show their argument for and against.

Task-2: As a homework student will write main objectives of mid-day school meal/tiffin programme with arguments and present them in the class room.

LESSON-4: Common health problems and remedies: Disease or sickness is a part of life. None can live without any disease in life. But one can avoid and prevent diseases. Common health problems refer to ones be coming sick. There for in order to keep one

self free from disease one should know about nature of a disease, its germs and how the disease spreads.

Causes of diseases: Various types of germs cause various diseases. We come into contact with lot of germs of different diseases every day. The germs enter our body in many ways. When immunity of body decreases body cannot fight against germ attacks and it becomes sick. On the other hand germs can not easily attack the person whose body is strong and stout and they remain healthy.

Nature of diseases: There are some diseases that transmit them such diseases are called communicable diseases. Apart from human body diseases can be transmitted through other objects like water, food, air etc. Some communicable diseases causing health problems are cough and cold, eye infection, diarrhoea, influenza, whooping cough, diphtheria, measles, pox, malaria, tuberculosis, typhoid, jaundice, diseases that are not transmuted from one person to another are called non-communicable diseases. For example, cancer, high blood pressure, diabetes etc are some non-communicable diseases.

Common health problems: We have so many health problems in our country. Despite control in pox and malaria outbreaks cholera, typhoid, dysentery and many other stomach diseases have spread widely. Malnutrition, lack of safe water, health problems, homelessness, shortage of doctors, unavailability of medicine, high mortality rate of mothers and infants. Unawareness of personal healthcare etc. have made common health problems more complicated.

Remedies for common health problems: Self-awareness plays the most important role in preventing diseases. We should always be careful so that germs of diseases can not be communicated. We should take all possible measures of personal health care to keep our body free from diseases. Our immune system becomes stronger when our body is healthy and strong. We must know the ways of preventing each and every disease if we have to prevent communication of germs. There are specific ways to prevent specific diseases. But some common measures can help us prevent spread of most of the diseases. They are-

1. **Vaccination:** Children and adults should take vaccines where there are provisions to prevent diseases in that way. Diseases that can be prevented through vaccines in our country are pox, typhoid, tuberculosis, influenza, polio, diphtheria, whooping cough, tetanus, measles, hepatitis etc.
2. **Personal cleanliness:** We should always maintain cleanliness of our own body, clothes, furniture, kitchen utensils, crockery, living places, bath rooms and surroundings.
3. **Habit of washing hands with soap:** We should wash our hands with soap every time after using the toilet, before cooking and serving food, before taking food, after nursing the sick people, after cleaning stool and urine of children and each time after returning from outside.

- 4. Cooking, preserving and serving food:** We should take care in cooking, preservation and service of food. It is very essential for us to prepare food in a healthy way, to be careful about food preservation and to cover food all the time.
- 5. Pest and insect:** We should consider issues of remaining careful about pest and insect attack, drinking and washing with safe water etc as remedies for common health problem usually spread diseases takes place due to our ignorance and carelessness about health.
- 6. Awareness building to prevent diseases:** We should build extensive public awareness about prevention of diseases. So public awareness can be raised by means radio, television, poster, cinema, newspaper public speech etc,

Task-1: Fill up the following table by making list of five persons from your family and people you know who were attacked by diseases last year.

Name of the Personal	Name of the Diseases they suffered from	Which one is	
		Communicable	non communicable
1.			
2.			
3.			
4.			

Task-2: Remember three tasks from daily house hold activities (e.g. cutting fruits, cooking food, boiling water, sweeping and wiping floor) mention preventive measures to be taken at the time of doing those takes and fill up following table

House hold activities	Measures to prevent contaminate
1. Cutting fruits	1. To wash fruits in safe and pure water and to clean knife well to keep cut fruits in clean post and cover them
2	2.
3	3

LESSON-5: Students health service and health cards: People who go to educational institutions to have education or knowledge are known as students. Students stay at school from 6-16 years. They have to stay at school for 3 to 5 hours a day. 6 days a week and 7/8 months a year. The time of their stay at school is highly important for them to grow as good citizens of the country. School should give special attention to the health of the students for their all-round development. If furniture, teaching materials etc are congenial for students' health, their body and mind will develop properly. It is the school which is the best place for mental development and moral character building. Students can gradually acquire good qualities under supervisor of an ideal teacher. Similarly for all round physical development with good environment, clean school building, pure

water, nutritious mid-day school meal, healthy sanitation system, classroom with sufficient light and ventilation open play ground and gardens is called healthful school. Following areas should be emphasized for better health service of students-

- a) School building: School building should be located in such an open place where light and air can enter from all sides and where people can move easily.
- b) Playground: Student life with games can not be imagined. There should be a play ground adjacent to school. So students can participate in various games and sports throughout the year.
- c) Healthful sanitation system: There should be arrangement for healthful sanitation little away from school building and there should be supply of water.
- d) Pure water Supply: Supply of pure water is one the component of health service. In towns people should boil supplied water before they drink it, In villages water of deep tube wells is pure and people can drink it directly. Water from any other source like ponds, river, tank etc, should be boiled before drinking.
- e) Classroom and Furniture: Necessary steps to be taken so that class room and furniture are not unhealthy.
- f) School Health Programme: School health programme is very important issue to ensure health service for students, Students are attacked by various diseases in summer rainy session and winter. Precaution in this respect helps keep away from those seasonal diseases. Students can remain free from common diseases through participation in school health programmes

Salient features of school health programme are as follows:-

Medical examination: Every school should have a systematic medical examination of students, first aid facilities and healthful school environment. A doctor can work as an inspector of this programme. Under the supervisor of civil surgeon of each district such health inspector can examine student's health and advise treatment for different diseases. School authority will help the schools inspector with all possible assistance. The health inspector will examine age, weight, blood group, blood pressure, pulse rate, physical structure, eyes, teeth, heart, lung, etc of each student and record them in a card this card is called students health card.

Health service Centre: In a school which there is no school health programme a general teacher should be given training on health service to solve common health problems. If the student is seriously sick they can be sent to nearest health service centre or be admitted in hospital. At present one can avail health service from union health and family welfare center, upajila complex, district sadar hospital or specialized hospital.
Students health card (sample): A health card is a thick paper with health related information printed on it.

The health card will carry following information.

**Name & address of school
Health card**

1. Name of Student -----
2. Name of father/Name of mother -----
3. Address -----
4. Date of Birth ----- Age -----
5. Class ----- Roll no -----
6. Height ----- Weight -----
7. Body Structure -----
8. Blood pressure -----
9. Eye/Nose/Ear/Throat/Lung/Heart -----
10. History of sickness -----
11. Present health problem -----
12. Next date and time medical examination -----

Signature of health inspector

Task-1: Students will write discussion of a healthful school building and present in the classroom.

Task-2: Make a list of the tasks of a school health inspector and prepare a sample health card. They discuss in groups.

Exercise

1. Put tick (✓) to show the correct answer.

1.1 Health is the mother of all happiness the proverb is-

- a) Partly true
- b) True
- c) False
- d) None one of the above

1.2 One of the major objectives of health principle is

- a) To have knowledge about health
- b) To have knowledge about health principle
- c) To Prevent diseases
- d) To know about germs

1.3 Communicable diseases:

- a) Spread from the body of the affected people to others
- b) Spread through blood
- c) Is a result of under weight
- d) Is a result of high blood presser

2. Fill in the gaps will appropriate words

- a) Physical fitness is a ----- for happy life.
- b)refers to maintain physical structure and normal growth and also to remain free from diseases
- c) One of the main objectives of studying health science is to acquire about.....
- d) A health card is a thick paper with health related information.....
- e)One of life objectives of health principle is todiseases.

3. Match the words of left side with the words of right side

- | | |
|------------------------|------------------------------|
| a) Influenza | a) Non communicable diseases |
| b) Polio | b) Water born diseases |
| c) Cholera | c) Air born diseases |
| d) High blood pressure | d) not taking vaccine |

4. Short questions.

- a) What do you mean by health principles?
- b) What is health Care?
- c) What are the common health problems?

5. Eassay type question

- a) Explain the benefits of mid-day school meal programmes
- b) Prepare a sample of health card with required information
- c) Discuss different component of better health service for student at school

Chapter Five

Nutrition for health

We need to understand what health is. Generally, by health we mean physical fitness or keeping free from diseases. But in broad sense only physical fitness is not the parameter of healthiness as mental health is also important. So both physical and mental fitness together make healthiness of a person. Man need food to live, maintain health, and physical development. The food should be full of nutritions. The foods that keep our body healthy and strong is called nutritious food. Balanced diey supplies nutrition for body. Balanced diet includes those item of food in which all ingredient of food are available in proper proportion and quantity.



Balanced diet and nutrition

At the end of this chapter we will be able to

- Explain concept of nutrition and its necessity for student
- Explain necessity of nutrition for players
- Explain concept of mal nutrition and its effect on humans.
- Explain effect of malnutrition on games and sports
- Prepare a list of food with required calorie for different age group
- Take cautionary measures to prevent food contamination.

LESSON-1: Concept of nutrition and its importance: At puberty the adolescents experience very quick physical development. To support this physical growth and development they need adequate nutrition. They should take proper quantity of food with all necessary ingredients to supply energy, repair decay and to prevent diseases at the growing stage. Lack of nutrition's food causes mentally and physical retardation and reduces immune system. Therefore compared to other stages of life people need more nutritious food at puberty. At this age children remain busy with study, games and sports etc. Due to their physical activity they need more calories. In take of low calorie food hampers physical and mental development

Food ingredients: There are some ingredients of food namely protein, carbohydrate, fat, vitamin, minerals, and water. Any food rich in any of the ingredient is known as such for example any food that contains protein is known as protein and the food that contains carbohydrate is known as carbohydrate.

Sources of nutrients and its functions: Protein is necessary for body building and development and growth of body and to repair physical decay. Proteins are required for body energy and immunity. Fish, meat, milk, egg, cheese, curd, pulses, beans etc are common sources of proteins. Carbohydrates are the main source of energy for all activities. Rice, wheat, corn, potato, sugar, honey, arum root, sweets etc sources of carbohydrates. Fats generate heat and energy for body. Butter, Ghee, fat, soya bean, milk, fish oil, coconut oil etc are the source of fat. Vitamins are essential to prevent diseases, maintain different activities inside body and protect it from decay. Fish, meat, egg, milk, fish oil, green and red vegetables, fruits, beans, oil seeds, coarse rice, wheat with fiber, sprouted seeds are the sources of vitamins. Minerals are very important for internal functions of body. There are many minerals in our body and every time they discharge with urine, stool and sweats that causes body decay. Some common minerals of our body are calcium, phosphorus, iodine, sodium, potassium etc.

In order to compensate the loss of minerals we take salt, milk, milked food, small fish meat, yolk, beans, vegetables, pulses, tyme, banana, green coconut water etc. 70% of our body consists of water. Water help in maintaining body structure, keeps body cool and active, helps digest food, helps in blood circulation, transpiration of food inside body and also in helps in exertion. Timely intake of sufficient amount of food is necessary for maintenance and development of body. By appropriate food we mean balanced diet. Balanced diet supplies required calories to body. A balanced diet is that contains the proper amount of each of the six nutrients mentioned above. Required amount of balanced diet varies depending on age of people. For example, Requirement of carbohydrate, protein, fats and other nutrients by an adolescent higher than that of a child. Therefore requirement of balanced diet varies according to age, sex, and body structure.

Task-1: In the table below column-1 and column-2 respectively show name of food and their function in the body, Match column-1 with column-2 using arrow:

Column-1	column-2
Food	Function of food in body
• Rice	• Prevent disease
• Colorful vegetables	Fulfill requirement of minerals
• Fruits	• help (s) in blood production
• Iodized salt	• help in physical growth and development
• Arumleaces (leaves)	• help in blood circulation
• Meat and egg	• Prevent (S) disease
• Water	• Repair (s) physical decay
• Butter	• Maintain physical structure and growth
• Pulses	• Generate (s) heat and energy

LESSON-2: Causes of malnutrition and remedies: We need food to live and maintain health and physical development. Food supplies nutrition for body. Symptoms of proper nutrition, enthusiasm and hard work. We need energy to work. Nutritious food supply us energy. Six nutrients of food supply energy to our body.

Functions of nutrients: Different nutrients have different functions. Functions of these nutrients include body building, growth and development, repair of decay, heat and energy supply, heat and energy production, development and maintenance of organs, blood circulation, nutrition supply, discharge of urine and stool, cooling of body etc.

Requirement of balanced diet: Any food containing all the six nutrients are called balanced diet. But its requirements vary according to age and sex. For example, requirement of proteins, carbohydrate, fats and other nutrients by an adolescent is higher than that of a child. Again, amount of food required by a player/labor is even higher than that of an adolescent.

Malnutrition related diseases: Muscles will decay instead of development in case there is deficiency of proteins in a child's food. Due to protein deficiency that increases fluid volume in body and a child becomes very weak. This disease is known as Koshiorkor. On the other hand a child will suffer from a disease called marasmus as a result of deficiency of proteins, fat etc. Iron, protein and other nutrients produce hemoglobin in blood. Due to deficiency of these nutrients of food a disease called anemia takes place. Deficiency of calcium, phosphorus and vitamin-D causes children suffer from a disease called rickets. Deficiency of iodine is responsible for goiter. Deficiency of vitamin-A reduces eye sight at night. Which is called night blindness. Beriberi for thiamine deficiency, mouth sore for riboflavin deficiency, scurvy for vitamin-C deficiency are some diseases related to malnutrition.

Causes of malnutrition: The main cause of malnutrition is ignorance and lack of awareness. It is a serious mistake to give fish head, cream, cheese, big piece of fish and

meat to the senior members of the family leaving the growing children aside. Adult people require less protein and fat whereas growing children and teen agers require much more protein and fat in their food. Lack of proper distribution of food according to requirement of specific age group is also a major cause of malnutrition in our society.

Remedy for malnutrition:

1. Family heads should know about low cost food with same nutrition of costly food item.
2. We should avoid superstition and wrong perception about some food such as considering duck eggs, boal fish, Gojar fish, pumpkin etc as bad food.
3. Parent should know about necessity of nutritious foods.
4. Mothers should know that cooking for long time spoils food value of many vegetables and greens.
5. Vegetables should be washed before cutting them not after.
6. Guardians should be encouraged rear poultry and cows in the house to address to deficiency of proteins.
7. We should try to eat small fish if big fish is expensive
8. We should prepare a list of food according to food value and select daily meal to ensure nutrition for the family of the issues on
9. Wide publicity for nutrition malnutrition and remedies through radio, TV, and newspaper should be ensured.

Task-1: Make a list of balanced diet with the name of low cost food items available in your locality.

Task-2: Write down some examples relating to causes of and remedies for malnutrition.

LESSON-3: Calorie requirement of players according to age: Food is required to maintain health. Symptoms proper nutrition includes good health, sound mind, enthusiasm, and hard work. We need energy to work. Any instrument like-Cutter, axe knife cleaver, etc grow blunt due to use; Wood erodes and shoes become old and torn out if we use them again and again. But whatever work we do with our fingers and whatever movements we make with our leg. They never become out of order like others. Actually food repairs decay of body and provide energy to work. In shorts food keeps our body functional and active. Six food nutrients supplies nutrition to our body. So food in which six nutrients are present in proper proportion and quantity is called balanced diet. The functions of these nutrients of balanced food are different requirements of food are also different from person to person according to their age, body weight and nature of work. For example requirements of proteins are the highest in child hood. Any person engaged in physical labour requires food that produces heat.

Pregnant and lactating mother need more nutritious food than common women. Again requirement of nutrition is higher at the time of recovery from any diseases than normal time. A player who participates in games and sports involving huge physical labour needs more calorie than others.

Calculation of calorie and energy: Proteins, carbohydrates and fats produce heat in the body after digestion. Calorie in a food item is measured through measuring heat being produced from that food. Food value is measured in kilo-caloric. For example 250 gram milk produces 165 kilocalorie and a tea-spoonful of sugar produces 16 kilocalories heat. Heat absorbed in food keeps body active and provides energy to work. The higher the body weights the more calories it burns. Required energy is expressed in terms of heat whose unit is kilo-caloric. A list of how much energy is required for doing light, medium and heavy activities is show in the table below. In this table energy required for sport and running is also mention. Amount of caloric loss per hour according to body weight are given below.

Amount of calorie required per kilogram of body weight per hours

Nature of work	Energy (kilocalorie)
Taking bath, wearing dress, eating etc. daily routine work.	3-4
Sitting or Standing up	1.5-1.9
Walking	3-5
Reading, writing, sewing, typing, cooking etc.	1.5-2
Work of cobbler and moderate work	2.5-4.5
Cutting wood, crushing stone, carting load etc heavy work	5-10
Running , playing games	4-8

Measurement of kilocalorie: What amount of calorie one will need to do a specific task can be calculated from the table above? For example, amount of calorie will be burnt for a player with 55 KG body weight to play for two hours $55 \text{ K.G} \times 2 \times 4 = 440$ kilo calorie. So amount of calorie required to do a job depends on body weight and the nature of job. Excess amount of calorie causes fat accumulation in body. Requirement of calorie varies according to sex. Daily calorie requirement for a man and a women can be calculated multiplying their body weight impounds by 21 times and 18 times respectively. In order to gain or lose body weight one should, take $\frac{1}{3}$ less or more than daily calorie requirement. We should remember that we should ensure calorie intake of daily requirement from those meals.

Age specific daily requirement of calorie

Age	Energy (Kilocalorie)	Protein (gm)	Calcium mg	Iron mg	Vita-A mg	Vita-B1(mg)	Vita-B2(mg)	Vita-c mg
1	2	3	4	5	6	7	8	9
Adolescent (13-15 years)	2500 2200	55 50	0.6-0.7 0.6-0.7	25 35	3000 3000	1.3 1.1	1.4 1.2	30-50 30-50
Boys-Girls (16-18) yrs	3000 2200	60 50	0.5-0.6 0.5-0.6	25 35	3000 3000	1.5 1.1	1.7 1.2	30-50 30-50
Adult man	2400	55	0.5	20	3000	1.25	1.3	50
Adult woman	1900	45	0.5	30	3000	1.00	1.00	50

Daily requirement of food for boys and girls

Type of food	Boys		Girls
	13-15 years gm	16-18 years gm	
Milk or milk product food	187.5	187.5	187.5
Egg (Three days a week)	1	1	1
Fish-meat	62.5	62.5	62.5
Pulse	62.5	62.5	62.5
Nuts (occasionally)	62.5	62.5	62.5
Fruits	62.5	62.5	62.5
Green vegetable	125.0	125.0	140.0
Other vegetable	187.5	250.0	187.5
Rice	187.5	250.0	187.5
Bread	187.5	187.5	125.0
Potato	62.5	62.5	62.5
Sugar	31.25	46.5	31.25
Oil/fat	46.5	62.5	46.5

Task-1: Make a list of calorie requirement depending on various physical activities.

Task-2: Prepare a table to show daily food requirement by growing boys and girls

LESSON-4: Food contamination and its prevention: Everything that repairs physical decay maintains physical development and heat is called food. Our body is undergoing decay all the time due to physical activities. It is food that repairs this decay and keeps our body active, of course, all the food items should be nutritious and balanced. Even nutritious food may cause harm to our body if the food is not safe. For example anybody can fall sick by eating any contaminated food stuff. Contaminated food becomes poisonous and creates serious threats for health and life. Any contaminated food or drink that causes bacterial infection in gullet and stomach is called poisonous food.

Causes of food poisoning: Usually food poisoning is caused by bacteria or toxin, a special type of organic poison. Bacteria contamination can occur in many ways. For example keeping cooked food for long time, before and after and also during preparation of food through harmful pests and insects etc. Again proteins if not properly preserved get rotten and produce toxin. Taking such toxic food items may cause food poisoning. Besides, flesh of poisonous animals, food contaminated by poisonous animals, food prepared with dirty and unhygienic hands, meat of poisoned poultry etc are also some causes of food poisoning.

Symptoms of poisoning: Food contaminated by bacteria makes stomach upset and as a result, nausea and vomiting, abdominal pain, loose motion and dehydration take place. Food poisoning caused by toxin creates terrible situations. Symptoms like vomiting, constipation, vision problems, palsy, weakness etc are visible in such a situation. Food poisoning by toxin is called botulism, symptoms appear within 12-24 hours after taking food. The patient may die in a few days if proper treatment is not given in time.

Preventive measures:

1. We should wash our hands well before preparing food.
2. We should take necessary measures to prevent contamination during its preparation and preservation.
3. We should drink safe and pure water.
4. We should keep cooked food away from raw fish and meat and vegetables.
5. We should preserve our cooked food at appropriate temperature for a certain period of time.
6. We should use safe water in cooking and food related washing.

Treatment: For nausea or vomiting problem we should take right medicine. In case of dehydration we should take oral rehydration solution (ORS). In any emergency situation caused by food poisoning, we should consult doctor and get admitted to hospital without delay.

Task-1: Write how food poisoning takes places and present in the class.

Task-2: Prepare two different lists on what symptoms appear due to food poisoning and how to prevent food poisoning respectively.

Exercise

1. Put tick (✓) against right answer.

1.1 What is balanced diet?

- a) Food with milk.
- b) Foot made of meat.
- c) Food with 6 nutrients.
- d) Food made of vegetables.

1.2 How does food become contaminated?

- a) Keeping food open.
- b) Heating food.
- c) Not boiling well.
- d) Keeping in fridge.

1.3 Symptoms of taking food contaminated by bacteria-

- a) Fever.
- b) Abdominal pain.
- c) Low body temperature.
- d) Constipation.

2. Fill in the gaps with appropriate word.

- a) Vitamin C deficiency causes.....
- b) Vitamin A deficiency causes.....
- c) Soya bean belongs to group of food
- d)is a result of iodine deficiency.
- e) deficiency causes mouth and tongue infection.

3. Match the words of left side with words of right side.

- | | |
|-----------------|-------------------------------|
| a) Fish, meat | a) Poisoning |
| b) Rice, meat | b) Saline |
| c) Butter, Ghee | c) Heat and energy production |
| d) Toxin | d) Heat and calorie |
| e) Dehydration | e) Energy and immunity |

4. Short questions

- a) What is nutritious food?
- b) Define malnutrition
- c) What do you mean by energy and calorie?

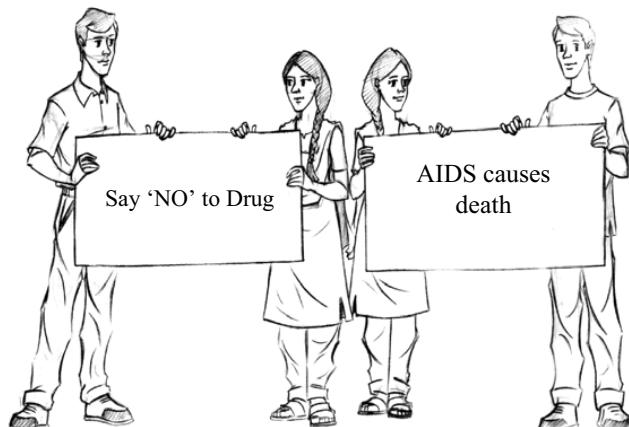
5. Essay type questions

- a) Discuss causes of and remedies for malnutritions.
- b) Make a list of daily food required by growing boys and girls
- c) What are the ways to prevent food poisoning?
- d) Discuss functions of 6 nutrients.

Chapter Six

Drug Addiction and AIDS

Drug addiction is a harmful mental and physical reaction for human beings. It is created through mutual actions between living beings and drugs. The substance for which there occurs remarkable negative change in physical and mental state, dependence on that substance gradually increases and quantity of intake of the substance also increases day by day is called a drug. Such a condition of a person is called drug addiction or intoxication. Thus, intoxication refers to addiction to drug substances. Cigarettes, tobacco, cigar, alcohol, marijuana, opium, heroin, morphine, phensedyl, yaba etc are addictive drugs. This is a terrific addiction, and nobody gets relief from bad situation easily. Our body has its own disease prevention capacity or immunity system. For this immunity system, any germs entering our body cannot harm it easily. But there are some harmful viruses that can destroy the whole immunity system of our body. HIV (Human Immunodeficiency Virus) is such a virus. HIV can be transmitted through blood, semen, breast milk etc. Once this virus enters human body, people fall sick and they are not cured by traditional treatment. The contaminated status of HIV is known as AIDS (Acquired Immune Deficiency Syndrome).



At the end of this chapter we will be able-

- to discuss the causes and symptoms drug addiction.
- to explain the bad effects of taking tobacco and drug.
- to discuss the techniques how to keep away from smoking and drug.
- to explain the role of others to keep individuals and society free from drug addiction.
- to explain the concept of HIV-AIDS.
- to explain how HIV-AIDS is transmitted.
- to explain the ways and means to prevent spread of HIV-AIDS.

- to discuss the means to keep free from the risk of HIV-AIDS.
- to know about the nature of services provided by different service organisations working to prevent HIV-AIDS.
- to avoid smoking and drug carefully by realising their bad effects.
- to raise public awareness to keep individuals, family and society free from drug addiction.
- to be motivated to lead a disciplined and sophisticated life by realizing the fatal consequences of HIV-AIDS.
- to have idea about symptoms of autism.

Lesson-1: Drug addiction, tobacco and intoxicating substances and their bad effects: Drug addiction means strong attraction for or addiction to any drug or intoxicating substances. The substances whose intake creates intense addiction are generally called drug. There are some medicine items that are also considered as drug for their use. Without prescription by a doctor if someone takes a medicine again and again, and if that medicine causes addiction, the medicine will be categorised as drug. Therefore, substances that cause harmful effects on human body and mind, and the users of those items feel strong attraction for or addiction to them, are called drug. For example, cigarette, cigar, wine, marijuana, cannabis, heroin, opium, pethidine, phensedyl, sleeping pill etc are commonly known drugs. People, who take drugs, gradually develop unusual dependence upon them. They cannot restrain themselves from taking drugs. In any case, if they cannot take drug, there appear serious physical symptoms in them. Such as they become irritable; they may experience lack of appetite, low blood pressure and problem in breathing; they may also suffer from insomnia and develop aggressive attitude.

Difference between medicine and drug:

1. Use of medicine cures people from diseases but use of drug causes various diseases in human body.
2. There is defined dose for medicine but there is no dose specified for drug.
3. One need not take medicine when disease is cured but a drug addict cannot give up drug easily.

Common drug items known in Bangladesh are heroin, opium, pethidine, phensedyl, marijuana, cannabis, yaba, sleeping pills, alcohol and tobacco-made items. From tobacco leafs tobacco-made items are prepared. In tobacco leafs there is nicotine which is a drug. Drug items like biri, cigarette, chewing tobacco, snuff-tobacco etc are made from tobacco leaf.

Methods of taking drug: Drug users take drug in different ways and methods. For example, some drugs are taken into body through injection while some others are taken as tablet, powder or syrup. Similarly some drugs are taken by drinking them as liquid though some others are



Mental anxiety

taken by smoking. There are different methods of smoking as well. For example, cigarette, biri, cigar, hookah etc.

Bad effects of drug and tobacco: There are many bad effects of taking drugs and tobacco. Taking tobacco mainly refers to smoking. Smoking is badly injurious for health. According to a report of World Health Organisation (WHO), in every 8 seconds one person dies from tobacco-related complications. The smokers and the people who inhale tobacco smoke passively suffer from many types of diseases. The bad effects of taking drug are as follows:

1. Drugs affect mental health. For example, drugs reduce capability to learn and work, hamper power to manage stress and take decision and aggravate mental anxiety.
2. Drugs cast painful impacts on family and social life. A drug addict behaves with family members rudely and destroys family peace.
3. Drugs have very harmful effects on physical fitness as well. Drugs cause damage to brain cells, lack of appetite, and reduction of eye sight.
4. Some drugs increase the probability of HIV-AIDS and Hepatitis-B contamination. Drug causes oesophagus and lung cancer, kidney diseases, high blood pressure and many other diseases.
5. Drug incurs financial loss. The drug addict creates unhappiness and causes want in the family in order to manage money for buying drug.

Task-1: Drug addicted people develop high dependency on drug. Mention the consequences of such dependency:

- 1.
- 2.
- 3.
- 4.

Task-2: Write down four bad effects of drug.

- 1.
- 2.
- 3.
- 4.

Lesson-2: Ways of keeping away from smoking and drugs and role of others in this respect: The previous lesson has elaborately discussed about bad effects of smoking and taking drugs. But merely knowing about the subject is not enough to live a healthy and happy life. We should take practical action plan immediately so that we can give up such harmful habits of human life. The first and foremost thing is firm conviction of not smoking or taking any other drug in any situation in future. At puberty the adolescents naturally feel very curious about the unknown and the forbidden. As a consequence of such curiosity and excitement or being influenced by friends or others, the pubescent may take up smoking or use drugs. Such curiosity or excitement may prove to be a cause of regret and remorse for the rest of life. Before quenching these excitements, the pubescent should think what problems smoking and alcohol may cause. If they consider

the bad effects of alcohol and smoking, it is natural that they will not develop this bad habit. The following activities are to be followed if we like to be away from smoking and drug abuse.

1. We should bear in mind what bad effects smoking and drug abuse cause to our health.
2. We should also remember that for our smoking habit and drug addiction our parents, brothers and sisters, or guardians will feel embarrassed and ashamed. Teachers will never take it easy. We should always be careful so that such unwelcome situation does not take place.
3. Then we should take firm decision about this. If we can take firm conviction from the very beginning, we will be able to keep away from such disastrous habits.
4. At the time of taking decision we should first analyse situations, identify problems and probable risks, and then collect required information on this subject. We have to gather information through various channels such as personal source, family source or social source. Finally, based on information we should find out possible solutions to the problems and take necessary initiative to implement.
5. Refraining oneself from smoking and drug is not enough. We should raise awareness and motivate our friends, classmates, relatives and acquaintances to keep far way from these fatal addictions.
6. We should work actively to create public awareness about harmful effects of drugs. Being aware of the evils of drug addiction, we all should keep ourselves, our friends, classmates and acquaintances away from smoking and drugs.

Role of others in keeping free from drug addiction: In getting addicted to drugs, bad influence of already addicted friends plays a crucial role. But all friends are not drug addicted and therefore, all friends are not harmful. Only a few friends get drug addicted whereas most of the friends are free from drug abuse and they are good. These good friends can motivate and influence others for not taking any drug. Apart from friends and peers, there are many others who also play significant role in keeping us drug free. For example, careful eye of guardians upon their children acts as the most effective measure in this connection. Also the role of teachers at school is very important. Teachers are role models to students. Students obey the advice and instructions of teachers with highest sincerity and care. Following the advice and orders given by the teachers in classroom or outside, students can avoid drugs. Similarly, relatives and neighbours by means of their love and affection can also help children keep aloof from the clutch of drug addiction. Furthermore, different mass media such as newspaper, radio and television through their anti-drug campaign and publicity can create wide public awareness too. On the other hand, taking legal steps and leading social movements against drug abuse, we can build a society free from drug addiction.

Task-1: Write down four most heinous effects of drug addiction whose remembrance will naturally restrain you from smoking and taking drug.

1. 2. 3. 4.

Task-2: What steps should you take to keep your school smoking-free?

Lesson-3: Risks of drug addiction and techniques of tackling them: Like many other countries, in Bangladesh, the number of drug addicted people is increasing gradually. Significant portions of the drug addicted people are teenagers and adolescents. Again, many of the street urchins, working children, and people of various occupations such as labourers, businessmen, rickshaw pullers, bus-truck drivers, other professionals and sex workers are also drug addicted. One of the many causes of spread of drug among these people is easy availability of drug. Other causes of drug addiction include frustration, unemployment, family unhappiness, curiosity and influence of bad friends etc.

Risks of drug addiction: There are various influences from different corners on the teenagers to take drugs. Those friends or classmates who are already addicted to drug may influence the teenagers by proposing to take drug. Besides, the drug peddlers or sellers of drugs may also instigate the children to try their items. Thus, the teenagers find themselves in a very risky situation. Disaster occurs if anyone surrenders to the bad proposals of friends and starts taking drug with them. On the contrary, refusing proposals of friends to take drugs may cause coldness in friendship. Again, rejection of proposals by people other than friends may also create a situation where there are risks of being harmed by them. We should always be careful so that such risky situation does not take place.

Tackling risky situations: We should first observe behaviour, power and influence of the people who provoke us to take drugs. Considering all these aspects we should reject their proposals to take drug so that there does not take place any risky situations to get harmed. We should keep ourselves very cool at the time of rejecting their proposals. If we cannot say 'no' directly, then we should leave the place tactfully in order to avoid risks. If the influencing person is a friend or relative, we should handle the situation carefully so that friendship or relationship does not deteriorate. When the situation is not that much risky, we should not only simply refuse their proposals but also try to motivate them to come out of the evils referring to harmful effects of drugs. If the people proposing for taking drugs create any pressure, we should inform our parents or guardians at home and teachers at school without delay. We should never take drugs even out of curiosity, otherwise disaster will ensue. We should realise that undoubtedly any type of drug is bad for an individual, family and society at large. Above all, we should have determination not to take drugs.

Task-1: What are the bad effects of drugs on individuals and family?

Task-2: An individual by taking drugs experiences physical mental, social and financial harms. Mention one of these problems and discuss in brief what will be the possible solutions.

Lesson-4: Building public opinion against drug addiction: Drug addiction is one of the biggest social challenges nowadays. Like many other countries, in Bangladesh, the number of addicted people is alarmingly increasing day by day. Though drug addicted people do not die immediately, they invariably encounter various types of physical, social, mental and economic problems. The drug addicted people not only harm themselves by taking drugs, they also affect others such as their parents, brothers and

sisters, children, relatives, friends etc. The drug addicted people get involved in many antisocial and illegal activities including theft, robbery, murder, banditry etc which are very harmful for individuals, family, society and nation at large. We should try our best to create awareness and raise voice against drug addiction in order to save our young generation and society from terrific consequence of drugs. Enforcement of existing laws should be ensured so that drugs are not easily available in the society. If necessary, new laws should be enacted in this regard. We should build public opinion to make everybody aware against drugs.

Other than slogans in mass media, the following ways can be used to build public opinion against drugs-

1. To highlight the bad effects of drug addiction through radio, television, newspapers etc.
2. To broadcast information about drug abuse and dangers relating to it.
3. To hold anti drug meetings, conferences, street dramas, songs, poems, dramas, opera-show, acting, rally etc.
4. To highlight religious doctrines against drug addiction in mosques, temples and churches, discuss its harmful aspects and motivate all to keep away from drugs.
5. To observe anti drug and anti tobacco days in schools and organise various other programmes like group discussion, debate competition, leaflet distribution, poster display etc.
6. To declare educational institutions, different offices, organisations, departments as tobacco free and drug free zones.
7. To make everybody aware about evils of drugs by printing anti drug slogans on book covers and notebooks covers.

At the time of building public awareness we should run anti drug campaigns with the slogan “DRUG gives nothing but takes away everything”. Drug addicted people believe that drugs help people forget pains and give pleasure which is fully wrong. Of course, drugs beget more pains. If we find any of our acquaintances addicted to drugs, we all should try sincerely to return them from the dangerous path of drugs.

Task-1: Write such a slogan by which people can be motivated and made aware about bad effects of drug addiction.

Task-2: Write down what will you do to run an anti tobacco campaign in your locality?

- 1.
- 2.
- 3.
- 4.
- 5.

LESSON-5: HIV-AIDS-Concept and break out: There are a few fatal diseases by which people are getting attacked more and more, HIV-AIDS is one of them. Though there are medicine and treatment for many serious diseases, unfortunately the world is still waiting for any treatment that can fully cure AIDS. So, the consequence of AIDS is

definite death. We have immune system our body to fight against germs. Due to this immune system, any germs entering our body cannot harm easily. But there are certain viruses that can gradually weaken our immune system and ultimately destroy it completely. Such a virus is known as HIV.

What is HIV-AIDS? HIV and AIDS are two abbreviations. Full elaboration of these two words is Human Immunodeficiency virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS). HIV is a special type of virus that can enter human body in a number of ways. HIV damages white blood cells and thus destroys immune system of the body. At that time, the patient frequently suffers from various other diseases such as diarrhoea, tuberculosis, pneumonia etc and no treatment and medicine work to cure them. Such a health condition of an HIV contaminated individual is called AIDS. If HIV enters any human body, its symptoms are not visible immediately. Generally it takes time from 6 months up to a few years to be exposed as AIDS symptoms starting from the day HIV enters the body. In some cases it takes 5-10 years or more to detect AIDS from the date of HIV contamination. This time is called latent period. During this period HIV can be spread to other's body from the people who have already acquired HIV.

Symptoms of AIDS: AIDS does not have any specific symptom. But when an AIDS patient is attacked by other diseases, the symptoms of those diseases are visible in the patient. Even there are some common symptoms of AIDS. They are- (1) Cough prolonging more than a month at a stretch, (2) Skin disease all over the body. (3) A kind of foamy ulcer in face and throat, (4) Swelling of lymph glands, (5) Decrease of memory and intelligence etc.

Main symptoms of AIDS:

- 1) Quick loss of body weight.
- 2) Loose motion for more than a month.
- 3) Frequent fever or over sweating at night
- 4) Excessive tiredness or fatigue
- 5) Dry Cough etc.

We should remember that if any or more symptoms from the above list is visible in any individual. We cannot call them a AIDS patient for sure. HIV can be detected from blood examination reports under supervision of an experienced doctor.

Spread of HIV-AIDS: HIV is a silent killer. In order to take cautionary measures against this fatal disease we need to know how HIV and AIDS are communicated from one person to another. HIV is not transmitted through air, water, food or general physical contact etc. Basically HIV lives in various body fluids such as blood, semen, vaginal serum, breast milk etc. When blood or semen or vaginal serum of an AIDS patient enters the body of another person or when a child sucks breast of mother, they are contaminated by HIV virus. Specifically speaking, HIV spreads in the following ways-

- 1) Illicit and unsafe physical union: The most common cause of spreading HIV-AIDS is unsafe sexual relationship. According to statistics, it is found that 80% of HIV-AIDS affected people have acquired this virus as a result of unsafe sexual union. HIV-AIDS

virus enters the body of sexual partners via semen or vaginal serum of the affected people.

- 2) Taking blood of affected people: HIV-AIDS can be communicated through limb transplantation and needle and syringe already used by an AIDS patients. Drug addicted people frequently use some needles and syringe to take drug by many people together. Healthy people will be contaminated by using needles syringe used by an HIV-AIDS affected person.
- 3) From mother to children: HIV-AIDS can be transmitted from an affected mothers body to her children in three ways they are-
 - a) During antenatal period.
 - b) During delivery of children.
 - c) During giving breast milk to children

The activities for which HIV-AIDS does not spread are mentioned below-

- 1) Through sneeze, cough, spit or breathing.
- 2) Living in the same house or eating together from the same plate etc.
- 3) Playing together and studying in the same class.
- 4) Shaking hands, embracing or using clothes.
- 5) Through mosquitoes or other, insects.
- 6) Nursing the affected people and
- 7) Using the same bathrooms or toilets.

We must know all these things can take preventive measures in order to save ourselves and our society from a deadly disease lives HIV-AIDS.

Task-1: Write down the symptoms of HIV-AIDS on the board and make a presentation in the classroom.

Task-2: Read the following statements about how HIV-AIDS spreads and write 'T' for true and 'F' for false-

Statements	T/F	Statements	T/F
1. To nurse affected people		6. To suck breast milk of affected mothers	
2. To eat from the same plate with affected people		7. To use clothes of affected people	
3. To receive blood of affected people		8. To use needles and syringe used by affected people	
4. To transmit safe blood into the body of a healthy person		9. Through sneeze and cough of affected people	
5. To get bitten by mosquitoes and insects		To save physical relationship with affected people	

LESSON-6: Risks of HIV-AIDS in Bangladesh and ways to remain free from risks: AIDS is a socio-economic and public health problem. Bangladesh is also experiencing the outbreak of AIDS. Fortunately, it has not spread widely among common people of the society. It is a matter of great concern that HIV-AIDS may take serious form in course of time. As there is no cure for this disease we all should be very cautious about it especially the teenage girls should be more careful about the fatality or such a disease. Actually, in Bangladesh girls are more vulnerable to AIDS than boys. Causes of girls' vulnerability are as follows-

1. Weak position of girls in socio-economic structure in Bangladesh.
2. Girls being less aware about AIDS than boys.
3. Violence against women due to gender discrimination in the society.
4. Girls inability to prevent males from establishing unsafe sexual relationship.
5. Distinct physiological traits of girls.
6. Curiosity for sex and unsafe physical union etc.

One-fourths of the total population of Bangladesh is boys and girls of 10-19 years. Due to physical and mental changes at puberty, boys and girls have high curiosity in their thinking and activities. But in our culture, they cannot ask anything to the senior members of the family about this. As a result they become very emotional and in order to satisfy their curiosity they feel interested to establish physical relationship. In such a situation, they run the risks of HIV-AIDS contamination.

Risky behaviours for HIV contamination: In human body viruses live in semen, vaginal serum, blood and breast milk. HIV-AIDS contamination takes place through exchange of these four types of body fluids. That means when blood, semen or vaginal serum or breast milk enter one's body from the affected person, HIV-AIDS contamination occurs. The risky behaviours of HIV-AIDS contamination include-

- a) Taking drug or using same injection needles and syringe by more than one person.
- b) Injecting blood into body without examination.
- c) Using unsterilised equipment in surgical operations.
- d) Giving birth to children by HIV-AIDS affected mothers
- e) Establishing unsafe physical relationship etc.

Ways to keep free from HIV and AIDS risks:

1. Avoid risky behaviours: We should avoid risky behaviours.
2. Control emotion: Adolescents mainly get engaged in risky behaviour as a result of curiosity and emotion. We should control curiosity and emotion to avoid risks of HIV-AIDS.
3. Reject risky proposal: We should be tactful and skilled in saying 'no' to any unwanted and immoral proposals.

4. Follow religions and social customs: No religion or society supports drug addiction, illicit physical or sexual relationship and other immoral activities. Therefore, following religious regulations one can keep away from risks of HIV, AIDS contamination. This religiosity helps reduce HIV-AIDS risks.
5. Building awareness about HIV-AIDS: We should take necessary steps to ensure wide public awareness about HIV-AIDS. In this regard we should make publicity through mass media, organise rally and make use of electronic media as well. People should be motivated through traditional folksongs, '*palagaan*' by rural bards, street dramas and cultural programmes to be aware about dangers of HIV-AIDS. All these programmes will play very significant role in raising self awareness of individuals and ultimately public awareness in the society.

Task-1: Students will divide themselves into groups and make a list of risky behaviours of HIV-AIDS contamination. Each group will discuss on a risky behaviour in the classroom.

Task-2: What, the most effective strategy for raising awareness about HIV-AIDS? Show your argument in far our of your answer and make a group presentation in the classroom.

LESSON-7: Risk of HIV-AIDS in Bangladesh: Sexually Transmitted Diseases (STD) and AIDS are two talked about issues of the present day world. In America AIDS was first detected in 1981. AIDS is such a dangerous disease that it decreases human life and hampers economic growth of a country AIDS is seen as one of the barriers to human civilisation and development. According to the latest statistics of UNAIDS, towards the 33300000 HID-AIDS patients all over the world. At present approximately 6.800 men and women are getting affected by HIV-AIDS and the number of affected people is increasing day by day. According to UNAIDS reports, of 50% of people who are getting affected by AIDS every year belong to the age group of below 25 years. Various socio-economic factors such as lack of opportunities for education and health service, and economic incapacity compel the young generation of poor countries to take risks of HIV-AIDS contamination. In Bangladesh, there are cases of HIV-AIDS outbreak out it has not spread among mass people yet. Even then due to world situation and regional circumstances, we cannot remain inactive. It has been observed that HIV-AIDS is spreading widely in many countries such as china, Cambodia, Vietnam, Nepal and Myanmar, two neighbouring countries of Bangladesh. So, we have to take appropriate steps before Bangladesh becomes more risky in this regard. In Bangladesh, rate of HIV contamination among high-risk-people such as drug users, male and female sex workers, homosexuals, professional blood sellers, floating people etc. According to statistics of 2010, the probable number of HIV-AIDS contaminated people is 75000, the number of identified HIV carriers is 2088, the number of people died of AIDS is 251. The HIV-AIDS contamination among the drug users an epidemic form due to taking drugs by many people using the same needle and syringe. Though the current rate of HIV contamination in Bangladesh is below 1% there is no guarantee that the scenario will remain the same in future. AIDS does not break out as epidemic at the beginning. That

HIV explosion will not take place in Bangladesh cannot be said for sure. There is no effective cure for AIDS as yet so, its prevention is recommended all over the world. The countries of the world observe the 1st of December every year as ‘World AIDS Day’. On this special day all the countries from their respective position take various programmes to present AIDS.

Task-1: Students will divide themselves into a few groups and make a list of risky behaviours that may lead Bangladesh to take an epidemic form of HIV contamination make a presentation in the classroom.

Task-2: Prepare an activity plan in order to observe world AIDS Day and make a presentation.

LESSON-8: Role service providing against HIV-AIDS: AIDS is an incurable disease in the present day world and its consequence is definite death. These are cases of AIDS in Bangladesh and the number of affected people is increasing gradually. Since there is no care for AIDS as yet, presentation is the only way to control it therefore we have to put emphasis on preventive measures. In 1985 the Government of Bangladesh formed a committee called National AIDS Committee to control the outbreak of AIDS. In 1988, Bangladesh took short-term programmes to control AIDS under financial support by World Health Organisation (WHO). But the Government has been undertaking various programmes and steps to fight AIDS in Bangladesh. These programmes are being implemented by Government and Non-Government organisation. Side by side with Government organisations, Non-Government service providers are also playing significant roles in this regard. In every Government medical college and hospital services like blood screening. Counseling and limited treatment are available for HIV-AIDS patients. Among NGOs Ashar Alo Society, Jagorani Medical Clinic, Mukto Akash Bangladesh, HASAB (HIV-AIDS and STD Alliance in Bangladesh), CAAP (Confidential Approach to AIDS Prevention) etc HIV-AIDS related service providers have taken extensive programmes as well. Service-related programmes mainly include (1) counseling and (2) rehabilitation.

Counseling : As yet there is no vaccine or medicine for HIV-AIDS. But psychological support and strength, proper medication and nursing can help HIV-AIDS affected people live long healthily. Therefore mental support and counseling services are very crucial for them. At the initial stage, non-Government service providers collect required information about HIV-AIDS victims, then they hold yard meeting hear the house of the victims. In the yard meeting, experienced doctors and experts are invited for open discussion on what HIV and AIDS are how HIV spreads, how to deal with the victims etc. Different NGOs taking expert counselors with them regularly visit the HIV-AIDS patients at their houses. They provide various treatments to the patients along with required services. With them regularly visit the HIV-AIDS patients at their houses. They provide various treatments to the patients along with required services.

Techniques of counseling: HIV-AIDS can be detected by examining blood of a patient. Counseling is necessary before and after blood examination. Counseling is very important because any person found HIV positive gets seriously afraid. They think about the fatal end of AIDS when there is no cure for it. But the AIDS victims can live long provided they get required care, proper food, mental support by others etc. We should follow the following steps in counseling patients:

1. Counseling after blood test: Anybody after detecting HIV positive in their blood gets mentally very weak. So, counseling after blood test report is very vital. Only through advice and counseling the victims can be brought back to normal life. The victims should take care about regular intake of nutritious food, sufficient rest and sleep. Their mental strength should be enhanced through taking doctors advice from time to time.
2. Beware of other diseases: HIV positive patients gradually lose their immunity. As a result various diseases like diarrhoea, tuberculosis, high fever etc take the opportunity of the patient's vulnerability. In such cases, patients should take medicine and treatment as per experienced doctor's advice.
3. Treatment as per doctors advice: There is no treatment for AIDS until today. Medicines of antiretroviral group can be used to remain quiet well and thus live long. But these medicines are extremely expensive.

Rehabilitation: There are many Non-Government organisations that provide different vocational training to the AIDS victims in order to make them self dependent. Furthermore, in special cases, there are services like financial donation for their rehabilitation.

Task-1: Suppose you are an officer of an NGO working for HIV and AIDS victims. Write how will you provide counseling services to them?

Task- 2 : Make a list of issues you will highlight at the time of counseling the family members of an HIV victim.

LESSON-9: Autism: We pay our day to day life through various odds and problems. Happiness and sorrows are inevitable phenomena of human life. When a baby is born in a family, everybody becomes happy and excited. Parents keep planning so many things for bright future of the new-born. One of the issues of their planning is healthy and normal development of the child. Physical, psycho-social and intellectual development of a child takes place in a certain way but there are some exceptions in this respect. Parents get worried when they see that their child is behaving differently from other normal children or not following normal rules of development or lagging behind compared to its age group. Gradually there prevails despair and frustration in the family. At first parents have to struggle with their own minds to accept the difference in their child. At the same time, parents have to face many odds due to negative attitude of society and family members towards the baby. Normal development of a child includes acquiring physical skills (Sitting, standing, walking, using hand etc), mental

skills (intelligence, emotion, memory, thinking, behavior, personality) and social and communication skills with the growth of age. On the other hand, development related problem is usually a longstanding condition of a child, which happens at the time of brain development of a part or whole physical system. Autism is one of the development-related problems of children.

What is autism?

Autism is not a disease. It is an extended form of neural development related problems which is known as autism spectrum disorder. Here ‘neuron’ means neural system which is related with brain. Again by development related, we mean development process of children. The problem of autism stands in early childhood and it impedes normal development process of a child. Generally symptoms of autism are exposed from 18 months to 36 month after birth of a child. Abnormality is social relationship, communication and behaviour are the main affairs of this problem. Besides, autistic children also suffer from physical intellectual, learning process-related and sensitivity related problems. We should bear in mind that all autistic children are not same. There are some symptoms common to all autistic children but there are some other symptoms which vary from child to child. In autism spectrum, different types of autism are found. Autism spectrum can be compared to a rainbow. Like many colours in the rainbow spectrum, there are types of autism in autism spectrum. One this type is known as Asperger's syndrome.

Asperger's syndrome: It is one kind of autism seen on the autism spectrum. Children suffering from this syndrome can naturally develop intellectual and linguistic skills though they have problems with behaviours. In spite of having normal language skills and adequate vocabulary, they find it difficult to participate in social conversations. They repeat similar behaviours again and again. Specifically they cannot understand minute details of communication such as making eye contact with others, facial expressions of others, signs and signals, body language and expression of emotions. They analyse words literally and consequently they fail to understand idioms, proverbs, puns, parades etc. Such children do not suffer from retardation of development. In education they do better and their intelligence is higher than other children compared to autism. Asperger's syndrome is detected much late even at puberty or manhood. Rate of asperger's syndrome in boys is ten times higher than girls.

Children with asperger's syndrome can read and write properly and confidently but they cannot understand the relevance of facts. Usually, students with aspergers syndrome have huge stock of vocabulary, they can speak systematically and often they can discuss on their favourite topics for long. But the problem is that they hardly realize whether the audience is interested about the subject.

It is difficult for them to maintain social communication through games and sports as they have problems in neural system, difficulties in physical movement, lack of attention

to any subjects, lack in sense of time and problems in muscles. Students with this syndrome may suffer from anxiety because of their problems in organising power and concentration in work. They love to follow rules and regulations, instructions and routines in life. Any break of rule causes them mental uneasiness and confusion.

General behaviours of autistic children:

- Not making eye contact
- Not responding to calls
- Inconsistency in skills related to development
- Opposing any change in daily routine
- Showing hyper activity or excitement
- Problems in expressing emotions
- Abnormal physical gesture
- Not being afraid in real danger whereas getting scared in normal cases.
- Irrelevant laughter or cry
- Unnatural attraction to something
- Abnormality in eating, sleeping, discharging urine and stool
- Harmful behaviour for self or others
- Eating anything.

Main characteristics of autism

For each child the characteristics and degree of autism are different. Main identifying characteristics are social interaction, communication with others and repetitive behaviours. These three are known as main characteristics to identify autism. Due to autism feeling of senses, skills of communicating with others and social interaction get retarded. As a result, there are seen repetitions of behaviours or enthusiasm for inconsistent behaviours. We should know that autism is caused by neurotic problem and therefore symptoms of two autistic patients are not exactly the same.

A. Social symptoms: Most of the autistic children find it very difficult to maintain social interaction with others. In first few months of their life, they do not maintain direct eye contact with others. They are indifferent in attitude and like to be alone. They do not expect attention by others and also do not like to be embraced. They do not show normal reaction to others anger or affection. The autistic children take long time to learn anything and they do not react to the thinking or feeling of others. Common gestures such as smiling eye blinking, or facial expression carry little meaning to them. The children who do not understand the meaning of gestures cannot understand the meaning of the sentence "Come here" in different situations. As do not realise the meaning or body gesture and facial expression the social world remains meaningless to the autistic children.

The tendency of the autistic children's being excited and aggressive blocks them from developing social relationship. When they go out and see unfamiliar people, they get angry or frustrated, some of them lose control upon themselves at that time they may break things, hurt others or even their own body.

B. Problem of communication: Language is the main medium of communication. Due to language problems, autistic children face difficulties in communication with others. From linguistic development aspects, autistic children are different. There are some autistics children who never learn how to speak and thus remain speechless for the whole life, some other children do babbling within a few month of birth but it also stops. Again for some others it takes 5-9 years to learn language. But the autistic children can learn to communicate with others by means of picture, signs, or touch. Many autistic children show abnormality in language use. They cannot make correct sentence by using correct words, some of them express their minds winds with a single word; some others repeat the word they hear. Some autistic children listen to a word and keep repeating the same like a parrot. It is called echo-lalia.

There are many other autistic children who have little problem in language use. They can use many words and have conversation correctly. But they cannot understand the differences in meaning of the same sentence in different situations. Again they also cannot properly realise the changes of meaning causes by changes in body movement and tone.

C. Repetitive behaviours: Children with autism are physical normal and almost all they have ability to control muscles but unusual repetitive behaviours make them different from other children. This repetitive behaviour may be either light or acute. Many of them move their hands again and again, stand up on the toes, or keep standing is a special style for long time often they do not play with toys like cars and trains but they arrange them in a line. If any one breaks the line of toys carelessly. They become worried and frustrated.

Children with autism want to see everything as it is around them. They do not like change of any sort. They get very annoyed if there is a little change in daily routine like timely eating, taking bath, following the same road to school etc. Repetitive behaviours keep them engaged such as gazing at fans or lights for long time. Some of them are found with special enthusiasm for numbers, sign or science.

Some distinctive qualities and strong aspects of autism:

Some autistic children show outstanding skills and abilities in some specifics areas. The numbers of such gifted children are in significant but such special qualities make them different from others. It is not true for every autistic child the guardians should be careful about special skills of the autistic children and thus they will be able to help the children develop their preferred skills through proper care and attention.

It is found that autistic children can develop their talent in any area they pay attention. For example by paying attention to calendar such children can remember dates of birth of many famous personalities and thus they can memories some much information together. Again by paying attention to a difficult and technical task they can solve the problem by dividing it into small parts.

Some strong sides of autistic children:

- Ability to observe minutely
- Understanding and remembering discipline and routine, sequence pattern etc.
- Memorising mathematics, time table of trains, scores in a game etc.
- Skills in computer and technology
- Interest for music and musical instruments.
- Attention to special subjects or preference
- Artistic skills
- Reading written language at early age in spite of problems in understanding.
- Memorising spelling of words
- Truthfulness
- Skills in solving problems

Causes of autism spectrum disorder:

In short it can be said that why autism occurs is not known yet. But along with increase of awareness and knowledge about autism, the search for its causes is also going on more widely. Though its actual cause is still unknown, it is scientifically established that autism may occur for many unidentified reasons. From the complexities that arise from autism it can be inferred that there might be a number of causes of autism. Any time during antenatal period, during birth or postnatal period autism may take place due to genetic influence or risky environment.

Only a few symptoms of autism in children do not prove that they are suffering from autism. If the specialist doctors who can say whether any child is suffering from autism or not. Doctors like child disease specialists, psychiatrists, child psychiatrists, child neurologists, psychologists or doctors trained on autism are the right people to diagnose autism.

Inclusion of autistic children into mainstream education programmes

Education programmes for autistic children should be intense and elaborate. In that case specialist professionals are needed to determine how many hours a week autistic children will spend for study based on their behaviours, development, social and academic needs etc. Only a single method may not be enough to educate autistic children and that is why together or gradually more a number of methods may be tried. Based on applied behaviour analysis principles a number of methods may be applied upon autistic children where necessary.

Beside normal education system, the teachers have to provide extra necessary care for education and development of the autistic children. For preparation by guardians and others family members to take necessary steps to help the autistic children in their strengths and needs, there should be good communication among them regarding effective strategy, coordination and assistance for the development of the children. Not only classroom education for autistic children but also inclusion of them into mainstream education is important. It may be for short time but effective inclusion into mainstream increases the autistic children's confidence and skills. For the success of autistic students in their academic performance, others' positive attitude towards them is very essential. Therefore, their small successes should be highlighted to encourage them. If the teachers as well as parents and other family members know the characteristics of autism and qualities of a specific student, they can make a practical plan to develop the autistic.

How you can help your autistic friends at your class

Classmates of autistic children are called 'cooperative friends'. We should realise the concept of friendship and develop environment of being united so that autistic children can grow with proper association and due respect. Compassion and positive mentality for autistic children will benefit all of us because among them some are our brothers or sisters or neighbours or relatives. Autism-related education or training for compassion should not be based on specific students but it should be universally applicable for all.

Role of classmates for autistic children in understanding instructions and social interactions

1. Taking students from one class to another;
2. Keeping classroom work and educational equipment tidy;
3. Maintaining daily class routine;
4. Encouraging interaction with other students.
5. Retelling main gist of what the teachers teach in the class.
6. Assisting the autistic children to participate in classroom discussions.
7. Helping them express their answers made orally or with communication machines in writing.
8. Giving them required guidelines and motivation when they are frustrated.
9. Rewarding autistic children for maintaining communication with others.
10. Giving necessary instructions to understand classroom activities.

Generally the symptoms of autism may be there in a person throughout the life but proper care, assistance, guidelines and education may improve some of the symptoms to some extent. Those who have minor problems may improve remarkably and lead more or less a normal life. It is seen that children with acute problems do not improve much in speech and cannot take care of themselves even. Obviously, if the problems are detected in their early years, intensive training and instructions may help the autistic children achieve success in many fields.

A good number voluntary organisations namely Proyash, Autism Welfare Foundation, SWAC, Autistic Children Welfare Foundation etc have been developed in Bangladesh to deal with the problems of autism. There are some specialised schools for education and training of autistic children. Government support and sponsorship will help them these organisations develop more and contribute effectively.

Task-1: Write down the symptoms of autism.

Task-2: Write on the board what should the classmates do with autistic children?

Exercise

1. Put tick (✓) to show the correct answers.

1.1 What is the main cause of outbreak of drug addiction in Bangladesh?

- a. frustration in life
- b. curiosity for drug
- c. separation of parents
- d. easy availability of drug

1.2 What are the cause of AIDS contamination?

- a. unsafe sexual union
- b. professional blood selling
- c. homosexuality
- d. using same needle to inject drug

1.3 What is the reason behind the fact that housewives outnumber any other group of AIDS affected women?

- a. unawareness
- b. poverty
- c. AIDS affected expatriate husband
- d. not using contraceptive pills

1.4 Which one is *ganja* like drug?

- a. marijuana
- b. phensidyl
- c. opium
- d. pathedine

2. Fill in the gaps with appropriate words.

- a. Drug addiction means strong----- to drugs.
- b. Phensyil is ----- type of drug.
- c. Taking tobacco-type drug mainly means -----.
- d. AIDS quickly destroys one's ----- system.
- e. ----- refers to excessive tiredness.

3. Match the words at the left side with the words at the side-

- | | |
|--------------------------------------|-----------------------------------|
| a. suffer from fever again and again | a. service providing organisation |
| b. pathedrine | b. a type <i>ganja</i> like drug |
| c. marijuana | c. AIDS |
| d. HASAB | d. works like opium |
| e. nicotine | e. tobbaco |

4. Short questions

- a. What do you understand by drug?
- b. Write down three bad effects of drug addiction.
- c. What is AIDS?
- d. What are the symptoms of AIDS?
- e. What is Asperger's syndrome?

5. Essay type questions.

- a. Describe bad effects of drug addiction.
- b. Discuss how to build public opinion against drug addiction.
- c. How does AIDS spread and what are the preventive measures? Discuss.
- d. Discuss the symptoms of autism.

Chapter Seven

Puberty & Reproductive Health

After birth, a baby gradually grows up. We call the various stages of growth as Stage or Phase. A baby up to the age of five is called to be in its childhood. A boy or girl under childhood is called baby. The age between 6 to 10 years is called boyhood. In boyhood, if the baby is girl, she is called baby girl and if the baby is boy he is called baby boy. That is the gender of the human being becomes apparent at this stage or phase. A boy or girl from 10 to 19 years is called a teenager or adolescent. This very time is called puberty.

During this phase, their body starts the process of emerging into the body of a girl or a boy with the distinction of gender. Puberty is a stage or phase between boyhood and youth. The knowledge on the specific organs of body directly related with reproductive functionalities is called the issues of reproductive health. Be it a baby boy or baby girl, the reproductive health of a baby boy or baby girl is associated with the general health for the various phases of human being ranging from infancy, to childhood, to boyhood, to adolescence and to a grownup person. So, everyone should know about reproductive health and the ways and means to preserve it as well.



A boy and a girl during puberty

At the end of this Chapter we will be able to -

- explain puberty and the various changes taking place during this period/time.
- fix up the do's and don'ts of the physical and mental changes during puberty.
- explain how to combat the various mental pressure and frustrations ensuing during this period.
- describe the necessity of nutritious food at puberty.
- explain the reproductive health and the possible measures for the sound maintenance of the same.
- explain the rules of reproductive health.
- explain various health tips and services during pregnancy.

Lesson-01: Puberty and the Pertaining Changes during Puberty : A human being undergoes various stages/phases with the advancement of age. These are sequentially infancy, childhood, boyhood, youth, adolescence, maturity and senility. The age of a baby from 0 to 5 years is called infancy or childhood. Again, age from 6-10 years is boyhood while age from 11-19 years is adolescence. A boy or girl during adolescence is called youth or adolescent. A process of transfiguring into male or female ensues during adolescence. This very nature and functionality of adolescence is called puberty. The puberty of a girl starts earlier than a boy. The puberty stage begins during the age segment of 8-13 years in case of girls. On the other hand, the puberty stage of boys usually starts from the age range of 10-15 years. But in some cases, puberty may start earlier than the stage or segment mentioned here for some boys and girls.

The Changes during Puberty: The physical or physiological changes are prominent during the evolution stage of puberty. On observing these changes, it can be perceived that someone is passing or undergoing the puberty stage. The changes that usually take place during puberty are of three kinds such as 1. Physical or physiological, 2. Mental or psychological, 3. Behavioral.

The physical or physiological changes during Puberty:

The changes that are prominent in case of adolescent boys are:

1. Weight and height increases.
2. The body tones and tightens and the shoulder and chest widens.
3. Hair sprouts in specific limbs or parts of the body.
4. Moustache and beard sprouts at the age of 16/17 years.
5. Vocal cord becomes strong, harsh and crude/coarse.
6. The reproductive organ becomes bigger and stronger.
7. Nocturnal emission and ejaculation takes place.

The changes that are prominent in case of adolescent girls are:

1. Weight and height increases.
2. The bone of the heap becomes harder, wider and fatter and the heap and thigh becomes heavier.
3. The breast burgeons.
4. Hair sprouts in the specific organs.
5. Menstruation or periods starts.

Various adolescent boys and girls may not experience the same kind of changes or growth during their puberty. As for example, some adolescent girl starts menstruation earlier or later than the benchmark set against the age segment. In case of boy or girl adolescents, the height of everyone might not increase equally always.

The Mental or Psychological changes during Puberty: During puberty, certain mental or psychological changes also take place side by side the physical or physiological changes. These changes are natural and evitable and the adolescents try to accommodate these changes with the passage of time. The mental or psychological changes that happen during puberty are-

- a. One becomes inquisitive about things unknown and unfamiliar.
- b. Confusion, hesitation and shyness become pervasive in movement and daily activities.

- c. One feels the urge to be independent or egalitarian.
- d. The urge for attention and love of the dear and near ones become intense.
- e. The tendency to be moved by emotion becomes dominant and strong.
- f. The girls and boys feel attraction towards each other.
- g. A wrong attraction towards smoking or use of drugs rises especially in case of boy adolescents during this period.
- h. The stage of mental maturity starts.

Behavioral Changes during Puberty: The behavioral changes that we notice among the adolescents are-

- a) To act like the grownups.
- b) To prove or establish him or herself as a distinct individual through various regular and natural activities.
- c) To form one's own opinion and idea in every matter.
- d) To indulge in risky and frisky tasks.

Task-1: Form a group of 5/7 students according to the instruction of the teacher. Think about your classmates or year mates. Prepare a list on the things that have commonly happened to all. Give the title, "General Changes". Then make another list of those changes that are uncommon and give its title, "Other Changes." This will be a group initiative.

Task-2: Fill the table below with the changes that have happened among the boys and girls during the last 6 months to one year time.

A boy during Puberty

Physical or Physiological Changes	Mental or Psychological Changes
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

A girl during Puberty

Physical or Physiological Changes	Mental or Psychological Changes
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Lesson-2: To accommodate with the Mental or Psychological changes during puberty:

We have learnt it earlier that generally the time or period of the boys and girls under the age segment of 10-19 years is called puberty. During this time, the boys and girls develop numerous changes in their physical structure and physiological aspects while mental or psychological changes also prominently increase. But due to variation in climate, geographical location, topographical elements, food intake and mental makeup, one might differ in starting time of puberty with the other one. The ingredient or element

solely responsible for various changes during puberty is actually a kind of chemical substance/matter called ‘Hormone’. Estrogen and Progesterone are two hormones responsible for various mental or psychological and physical or physiological changes among boys and girls. Physiological and psychological changes that happen among boys are due to emergence of a hormone called Testosterone.

The Mental Agony or Pressure during Puberty: Due to physical and physiological changes among the boys and girls, mental agony or pressure takes place at the same pace. Because these changes happen with a sudden intensity. Not being familiar with these changes, one becomes frustrated or worried sometimes. The changes prominent in case of girls, are menstruation and related issues. This happens every month which is a natural physiological change in reality. If a girl is well briefed about the do’s and don’ts during this stage, she will not be worried or lost or at a fix. They will not have even the sense of guilt in them. These sort of guilt feelings and mental agony are injurious to health. Some sort of discomfort and instability works among the boys and girls during puberty. This situation is especially created when a girl experiences menstruation and a boy faces nocturnal emission or ejaculation sort of things. They face severe mental torments and cannot concentrate in their studies and regular choir of life.

To Accommodate with the Psychological Changes during Puberty: If the adolescents are cognizant about the changes during puberty and have preconceived ideas and knowledge on the same, they would have the mental preparation for such happenings. Consequently, they can do things easily and their diurnal choir may also remain unhampered. At the same time, they can also prevent some possible diseases associated with these. While changes take place during puberty, one can discuss the issue with his or her parents, elder brothers and sisters or anyone reasonable, responsible and guardian-like and form ideas and disperse unnecessary ill-feelings and sense of guilt. As a result, confusion and frustration will be overcome and tendency towards leading solitary lifestyle would also be resolved. During puberty, the boys and girls also develop some sort of emotional changes. At this stage, to accommodate the adolescents with the mental or psychological changes, the parents and guardians have to be very sympathetic and friendly with them. They need to be encouraged and cooperated in terms of their mental or psychological changes including all other changes. The adolescents themselves have to be careful and attentive as well to ensure their sound mental health. Their first and foremost task is to accommodate with the physical or physiological and mental or psychological changes happening inside them. Reading good story books and playing with inmates, class mates and year mates naturally can keep them jolly and jovial and help them reduce such mental pressure or agony.

<p>Task-01: Write down in the following table the various behavioral and mental or psychological changes that take place during puberty among the adolescents The Changes in Behavior and Mentality during Puberty</p>	
Behavioral Changes	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.

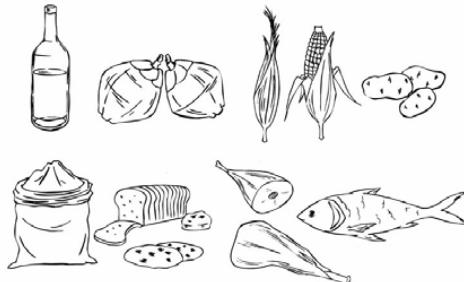
Behavioral Changes	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.

Mental or Psychological Changes	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.
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Task-2: Prepare a table describing the various steps or remedies for preserving the mental or psychological health during puberty of the adolescents.

Lesson-3: The Necessity of Nutrition during Puberty : During puberty, boys and girls need nutritous food because during this period, they grow abruptly and the activities of the body also increase exponentially. This is why; they need to take properly designed nutritious food. But many boys and girls and even their guardians do not pay much heed to this matter. Some hold the opinion that nutrition and rich food values are only prevalent in expensive food and fruits. But such ideas are grossly mistaken and misleading as well. If one is cautious and selective, one can derive rich food value and nutrition from easily available and less expensive food and fruits.

The Necessity of Nutrition according to Age, Physical Structure and Nature of Job: A balanced diet is one that accumulates and includes all the six essential elements of food value and nutrients. According to age diversity, the amount of balanced diet for an individual may vary. As for example, an adolescent of 13/14 years requires more nutritional package as that of a child between the age segments of 8/9 years. There is no variation in the nutritional intake between a baby boy and a baby girl; between an adolescent boy and adolescent girl or boy youth and girl youth. Again, if among two youths of the same age, where one is quite tall and healthy and another is undersized and of ordinary health, the food intake would drastically vary and the one who is well-built/stalwart and hardworking would consume more food due to his or her health and body structure while the other one's intake will be reasonably too lower. This disparity in food intake may even happen between two girls or females of the same age and body structure. This is how, the food intake varies depending on the variance of age, body structure and job nature. All the six elements of food are essential for each individual under the puberty period or stage both for the physical and mental growth. These foods provide essential nutrients in the body necessary for balanced and proportionate growth. Besides, malnutrition among the adolescents may cause various diseases.



Six essential elements of food

Task-1: Prepare a list of balanced diet for the adolescents. This list should include all other items that are cheap and easily available.

Task-2: Write about the disadvantages if boys and girls do not take nutritious food and also about the necessity of food and its variation according to age, body structure and job nature and discuss those in the class.

Lesson-4: Reproductive Health and Preservation of the same: The health related issues and matters of those organs of the human body that are directly associated with giving birth to babies is called Reproductive Health. Reproductive health is associated with the reproductive organ and the process of reproduction. So, reproduction in its original sense means to give birth to babies. At the outset of youth, the reproductive organs get organized and well built. The safe and healthy birth of future generation actually depends on the healthy lifestyle and reproductive organ of the present generation. So, for a healthy, safe and pleasant lifestyle and livelihood, everyone should acquire proper knowledge about Reproductive Health.

The Necessity of Reproductive Health and Ways and Means: At the process and time of puberty, the girls and boys undergo certain physical and physiological changes. If the boys and girls do not have preconceived idea about such changes, they usually get worried and harm themselves being misled by faulty ideas and conception. At puberty, a boy ejaculates and a girl menstruates. Both the boys and girls need to be cognizant from this time of puberty about such physiological, psychological and behavioral changes. Because at this very stage, the body of a human being starts transforming into the body of a male or female. The menstruation of a girl and ejaculation of a boy is nothing but indicative of his or her power and capacity for a reproductive health. Cleanliness is the most vital part of the Reproductive Health. When menstruation happens, it is essential to be neat and clean and take regular bath/shower. During this period, one needs to have nutrient food and enough water. A girl should take advice of the parents, health workers and close relatives about these issues. Since during puberty, the mental or psychological condition changes, some prefers to be aloof and alone. Keeping this period in mind, the parents and guardians should be friendly and sympathetic towards them. Cooperative and friendly attitude would help them to come out of such instability and discomfort and consequently would provoke euphoria and consistent and healthy growth among them. The biggest and worst risk of Reproductive Health is to get married at an earlier age and bear child or baby. Besides being affected by various diseases, there exist potential risks of death both for mother and the baby. To safeguard Reproductive Health, one badly

needs to be married at adulthood. If one abides by the government order, one can easily avoid such risks. Disease in reproductive organ may break out for various reasons. One should not hide if one is attacked by venereal or reproductive-organ-related diseases. One should take medicine and instructions from a competent doctor. This can help avoid infectious and venereal diseases.

Task-1: Write in the table what to do in order to preserve Reproductive Health.

The Topic on Reproductive Health	Things to be done
1. At the time of menstruation	1. 2. 3. 4. 5.
2. At the time of Ejaculation	1. 2. 3. 4. 5.

Task-2: Write chronologically, what are the problems of a pregnant mother if she got married at earlier stage.

Lesson-5: The Health Rules for Reproduction and the Service Required during Pregnancy: One of the especial and essential parts of the whole human body is Reproductive Health. Reproductive Health does not necessarily mean the absence of diseases related with reproductive organ. Reproductive Health means and includes safe and secure delivery process through and under sound and safe physiological, psychological and behavioral condition. Delivery is the process of begetting a new human being. The healthy future generation largely depends on the holistic approach initiated for the Reproductive health of the present generation.

Various Indispensable Elements Incorporated with Reproductive Health:

1. The Reproductive Health Rules during Puberty: The boys and girls right from the start of ejaculation and menstruation during puberty need to abide by the rules and regulations of Reproductive Health.

2. Pregnancy at the Proper Time: A girl should not conceive before 20 years of age. If conceived at the proper age, it becomes beneficial both for the child and the mother.

3. Safe Maternity: Safe Maternity means and includes the maintenance of a healthy state and condition of the carrying mother right from the pregnancy, to delivery, to post delivery stage. The death rate of maternal morbidity is high in Bangladesh. The main reason of such maternal morbidity is that the mother during pregnancy is not properly taken care of. She hardly gets adequate food, medicine and medical facilities. Besides, early marriage and pregnancy also cause the illness and malnutrition for both the mother and the baby.

4. Early Care/Pre Natal Care for the Baby: After being conceived, if the pregnant mother does not take nutritious food, receive proper medical treatment, take proper rest and sleep and keep clean and fresh, she is very likely to suffer from various complicated diseases.

5. The Care of the Nascent Baby: A baby from its birth up to 28 days is called Nascent Child. Right after its birth, it is crucial to lactate the baby, provide adequate food to the lactating mother and the baby as well as immunize the baby through the right vaccination.

6. The Nutrition of the Child and the Mother: Most of the babies and mother in our country suffer from malnutrition. Since the pregnant and carrying mother suffers from malnutrition, consequently, the baby is also affected by malnutrition. The main reason of such pregnancy is to be repeatedly pregnant and begetting child.

7. The Treatment and Clinical Care of various Diseases Pertaining to Reproductive Organ and the Prevention of such Diseases: Among all such diseases, some diseases are worth mentioning. These are infectious diseases, venereal diseases, malignancy of the productive organ and HIV/AIDS. The incumbents should contact with the various consulting agencies responsible for the treatment of these diseases and take necessary consultancy from them.

The Healthcare during Pregnancy: Pregnancy is a special kind of change in human body. When a baby is conceived, this change in body only happens to the mother. Some irritable syndromes are noticed or felt by the females/ going-to-be-mothers within a few months from the time of conception. The common syndromes are menopause, vomiting-tendency or vomiting, giddiness, frequent urination, the heaviness and bigness of the breast. If someone is pregnant at an adult stage, she does not suffer from serious complications pertaining to physiology or psychology or behavior. The essential services and nursing cares to be rendered during pregnancy, according to standardized norms of Reproductive Healthcare literature, are-

- To be clean and fresh.
- To take bath or shower regularly.
- To take nutritious food, rest and sleep properly.
- To be under direct supervision of a competent gynecologist.
- To keep contact with the nearby clinic to combat pregnancy-related complications.
- To safeguard the reproductive organ from any sort of infection.
- To abide by the religious and social norms and etiquette. So, one should keep oneself busy or occupied with studying various books and various family or social work or activities.

Task-1: Prepare a list for a pregnant mother for the various precautions mentioned in this book.

Task-2: Write chronologically the various irritating syndromes that are observed among the pregnant mother within a few months from the time of conception.

Exercise

1. Put a tick (✓) mark on the right answer.

- If a boy or a girl takes less food than the requirement of the body-
 - Their beauty will be enhanced.
 - The proportionate growth of the body will be hampered.
 - They can avoid illness.
 - They can develop mental faculties.

- 1.2. Which bodily change happens during puberty?**

a) Height and weight increases. b) One wants to move independently.
c) One develops curiosity to know. d) The boys and girls develop attraction towards each other.

1.3 What are the mental or psychological changes happening during puberty?

a) One attempts to perform risky work/tasks.
b) One develops interest to know the unknown.
c) Beard and mustache sprout,
d) The hands and legs become taller.

2. Fill in the following blanks with appropriate word/words:

a. The clinical on those organs of human body which are associated with giving to baby is called Reproductive Health.
b. The girls develop earlier than the boys.
c. During puberty, the adolescents badly need food.
d. The food accumulating and including various nutrients and food value is called a diet.

3. Write the statement from the left and place that on the respective place on the right column.

a. Hair sprouts in the various parts of the body.	a.Physical/ Physiological Changes
b. Wants to move independently.	1.
c. Indulges in risky tasks.	2.
d. Vocal cord turns harsh, coarse and strong.	b. Mental/Psychological Changes
e. The tendency to be moved by emotion increases.	1.
f. Wants to establish his or her opinion in every matter.	2.
	C. Behavioral Changes
	1.
	2.

4. Write briefly the answer to the following questions:

a) Why is nutritious food essential during puberty?
b) What do you mean by Reproductive Health?
c) Write the behavioral changes during puberty.
d) How is the care for nascent baby taken?

5. Essay type Questions:

a) Describe the physical/physiological changes during puberty.
b) Describe the necessity of nutritious food during puberty.
c) What do you mean by Reproductive Health and what are the ways and means to prevent or protect it?
d) Describe the essential health tips and services during pregnancy.

Chapter Eight

Team game

Games are inevitable for students at School. Games helps student develop physically and mentally and acquire social qualities. The main aim of games and sports is physical and mental development together with enjoyment through. Games and sports keeps body and mind fresh and helps build character. Participation in team games helps grow as good citizen by acquiring social qualities such as team obedience, law abiding, following leader, sense of discipline etc.



Equipments of different games

At the end of this chapter we will be able to-

- Explain the rules and regulation of games Football, Cricket, Hockey, Basketball, Volleyball, Handball, Kabadi and Badminton.
- Explain skills and techniques of different games.
- Explain the qualities of players of different position of different games.
- Participating games maintain rules and regulations.
- Development skills in a new game by acquiring qualities and skills of good players.
- Develop helping attitude through team games.
- Develop leadership qualities.
- Develop sense of abiding law and obedience to team.

Lesson-1: Rules and regulation of games.

Football- Football is an ancient game, in course of time this game has become a modern game now a days. Modern football was originated in England. Again rules of football were also formulated in England. Due to its huge popularity this game has spread all over the world very fast. Though Bangladesh is a small country, still football is very popular game here. There is a international body to control football namely federation international football association (FIFA). This organization came in being on 21 may in 1904 in Paris with initiatives and cooperation this organization football spreads in many

countries. As a member of FIFA, Bangladesh is also popular rising the game all over the country. Football is most popular game in the world. There are 17 rules to organise and conduct football game. FIFA ensures formulation and implementation of football related rules. Therefore this game is held all over the world maintaining same rules. Players abide by the rules and the referee implements the rules properly and neutrally. So, this game has been ever enjoyable and exciting. The rules are discussed sequentially below.

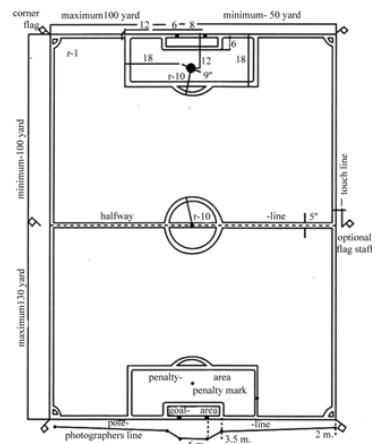
1. Playing field (rectangular): Playing field is the first rules of football. Maximum length of the field is 130 yard or 120 Meter. Minimum length is 100 yards or 90 meter. Maximum width 100 yard or 90 meter and minimum is 50 yard or 45 meter.

Measurement of playing field at international level will be-

- a) Length 120 yard, width 80 yard
- b) Length 115 yard, width 75 yard
- c) Length 110 yard, width 70 yard.

Any one of above mention measurements of field are used for competition national and international level. But for school boys playing field may be in length 100 yard and width 50 yard.

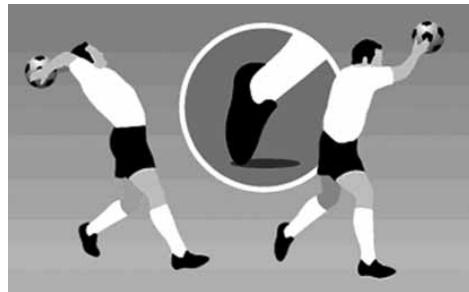
- 1.1. **Line marking width:** Width of each line not exceeding 5 inch. Name of the length line in touch line & width line is called goal line.
- 1.2. **The Goal area:** 60 yard from each goal post and extended 6 yard in the field of play and joined parallel with goal line. Whose length is 20 yard.
- 1.3. **Penalty area:** 18 yard from each goal post and extended 18 yard into the field of play and joined parallel with goal line. Whose length is 44 yard.
- 1.4. **Penalty mark:** Taking the penalty kick putting the ball or a mark is called penalty mark, in between two goal post 12 yard away from the goal line in the field of play and whose radius is nine inch.
- 1.5. **Corner flag:** 4 flags in the four corner of the playing field. The height of the flag at least 5 feet. Top of the flag will not be sharp and flags will be or top. There will be two flags one yard away from to outline and middle of field, which is optional.
- 1.6. **Corner area:** From each flag post a quarter circles, having radius of one yard shall be drawn inside the field of play, corner kick is being from this corner area.
- 1.7. **Goal post:** The height of lower edge of crossbar is 8 (eight) feet from ground and distance between two goal post is 8 (eight) yards. There is a net to cover the goal from back side net is hung is such a way so that goal keeper should not feel disturbance or obstacles.



Football field

- 1.8. **Center circle:** There is a circle of 10 yard radius at the middle of the mid line. This circle is known as center circle.
 2. **The ball:** Radius of the ball is 68 to 70 centimeter, weight of the ball is 410 grams to 450 grams at the beginning of the game.
 3. **The players:** Football team consist of 18 player or there 18 player in a football team. 11 members will play and seven members will be standby or extra player and will stay outside the playing field. But in regional or interschool foot ball competition number of players may be able to reduce.
 4. **Equipments of players:** Compulsory dress for a football player is jersey or shirt shorts of pant, socks, shin guard and boots. Players cannot wear such a dress which is dangerous for others.
 5. **Referee:** A person who maneuvers the game is known as referee.
 6. **Deputy referees:** Two deputy referees help referee in the field. There is a fourth referee outside the field. He also helps referee.
 7. **Duration of the play:** There are two half and duration of each half is 45 min and interval of not exceeding 15 min.
 8. **The start of play:** Players of both team stay in their own half and game will start with kick off with the whistle of referee.
 9. **Ball in and out of play:** The ball crosses the touch line or goal line in air or ground then ball is out of play. If ball on touch line or goal line then it is considered ball in play.
 10. **The Goal:** A ball cross the goal line completely may be in the air or on ground is declared as goal.
 11. **Offside:** A player stay at the opponent half without ball, two opponents are not in front of him, that time and in that position if he receives a ball from his teammate, he will be considered as offside.
 12. **Fouls and misconduct:** There are two type of kick for fouls and misconducts.
 - a. Direct free kick b. Indirect free kick. A free kick will given if a player commits any of the following offenses.
 - (a) Kicks or attempts to kick an opponent;
 - (b) trips an opponent, i.e., throwing or attempting to throw him by the use of the legs or by stooping in front of or behind him;
 - (c) jumps at an opponent;
 - (d) charges an opponent in a violent or dangerous manner;
 - (e) charges an opponent from behind unless the latter is obstructing;
 - (f) strikes or attempts to strike an opponent or spits at him;
 - (g) holds an opponent;
 - (h) pushes an opponent;
 - (i) handles the ball, i.e., carries, strikes or propels the ball with his hand or arm; (this does not apply to the goalkeeper within his own penalty-area);
- An indirect free kick will be for following fouls
1. playing in a manner considered by the referee to be dangerous, e.g. attempting to kick the ball while held by the goalkeeper;

2. charging fairly, i.e. with the shoulder, when the ball is not within playing distance of the players concerned and they are definitely not trying to play it;
 3. when not playing the ball, intentionally obstructing an opponent, i.e. running between the opponent and the ball, or interposing the body so as to form an obstacle to an opponent;
 4. charging the goalkeeper except when he
 - (a) is holding the ball;
 - (b) is obstructing an opponent;
 - (c) has passed outside his goal-area.
 5. when playing as a goalkeeper and within his own penalty-area:
 - (a) from the moment he takes control of the ball with his hands, he takes more than 4 steps in any direction whilst holding, bouncing or throwing the ball in the air and catching it again, without releasing it into play, or
 - (b) having released the ball into play before, during or after the 4 steps, he touches it again with his hands, before it has been touched or played by a player of the opposing team either inside or outside of the penalty area, or by a player of the same team outside of the penalty-area, subject to the overriding conditions of 5(c), or
 - (c) touches the ball with his hands after it has been deliberately kicked to him by a team-mate, or
 - (d) indulges in tactics, which in the opinion of the referee, are designed to hold up the game and thus waste time and so give an unfair advantage to his own team,
- 13. Free kick:** A goal can be scored from kick is called free kick. A goal is not scored from a kick in indirect free kick.
- 14. Penalty kick:** Any player of defending team inside the penalty area commit any fouls out of those ten foul then opponents will get penalty kick.
- 15. Throw-in:** The ball crosses the touch line by the touch of any player then opponent team will throw the ball from that place which is called throw in.



Throw in

- 16. Goal kick:** The ball crosses goal line outside of two goal post by the touch of opponent player. Then game started with a kick is called goal kick. Game started with goal kick taken from inside the goal area after ball crossing the goal line outside the goal post is known as goal kick.
- 17. Corner kick:** The Ball crosses the goal line outside the goal post by own team then opponent will get corner kick.

Skills of game: Football is a speedy game, it requires good physical fitness and also skills. A player has speed, stamina and skill will be a good player. Basic skills of football are as follows.

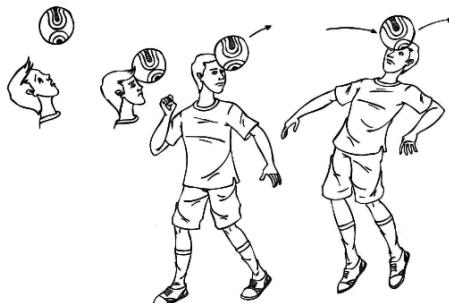
1. Kicking, 2. Heading 3. Dribbling, 4. Trapping, 5 Tackling, 6. Goal keeping.

1. Kicking: Football played by leg. One can acquire skill to control ball by his leg will be able to play football. There are three side of leg they are inside outside instep. A player uses these three sides. Football player can play different types of kick using different parts of leg. But inside kick is easy to play currently and can give pass to the nearer player. Many times player use outside to leg while giving pass to right side player. That means giving pass by using outer side of foot. Players kick hard middle of the ball using right foot placing in left foot left side of the ball also keeping eye on ball to send ball straight and rolling or ground, players maintain balance by spreading both hands, kicking foot will go straight and forward. Kicking lower side of ball to send ball high.



kicking

2. Heading: While heading the ball keeps in mind hit ball with head. Technique of heading.



Heading

- a) Hit the ball with forehead.
- b) Keep eye on ball.
- c) Hit ball with forehead bending upper limbs a bit back ward.
- d) Both hands will be spreader a bit.
- e) While heading left or right have to hit ball by fore head turning head left or right.

3. Dribbling:

Dribbling are two types.

- a) Short dribble- to control the ball.
- b) High dribble- to cover the more distance.

Exercise: Dribble the ball from one end to other end of field. First dribble with right leg then dribble with left leg and after wards dribbles with both legs. Exercise dribbling by using different parts of leg.

4. Trapping: To control or stop the ball other then hand is known as trapping. Trapping are many kinds such as-

- a) Sole trap
- b) Shin trap
- c) Thigh trap
- d) Chest trap
- e) Head trap.

a) Sole trap: To stop rolling ball or high ball by sole of foot is called sole trap.

b) Shin trap: To stop high ball will shin after dropping or touching ground.

c) Thigh trap: To control high ball with thigh height of the ball will be just above ground.



Trapping

d) Chest trap: To control high ball of shoulder level with chest.

e) Head trap: To control head height level ball with forehead.

Exercise: Two player/student will stand face to face. One student will throw ball, other student will stop ball by trapping with chest. Trapping will depend on height of ball in relation to body i.e., head height ball will trap with head thigh height ball by thigh etc. If ball drops in front of the player will low height then trapping will by sole or shire

student will practice in this way and develop expertise, at last develop mastery of the skill.

5. Tacking: Tackling is very important defensive skill. One can snatch ball from opponent by using this skill. To take control of ball from opponent is known as tackling.

6. Goal keeping: The responsibility of goal keeper is very high in football game. Goal keeper can stop the ball with any part of the body. But goal keeper mainly uses his hand for stopping the ball.

For example-

a) Catching the low ball: Ball rolling or group or low height ball, goal keeper will go to the line of ball from behind and bending upper limb forward and one leg will be one step ahead than catch ball.

b) Catching low (waist) height ball: Firstly goal keeper will go to line of the ball always keep eye on ball, catch the ball with both hands and keep the ball near to chest.

c) Catch the high ball: While catching high ball you should jump up and catch the ball with two hand keeping palm behind the ball. Again the balls which are out of range and cannot be caught should be punched out to avoid goal post.



Goal keeping

Task-1: Draw a football field with all necessary markings and present in the class.

Task-2: Draw the picture of football the name of different parts.

Task-3: Demonstrate in the practical class which part of forehead will be used to head a ball.

LESSON-2: Cricket: The birth place of cricket is England. It is called game of king. Cricket is an aristocratic game. Considering clean dress day long match, water break, lunch breaks, afternoon tea, gentle behavior of players, cricket is called an aristocratic game. Due to its huge popularity, there arose the need to form an international committee to formulate rules and regulations to control programmes, to ensure publicity and management of vents etc. Test playing countries are (England, Australia, New Zealand, South Africa, West indies, India, Pakistan) in 1909 representatives formed test playing counties namely England, Australia, New Zealand, south Africa, West indies, India, Pakistan, for made a committee named international cricket council (ICC). This committee is the all in all in taking decision about international cricket. Bangladesh, Sri Lanka, Zimbabwe are also the test playing country after that seven countries.

Rules of cricket

1. The pitch: Length of pitch is 22 yard (20.12 meter), width 10 feet (3.04m) there are three stamps at the end of pitch, height of the pitch is 28 inch, and width of three stamps is 9 inch. Bells are kept on top of the stamp. Height of stamp with bell is $28\frac{1}{2}$ inch.

2. Cricket field: Draw a half circle with a radius of 66-75 yards from the middle of the stamp. Then joined the both ends, which will be the boundary line which called oval shaped

field. Again draw a circle with a radius of 60-75 yard from the middle of the pitch is known as round shaped field.

3. The players: A cricket team consists of 16 members of them 11 player take part in game and one member of the team will be twelfth player can do fielding only.

4. The ball: Weight of the ball is 5.50-5.75 ounce circumference of ball is 22.04 -22.09 cm.

5. The bat: Maximum length is not more than 38 inch and width not more than $4\frac{1}{4}$ inch.

6. Position of players in field: The players of fielding team take position different places of the field according to the strategy of bowlers. So players of fielding team stand in eleven places. But there are many positions in the field. Positions are as follows- Third man, deep fine leg, long leg, backward point, second steep, third steep, first steep, leg steep squire leg, gulley, cover point, short extra cover, silly mid off silly mid on short leg, extra cover, mid off, mid one mid wicket, long off, long on.

7. Over: There are six correct bowls in an over.

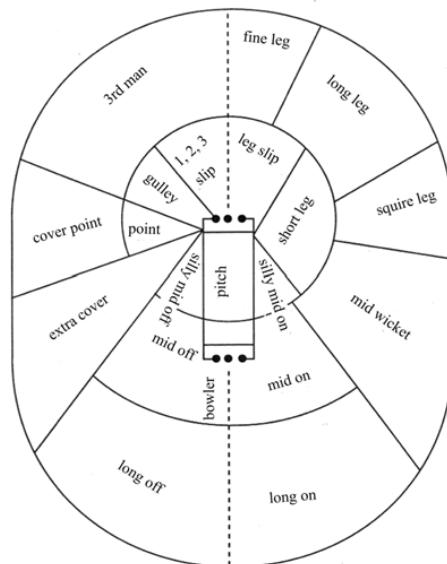
8. Boundary: Hit by the bats man when a ball crosses the boundary touching the ground is called boundary. Every boundary adds 4 runs to the score of the bats man.

9. Over boundary: Hit by the bats man when the crosses boundary line in air is called over boundary. Every over boundary add 6 runs to score of the bats man.

10. By run: As a result of misfielding's sometimes batsman scores run which are known as by run.

11. No ball: A no ball occurs when a bowler does not follow the rules of bowling or breaks any bowing rules is called no ball, causes of no bowls are given below.

- a) If bowler bend elbow
- b) If bowler enter into the popping crease before delivery of a ball
- c) If the bowler causes harm to wicket while bowling.
- d) If the ball drops before half the pitch white bowling.
- e) If ball goes straight over the shoulder high of a bats man.
- f) If fielder position is not according to rules.



Position of players in the field

12. Wide ball: If goes away from bats man, which means out of the reach of bats man. There is a difference of distance between wide ball of one day and test cricket.

13. Run out: If fielding side break the ball of stamp while taking run by the bats man and bats man not inside the crease is called run out.

14. LBW: When the umpire thinks that the ball could have hit stamps if not blocked by legs, the umpire may declare the bats man out following the appeal by the opponent is called leg before wicket (LBW).

15. Bowled out: When the ball directly or shot by batsman hits the stamps and displaces then ball the batsman is declared out. It is called bowled out.

16. Caught out: When the batsman hits the ball in the air and a fielder catches it before touching ground, that batsman will be out and it is called bowled out.

17. Stamp out: When batsman goes outside the crease to play ball and the wicket keeper breaks the stamps, then the batsman is declared out. This is called stamp out.

18. Timed out: When a batsman fails to take guard within 3 minutes of a wicket fall he will come under the rules of timed out. For T20 duration of timed out is $1\frac{1}{2}$ minutes.

19. Hit wicket out: While playing, if the batsman hits the wicket by his body, dress or bat and the bell falls, the bats will be out, this called hit wicket out.

20. Hit the ball twice: When the bats man hits or touches the ball with his body or bat, he can't hit the ball again to safe his wicket. If he does so it he will be out and it is called hit the ball twice out.

21. Hold the ball intentionally: If bats man hold the ball or play the ball intentionally than bats man will be out under the rules hold the ball.

22. Obstructing the fielder: Batsman intentionally obstructing the fielder, when fielding the ball, and then batsman will be out by obstructing in the field.

23. Century and half century: When a batsman scores a hundred run playing ball is called century and scores a fifty is called half century.

24. Maiden over: When a bowler bowls so perfectly and bats man cannot score any run is called maiden over and in that over if bowler takes any wicket is known as maiden wicket.

Skills: In cricket skills are mainly divided into four categories, they are

- a) Batting
- b) Bowling
- c) Fielding
- d) Catching
- e) Wicket keeping

a) Batting: Basic skills are-grip, stance, back lift, stroke, gloves, drive and hook, batsman can entertain spectators by correct application of their skills. Batsman can also score fast run by hitting boundary using these skills and spectators enjoy the game.

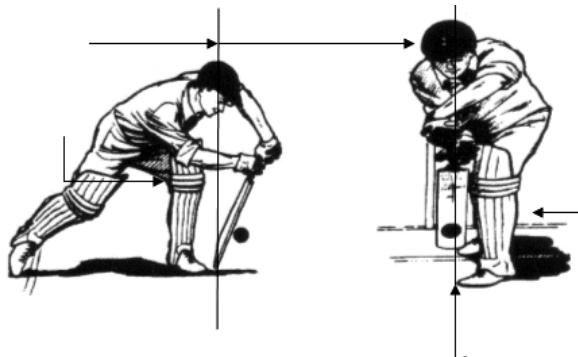
1. Grip: In batting grip is very important. Proper grip help batsman to play stroke both side of wicket. For right handed batsman, position of left hand will be on top of bat and right hand will be under the left hand. Batsman grip the bat with both hands together side by side and hold the handle of bat with finger's and thumb. The shape of index finger and thumb will be like English letter V.

2. Stance: A right handed batsman stands keeping left leg facing the bowler may be inside or outside of the crease and right leg inside the popping crease, knee will be flex, body weight of both legs and feel easy, comfortable stance. Left hand above and on left thigh left shoulder and eye on bowler.

3. Back lift: Lifting bat back is very important for battling. Batsman's eye always on bowler and shoulder and elbow should be facing bowler.

4. Stroke: Batsman has to play different types of stroke on hit the ball according to the merit of the ball. Sometime batsman plays defensive stroke and sometime offensive stroke. When a batsman putting his leg one step forward keeping angle of bat 30^0 - 40^0 and play a defensive stroke. It is known as forward defensive stroke. The position of bat at that time will be like English letter "v". Again bats man play a stroke putting one step back word known as back ward defensive stroke.

5. Drive: Offensive and attacking batting is always enjoyable to spectators. A batsman usually putting one step forward outside popping crease hitting the ball hard to cover more distance is known as forward drive.



Forward defense

6. Hook shot: When the bowler bowls a short pitch ball, it drops away from batsman and bounces high, while playing a hook shot, a right handed batsman keeping his body weight on right leg and hitting that high bounced ball in the air moving his bat right side to wards on side is known as hook shot. A batsman has to make use of his eyes hands and legs very fast in order to play a hooks shot. But shot is a risky shot to play. Without expertise one should not play a hook shot.

7. Cut shot: When a bowler bowls a short pitch ball, batsmen put his step one step forward or backward and play the ball. Beginners should not practice this shot. Shot selection is very important white playing cuts. This skill is known as cut. A batsman

should go to the line of ball when ball passes two feet away from off stamp and play a cut shot by cutting the ball.

8. Leg glance: In this stroke a bats man has to use his wrist and hand very force fully. After play the shot leg glance ball usually travel towards squire leg and fine leg. Leg glance played in two ways first, while stepping forward outside it popping crease and second stepping back, towards wicket to play a leg glance way be played by moving legs left ward or right ward according to ball.

Bowling: In cricket bowling is one of the main skills. Batsman cannot score or cannot do well against very high standard bowling. A batsman may be out soon against attacking bowling and as a result of high standard attacking bowling; a team can win in competition. Some basic skills of bowling are given below.

1. **Correct grip to hold the ball:** The grip of ball will be depends on type of bowling. Grip of fast bowling and spin bowling are not same. But grip of any type bowling will be with the help of finger not with the palm. So, bowler can control bowling.
2. **Run-up:** The bowler comes running to deliver the ball from bowling crease towards batsman. This process of running is very important. Bowling speed largely depends on running speed. A batsman cannot play a ball with high speed easily. A bowler uses his feet in to fix distance of run up. At the time of run up body weight of the bowler is inclining forward.
3. **Delivery:** Leaving at end the run up is called delivery of a right handed bowler at the time of delivery jumping on left leg and twisting the body right ward and landing on right leg fondly delivers the ball keeping eye on batsman.
4. **Follow throw:** After delivery of the ball bowler maintains balance of his body in a specific way which is known as follow throw. After delivery of the ball a bowler has to move his body fast from right side to straight position keeping his eyes on pitch, where the ball drops.

Fast bowling

1. **Fast bowling in swing:** It is easy to swing the fastball inside means towards stamp. But to maintain line and length every time is not easy. If a bowler cannot maintain line and length he has to give more run. The characteristics of a swing ball is pitch outside the off stamp and swing inside toward stamp very fast. The thread line of the ball will be kept in between index and middle fingers. At the time of delivery thread of the ball facing towards leg steep, right hand (elbow) upward and left hand downward usually from swing back fielders get catch at short leg position.



Grip of fast bowling

2. **Fast bowling out swing:** The grip of fast bowling out swing similar to fast bowling in swing, thread will be in between index finger and middle finger other three fingers will be under the ball. But face of the thread facing toward first steep.

Spin bowling

1. Leg spin: Spin is mainly two types, (i) Side spin (ii) Top spin.

(i) **Side spin bowling:** In side spin ball, bowler spin the ball clock and anti clock wise both ways. A right handed spin bowler when bowler a right handed batsman than ball moves anti clock wise and the ball become leg break. Again it the moves clock wise that is off break ball. Top spin is a combination of leg break and off break. In spin bowling at the time of delivery. Wrist and arm move in 90^0 angles usually in leg spin ball pitch on the line of leg and then turn towards off stamp. In leg spin index middle and ring fingers and gripping the ball with thumb helps to hold the ball. At the time of delivery left shoulder will not be downward. Wrist will be flexing and third will help to spin the ball.

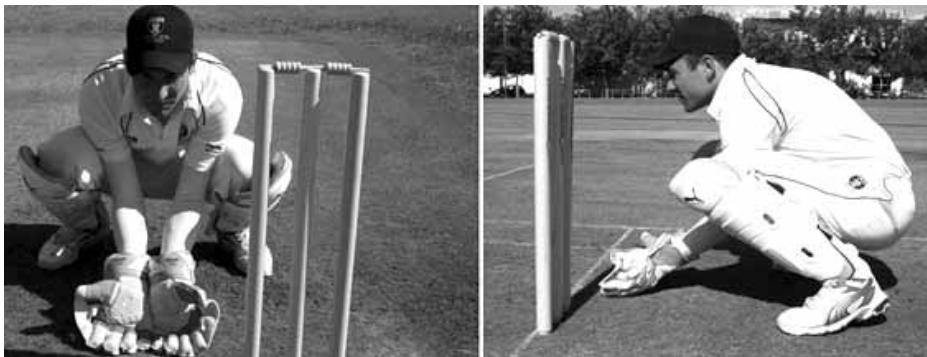
(ii) **Off spin:** In off spin bowling the index and middle finger will be placed across the thread of the ball, while tips of two fingers will be a little apart. The thumb will be on the thread and two other fingers will be to gather index the ball. Index finger will be on thread of the ball and moving thumb downward to spin the ball. In off spin ball will move like clock wise. The function of wrist in off spin bowling is similar to its function in opening the knob of a door.

c. **Fielding and catching:** In cricket fielding also attractive like batting and bowling and it also plays important role in win and defeat in game. When a fielder takes a catch of a batsman, spectators enjoy that catching. Every cricketer has to be a good fielder. Positions of the fielder are determined by the choice of captain or bowler. Usually fielder sent back the ball to the wicket keeper. In fielding catching is very important skills, fielder has to under the line of ball when batsman hit the ball high and always keep eye on ball. Both hands will be open and fingers are placed side by side, palm and finger will be flex. A sooner as ball touches hand, usually hands pulls close to chest and close finger, Apart from catching a fielder has to stop pick throw the ball.

Throw-In: In attacking fielding fast and correct throw is very important, as a result, can be possible to run-out a good batsman, also decrease the run rate of batting side. For good throw players has to use flex wrist hand and shoulder. Technique of throw-in after catching ball one should take initiative for throw, wrist, hand, shoulder has to work together while throwing a ball.

d. **Wicket keeping:** Position of wicket keepers is very important among all the players in the field. For this reason while selecting a best wicket keeper has to select a good wicket keeper. The quality of best wicket keeper is sharp eye fast reaction, strong hand, physical strength and courage etc. Generally it is considered that wicket keeper born, but cannot made him. The dress of wicket keeper is different than others player. They are, Wicket keeping pad, gloves, inner gloves, cap, guard, shoes, this are the dress and equipment of a wicket keeper. Wicket keeper has to take stance like batsman. Because he has to ready for all time to catch the ball coming from bowler, or batsman, wicket

keeper has to stand or half seat keeping legs are apart, body weight on both legs, keeping body a bit low/downward and eye vision over the wicket. Left leg on line of middle stump hand are side by side together, fingers are down ward and eye on ball.



Wicket keeping

Task-1: Discuss and demonstrate the differences between grip of fast bowling and spin bowling.

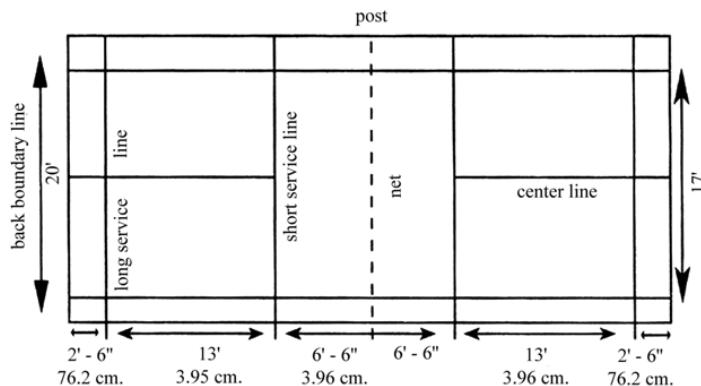
Task-2: Demonstrate the stance of batsman in field.

Task-3: Show the position of wicket keeper during fast bowling and spin bowling.

LESSON-3:

Badminton: There are differences of opinion on the birth place of badminton but most of them are in opinion that it born in Pune of India. English soldiers at Pune in early 1700th century observed and feel interest that local people playing shuttle cork with short bat. They learn that game from local people and they went back to England during leave and start playing and introducing this game. The soldiers were working in India during leave, they went back to home and gather at Badminton and started this game. Then according to the name of that place the game named as Badminton. The game was introduced in many countries for all aged and classes of male and female.

a. Playing court: Floor of the court should be made of wood but in any way should not be slippery. Shuttle is white in colour, so floor of court will be deep coloured but not shine. If the colour of floor is other than white marking of court will be blacks otherwise colour will be white. Badminton games are two types (i) Singles and (ii) Doubles- Measurement of single court length-13.41 meter (44 feet), width 5.18 meter (17 feet) Doubles court-Length-13.41 meter (44 feet) width-4.10 meter (20 feet). Badminton net is hanged on poll outside, middle point of both end lines. There are two parallel lines 1.98 meter (6' 6") away from midpoint of both side line known as short service line. Again 0.76 meter (2' 6") inside of the court from end line. Again there are two parallel lines 0.76 meter in side of the court from end line are known as long service line. This is used in doubles game. A line from short service line to end line of both side divided the court to in to two courts named right service court and left service court. All the marking will be 4 cm. in width.



Measurement of Badminton court, singles and doubles

b. Equipments:

1. **Post:** Height of the court is 1.55 meter (5' 1").
2. **Net:** Length of the net is 5.18 meter (17 feet) and width 0.76 meter (2' 6"). Height of the net from floor to both posts is 1.54 meter (5' 1") and in the middle height of net is 1.52 meter (5 feet). Top of the net will be with white tape of 0.76 meter width (3" inch) and there will be a rope or string inside the tape and which will be fixed with the post from both sides.
3. **Racket:** Length of handle racket is 68 cm. and length of head of the racket should not more than 29 cm. Length and width of rackets net is within 28 cm. and 22 cm respectively.
4. **Shuttle:** Weight of the shuttle is 4.74-5.50 gram. There are 14 to 16 feathers of duck in a cork. Radius of the cork is 1 inch to $1\frac{1}{2}$ inch. Top radius of feather is $2\frac{1}{8}$ inch to $2\frac{1}{2}$ inch.

All feathers are tie with thread. When a player hit a shuttle cork with racket and if it falls near long service line of opponent court than it the shuttle cork is considered standard one.

Rules:

1. **Toss:** The team of player win the toss can take service or court and opponent will take rest one.
2. **Point:** In singles and doubles game will be end of 21 points. But there is always at least a difference of two points to finish the game. Example 19-21, 20-22, 22-24 this way. But not exceeding point 30. The team of individual will get first 30 he will be winner. In third set players will change their court after scoring 11 points.
3. **Service:** In single game, for both male and female will commit a mistake will lose the service. In double games for male and female, first taking service team will not get chance for second hand. If commit any mistake opponent will get service will be diagonally not straight.

4. **Service fault:** Service faults occur for the following reasons.
 - a. If shuttle does not travel diagonally
 - b. During service both leg will in contact with gourd it one leg in the air than it is fault service.
 - c. If shuttle fall on short service or long service area.
 - d. If shuttle goes out of the court.
 - e. Shuttle should not be free from hand.
 - f. Shuttle should not be above waist height
 - g. If shuttle does not cross the net
 - h. During taking/doing service if player touches the marking of court
 - i. If interlineally give a fake to opponent. If deceives the opponent.
5. If any unforeseen accident takes place the umpire can declare late. For example. If the server serves before the receiver is not ready or both the player commits mistake simultaneously.
6. Five types of competition in badminton. They are-
 - a. male single
 - b. male doubles
 - c. Female single
 - d. Female doubles
 - e. Mixed doubles
7. There should be one referee, one umpire, one scorer and two or four line judge in badminton game.

Skills of badminton: Badminton skills are divided into four. They are-

(i) Grip, (ii) Footwork, (iii) Service, (IV) Stroke and smashing

1. Grip: Player should learn how to grip racket, which is essential for every player. In gripping wrist player important role. There is a difference of griping while taking forehand and back hand short. So, grips are divided into two types. They are (a) forehand grip and (b) back hand grip.

a. Fore hand grip: A right handed player, plays all short of his right side with fore hand grip. A player holds the racket with thumb and index finger in such a way it looks like an English letter 'v'.

b. Back hand grip: A right handed player plays all the shorts of his left side with back hand grips in this grip thumb will place on handle diagonally. Last part of the handle of the racket will be held with palm.

2. Foot work: Good foot work is necessary to take quick stroke. A player's foot work has to be good to take stroke forward back ward, side wise, with jump and run. A right handed player have to stand with flex left foot a head and right foot a bit back and knees a little flex to receive a service or to do a service. At this time the body weight of the player rests on toes. Feet are kept at a distance of 14"-18" This position of a badminton player is called stance. A part form this player can pivot his one leg and move around the other to perform foot work.

3. Service: A good player should know three types of service. They are (a) High deep service, (b) Low service, (c) Drive service.

a) High deep service: When a service falls near the base line of opponent court from very high it is called high deep service.

b) Low service: When shuttle travel very low to the near short service line of opponent court is known as low service. That time rackets hold with fight hand grip.

c) Drive service: If shuttle travel low and fast right back to the receiver, shuttle usually hit hard so it is known drive service.

4. Stroke or smashing: The skills of stroking or hitting skills are divided in six types they are-

a) Fore hand stroke: The right handed players keeping left leg and left shoulder towards net and will hit the shuttle from right side. Their body weight will not or right leg while taking racked back. After hitting the shuttle body weight will be shifted from right leg to left leg.

b) Back-hand shot: The right handed players will hit the shuttle from left side. For this play will keep his right shoulder and leg towards net.

c) Over head shot: Firstly keeping left foot a bit forward and body weight will be on right leg. The players usually hit the shuttle bending their upper part a little backward keeping eye on shuttle and pulling racket from back to play a over head shot.

d) Drop shot: The technique of a drop shot is that the shuttle will drop in other court crossing the net very narrowly.

e) Under hand drop shot: Swing the racket during service after touches the shuttle control the speed of racket.

f) Smashing: Smashing is basically an over head shot. In overhead shot position swinging the hand with racket from back to upward a player hit hard shuttle downward. It is called smashing.

Task-1: Draw a Badminton court and display in the class room.

Task-2: Practice technique of different grips as per instruction of the teacher.

Task-3: The class will be divided into two groups. One group will tell the faults of service and the other group will correct them where necessary.

LESSON-4 : Volleyball: Volley is a team game people at all ages can play volleyball in open space or in Gymnasium. This enjoyable game was originated in the United States of America. William G. Morgan, director of physical Education department at YMCA college Holly wood, USA, first invented volleyball game is 1895. The teachers of physical education department at spring field college, USA, considering its similarity with "volley" named it volleyball is 1896. In 1997 YMCA First formulated and published volleyball rules. In 20th April 1947, Mr. Paul Lebort has taken the initiative to form an international volleyball federation. After independent in 1972 volleyball federation was formed in Bangladesh.

a) Rules and regulation of volleyball:-

1. Playing court: Volley field is a rectangular whose length and width is 18 meters x 9 meters respectively. There will not be any obstacles up to 7 meters above the floor.

2. Boundary line: The boundary lines they are of court have to identify with the lines of width 5 cm known as boundary line. 2 meters away from boundary line are to be free from any obstacles.

3. Centre line: Adding middle point of length of the court known centre line which divide the court into two courts.

4. Attack area: There are two parallel lines 3 meters away from center line prepare an area of 9x3 meters. This is known as attack area.

5. Service area: The area behind and back line known as service area. Both side lines are extended both sides, 20 cm away and 15 cm extended line are known as service area.

6. Temperature: If it is indoor court so temperature will be not less than 10° C or 50° F.

b) Net:

1. Measurement and structure: Length of the net 9.5 m and width one (1) meter. Each square of the net will be 100x100 cm. There will be a white canvas tape of 5 cm on top of the net. A wire or string is to the tape will fix both sides of net with the pole.

2. Height of net: The height of net from the floor, at the middle is 2.43 m for male and 2.24 m for female.

3. Side marker and antenna: From the point where side line and center line meet together, a tape with 5 cm width will be hanging which may be moved when necessary. There are two antennas of 1.80 m in length and 10 mm in diameter made of fiber glass or similar metal hanging or that tape and tied from both sides with net.

C. Ball, players, and equipments of players

1. The ball: The ball will be made of soft leather and round, shaped and there is a soft bladder in side. Radius of the ball will be 65 cm to 67 cm and weight will be 260 to 280 grams.

2. The players: A volley ball team consists of 12 players. One member of the team will appoint as a captain. There is 8x2 cm badge on left side of the chest of captain.

3. Dress and equipments of players: Jersey, shorts and light and flexible shoe without heel are the dress of a player. Colour of all players of a team will be same except libaro. There will be jersey number on chest and back of different colour.

4. Position of players: There are six players will take position in the court, of the 3 players in the attacking area and other 3 are back court player. At time of beginning of the set information regarding player's position and rotation should be given to umpire so that they can maintain the same rotation until set or game is over, but order of rotation may be changed at the beginning of set.

d. Play

1. Preparation of game and toss: Referee will toss a coin in presence of both captains before entering the court, and winning captain will chose service or court. There in 3 minutes time for warm-up for both teams. Substitute players and coach will sit on specified place opposite to referee.

2. Rotation: In volley ball players will maintain rotation clock wise. Rotation will take place after opponent loses service. Referee will take necessary measures to punish the team in regard to faulty rotation.

3. Time out: With request of captain on coach referee can grant time-out when ball is out of play or dead. Every team will get time-out twice and can change 6 player can take temporary interval in that substitution in one set. During time out player can come closer to the side line and cannot go outside the court.

4. Substitution: Six players play in court and substitute six players and coach will sit in specified place. With the request of coach or captain these additional players may be substituted court players.

5. Officiating: One referee, one umpire, one scorer and two lines judge control the game. Referees decision is final from beginning to end of the game. Referee sits any site of net a high place at least 50 cm above the net height so he can see all places of the court.

6. Court change: After end of each set, players will change the court except final set. In final set, any team scores 13 points then both team changes court.

7. Results of game: A team is serving, at the end of the rely if serving team wins than team will get one point and if serving team loses, opponent team will get point and

service. In this way if a team scores 25 point will won the set and point difference at least 2. If the points of both team is equal than game will continue until the difference in 2 points. But the team first reach the point 30 will get the set. The competition is of 5 set. If a team won 3 set out of 5 set, that team will be declared winner in the competition.

8. Service: The player of extreme right of will serve according to rotation. The player will stand in the serving area after referees signal serving player will toss and hit the ball to sent opponent court. If ball crosses court under the net, touches antenna, if out goes side of opponent court which is known as fault service and opponent will get service.

9. Playing the ball: After service each team will get three chances to play the ball with in this three touch a team has to pass the ball to opponent court. If ball touches any part of player's body it will considered as one touch. Show motion pull, push is called holding the ball which is not allowed.

10. Block: To protect smash of opponent player is known, one or more player of attacking are raise their hand to block smash of opponent team. The player of back court cannot participate in block.

11. Ball on net: The ball can touch net while crossing the net. During service net touch also allowed player of back court cannot smash the ball.

12. Crossing the centre line: The players or any part of players can not cross the centre line and cannot touch opponent's court on.

Technique of playing volley ball

a. Service: Tossing the ball with one hand and hitting ball by other hand, hand may be opened or closed, send the ball to opponent court is known as service, If service do not pass under the net, do not touch net, do not go out of the opponent court than service is considered correct service.

Generally service is two types. They are (1) Under hand service (ii) Tennis service

1. Under hand service: The player stand facing the opponent court in side service area for right hander left foot forward putting body weight on rear (back) leg, knee will be bend forward, and heel of right on floor, front will be up ward (according to fig) keeping the ball on left hand and tossing the ball in air upward and hits both force fully with right hand. So that ball can travel to opponent court. While hitting the ball right hand may be closed or open.



Under hand service

2. Tennis service: The player stands in service area if right handed player left foot one step forward and body weight on both legs. Tossing the ball high above head height a little bit forward and hits the ball with right hand to send the ball of opponent court. After hitting ball right leg will come forward as a follow through.



Tennis service

a. Position of rotation: There are six players and if number of the players is 1 to 6 than three players will stand front court and other three will be in back court. Position of player are show in the picture front court 3 players will stand as player no-2 will be on right side of the front court player no-3 will stand in the middle position and 4 will be on left position. The position of backcourt player no-5 will be in left 6 players no -6 in the middle and player no-1 will be a right.

5	4
6	3
1	2

Rotation

If opponent lose service than rotation will be take place. Player no-1 will be in the position of player no-6 and so on every player will charge his position.

C. Passing: Generally passing is two types.

- (1) Upper hand pass. (ii) Under hand pass.

Overhead volley pass: The hand should be directly over the head with the arms flexed, elbows to the front. It is not possible to use the normal wrist rotation to play the ball, so most of the power for the volley must come from the arms and legs. The arm smoothly extended over the head as the ball is played.



Ball passing

d. Set-up: The volley pass (upper hand pass) that for a front line player to smash across the net, is called the set-up pass, it said that attacking strength dependent on its ability to place these set-up accurately.



Smashing

e) Smashing: The ball for smashing must to above net height. Smashed will take place 3-4 steps behind the ball from where ball will be hilted. From that position masher will run 3-4 stop and jump up and will take the body behind the ball. One will bend both hands so that can jump high. Smashing hand will be swing from back can hit forcefully, player will land on both leg straight down ward. Some time to misguide the opponent push the ball other side in spite of smashing.



Blocking

f. Blocking: To form block, front line players of defending loam jump vertically opposite the smasher and place a wall of hand in the path of the ball. Hoping to deflect the ball into his court. At the time of block players jumps on both legs, point to kept in mind that during block do not touch the net.

Task-1: Draw diagram of system of rotation.

Task-2: Show the technique of tennis service.

Task-3: Student will show the techniques of block.

Lesson 5: Kabadi: Kabadi is a traditional and popular game in Asia continent. Especially is a ancient game of indo-pak sub-continent. In this subcontinent, it is played in different areas in different name of this sub-continent. There are no set rules for this game as it is regional game. In villages, the hadudu game is the only source of enjoyment. The traditional game of Bangladesh hadudu is known as Kabadi. After independence to bring moments in games in Bangladesh different federation are reformed. Same way in 1973 kabaddi federation was formed. With the assistance of Kabadi federation, kabaddi was included in the SAF games in 1984 in Dhaka. From that time Kabadi games start in the international sports field. In 1990 kabaddi games included as regular games in Beijing Asian games. We shall hope that, this game will be included in the commonwealth and Olympic game very soon.

Kabadi: Field will be rectangular and soft, will prepared by mat or mud. There are three kinds of Kabaddi, such as-

1. Male and Junior boys
2. Ladies and Junior girls
3. Sub-Junior boys and girl.

1. Males means whose body weight 80kg or below. Junior body means body weight will be 65 kg or below and their age not above 20 years. For them field measurement is length-13 meter width-10 meter.
2. Ladies means body weight of them 70 kg not above 20 years or, their age body weight not exceeding 60 kg. Field form width 8 meter.
3. Sub-junior boys and girls age for them not move then 16 years and weight is 50 kg or below. Field for them is length 11 meter and width 8 meter.

Playing area (Court): Before straggle, male and junior boys both side without lobby. Length 13 meters x width 8 meters. Ladies and junior girls field will be length 12 mete x width 6 meter and sub junior boys and girls field is length 11 meter x width 6 meter.

Sitting blocks: Dead players are sitting on restricted area known as sitting blocks. For male and female this blocking area at a distance of 2 meter form the end line, 1.8 and 1.1 meter away from end line there will be two more blocking area 1.8 meter and 1.6 meter from the end line for ladies and junior girls respectively.

Lobby: The space of both side of court with one meter width is known as lobby. Lobby will be inside the field if it is straggle.

Mid line: The line which divide the court into two court is known as mid line.

Court: Each half of the field which is divided by the mid line is called court.

Balk line: A line parallel to the mid line inside the field is known balk line. Distance from the mid line is 3.75 for male and junior boys, ladies and junior girls the distance 3 meter and for sub-junior body and girls the distance is 3 meter.

Bonus line: A line parallel to the balk line and 1 meter toward end line is called bonus line.

Holding the breath: A player holds his breath and start saying rapidly clearly, and loudly "Kabadi-Kabadi" is known as holding breath.

Raider: A player hold his breath and send into the opponents court is known as raider. Raider has to hold breath before entering into the opponents court.

Anti raider: The entire players opponent to the raider are called ant raider.

Breath lost: If a raider do not uttered “Kabadi Kabadi” rapidly clearly and loudly or he is not holding breath than it will be considered he lost his breath.

Touch or kill anti raider: If a raider without breaking any rules or without violation of rules, touches ant raider’s any part of the body and he come back to his own court anti raider will be considered out (kill).

Catch raider: If ant raider catch a raider without violation of rules, until the referees whistle than it is considered raider out (kill).

Touch: If raider touches dress of anti raider it will be considered as he touched the anti.

Straggle: When anti or antis come contact with raider it is called straggle. During straggle lobby also considered as court.

Playing rules

1. Wining captain will chose raid/court, other captain will take rest one the player will change court is the second half. If a team takes raid at the beginning of the game, in the second half next or other team will get chance to start the game with raid.
2. If any part of player touches the outside the boundary line he will be considered as deal.
3. a) During game if any player is out of the boundary line he will be out. Umpire/referee will call his name, that player will be out of the court. Referee will not the whistle and raid will be continuing that means game will not stop.
b) During raid if anti or antes goes outside the boundary line and catch the raider, than raider will not be out.
4. At the time of straggle lobby will be part of field. During straggle or after straggle the player who are involve in straggle they can return to their court using the lobby.
5. Raider hold breath with saying Kabadi, if raider do not uttered Kabadi correctly then referee will call back him and opponent will get one technical point.
6. Raider will hold the breath before touching the opponent court. If he hold breath late or after/umpire will call back him and opponent will get one technical point raider also get chance to raid again.
7. If raider starts raiding and enters into the opponent court without having his turn, Referee will ball back him and opponent will get one technical point.

Rules for competition

1. **Team.** There are at least 10 players and at best 12 players consists a Kabadi team. Seven will play in the field other will be the substitute player.
2. **Duration of play:** For male and junior boys, each half of 20 minutes and 5 minutes interval. For female of junior girls and sub junior boys and girls each half of 15 minutes

and 5 min interval. The player will change the Court after interval. In the second half, number of player will be unchanged, same number and same player will be on court.

3. Point counting: For each dead player opponent team will get one point and all player of a team dead other team will get one and additional two points.

4. Time out: a) each team will get time out twice in each half. The duration of time out will be 30 second. The captain, coach, trainer, or any player of a team can take time-out with permission of referee time-out time will be added with the duration of game time.

b) The player cannot leave the court during time out. Violation of this rules other team opponent will get one technical point.

c) Reason of official time out is as follows- i) if a player injured

ii) Field marking again

iii) If outside interrupt the game and similar inside referee/umpire will declare of final time out. This time also odd with the duration of game time.

5. Substitute

a) With permission of referee additional five players can be changed during time out or in the interval.

b) Substitute can play again skills of the Kabadi game in there are two types of skills in Kabadi game. They are (i) Defensive skills and (ii) Offensive skills.

1. Defensive skills: Anti raider of raid is going on player of that court adapts a technique in known as defensive skills. For example-

a) Catch the heel

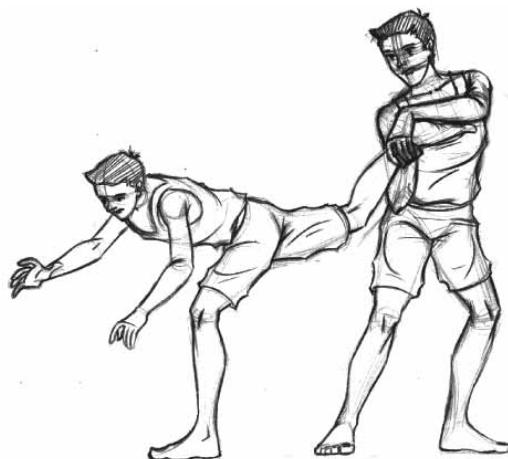
b) Catch the knee

c) Hold the waist

d) Catch the wrist

e) Catch with chair etc

a. Catch the heel: Generally opponent applies thin technique when a raider tries to touch anti-raider. The player of left side use this technique standing left leg ahead catching legs with right hand casually feet of the raider. They put their left leg ahead and catch the feet simultaneously. After catching heel, leg pull up to chest and pull his own body.



Catch the heel

b. Catching knee: The players apply this technique when a raider tries to touch with legs or legs become stable after movement of when both legs together. Left side player keep the left leg ahead and right side player keep their right hand ahead also keeping their left hand will be down and right hand above the knee and hold with both hand and shoulder together.

c. Catching (Holding) waist: Anti raider use this technique when a raider stand showing back to the opponent after holding waist lift a bit high that means above the floor.

d) To catch wrist: When a raider touch with hand or hands are stable then opponent catches the wrist.

e) Catch with chain: Catch with chain is very effective. Most of the trainer gives very high emphasis on to catch with chain.

2. Attacking skills: A raider applies some skill to touch opponent when he raid in the opponent court all this skills are known as attacking skills. For example touch with leg touch with hand touch with take.

a. Touch with leg: When a raider try to touch opponent with hand is called touch with leg. There are different technique uses to touch with leg.

b. Touch with hand: When raider try to touch opponent with hand. There are different techniques to touch with hand. They are from top to down wards, bottom to up from front to side and from side to front etc. Generally raider use hand to touch opponent's nose, ear, and head body of upper part of the body.

c. Tack and touch: When a raider give take the opponent and try to touch is known as take and touch. This technique is very effective most of the raider try to touch opponent than apply this technique.

Officials: There are 6 officials to control Kabadi game.

1. One referee. 2. Two umpire, 3. One scorer 4. Two assistant scorers,

Referee: Referee is all in all in the field he will start and finish the games. If there is any difference of opinion he will take the decision.

Umpire: A umpire who maneuver the game

Scorer: Scorer will write scores declared by the umpire.

Assistant scorer: Assistant scorer will assist dead player to sit in the proper place and will help them to enter into court according to rules.

Serious violation of rules and fouls: If a player commit following fouls referee on umpire can give a caution give point to opponent temporary execution or not illegible.

1. To provoke to take decision
2. Criticism regarding decision.
3. To raise finger to take a decision in favor.
4. To hold or press mouth or through to stop breath.

5. Play dangerously so that opponent may injure.
6. To take more than 5 second to start a raid.
7. To catch a player with both leg like casers.
8. Trainer of player train outside the field.
9. To obstruct a raider from raider.

Bonus point: If a raider crosses the bonus line than raider team will get one bonus point. But at least 6 players remain in the court.

LESSON-6 : Basketball: Basketball first started at Massachusetts in America in 1881. Dr. James A. Naismith Director, department of physical education of spring field YMCA college of America first introduces this game. At the initial stage 10/15 players use to take part in the game. In 1994, Basket ball was first played by five players. Basket ball first started in Bangladesh by the Christian missionary school. Such as sent Gregory's school, sent Josef school of Dhaka and sent placid school of Chittagong. Endurance is required to play this game.

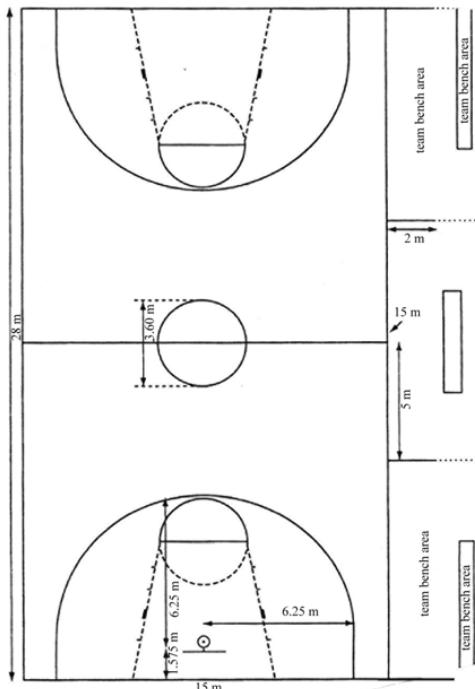
Rules of Basketball

1. Court: Basketball is a rectangular court, floor will be wooden or hard without any obstacles. Measurement of Basketball court for National and regional level, length will be 26 meter and width 14 meter. For international competition length will be 28 meter and width 15 meter,

2. Circle of court: There are three circles in the court, each of radiiuses 1.80 meters.

3. Restricted area: A circle radius 1.80 meter playing area both side playing area 5.80 meter away from the end line. A circle with 1.80 meter radius towards playing area 5.80 meter away from the midpoint of end line and two marks on both side of end line from the midpoint of end line add with the diameter of the circle which is known as restricted area.

4. Ring: Height of ring is 3.05 meter and 15 cm apart (away) from board. There is ring on board which is 3.05 meter above the floor and 15 cm apart (away) from board, radius of ring is 45 cm. There will be 40 cm. long net with the ring.



Basketball court

5. Ball: Ball will be round (spherical) shaped and whose weight from 567 gram to 650 grams circumference is 75-78 cm. There will be 8 panel on ball and orange in colour. Ball will rough so that will be easy to grip.

6. Playing time: Total time is 40 minutes which is divided in four quarters of 10 minutes. There is interval of two minutes between first and second quarter, third and fourth quarter. There is 15 minutes interval of the game.

7. Point: If teams score a basket outside the 6.25 meter marked line will get 3 points and if inside 6.25 meter line will get 2 points.

8. Start of game: Through toss court will be selected. Two players will stand inside the centre circle. The game will start of throwing the ball in the air.

9. 3 seconds rules: If a team in attacking position any player of that team cannot stay inside the restricted area.

10. 5 Seconds rules

- a) A team has to take throw with 5 seconds after referee's whistle.
- b) A player cannot hold ball more than 5 second.
- c) A player has to dribble or pass within 5 second after catching ball.

11. 8 Seconds rule: A team can control a ball 8 second in his own court. Team has to go to opponent court within 8 second.

12. 24 Seconds rule: All player of team can keep control on ball up to 24 seconds.

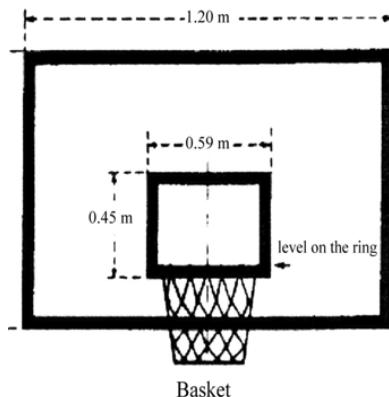
13. Violation: Violation as any rules such as at the time of personal fouls does not raise his hand, 3, 5, 8 seconds rules.

14. Technical fouls: A player is not respectful to officials and intentionally disobeys rules and show unsportsman like conduct.

15. Personal fouls: A player does an illegal physical contact with opponent if ball is dead.

16. Personal fouls: A player commits a foul intentionally with opponent is known as personal foul.

17. Double foul: One player as both teams commit mistake or foul each other at same time is known as double foul.



18. Five foul: A player commits five foul with in 40 minutes duration, may be personal or technical, he will have to leave the court.

19. Seven foul: Team foul of a team in each half is seven or more, that foul may be personal or technical. For each foul opponent will get 2 (two) free throw. If duration game is 4x10 minutes then four personal or technical foul in each quarter, after that for every foul opponent will get 2 (two) free throw.

20. Technique: A good basketball player requires endurance, agility, speed, and jumping ability. Simultaneously they require expertise on the following basic skills.

1. Stance: Both feet apart from each other of comfortable distance generally distance of shoulder width and body weight on both legs. Knee little flex, upper limb little incline forward, both hands near to chest a bit above the chest height palm facing opponent, and elbow also down ward.

2. Catch the ball: A player has to catch the ball in such away so that ball should be under his control. Fingers are spread, flex and abit round shaped, during claiming ball thumb usually control the ball. Catching ball with palm is not correct technique.

3. Pass: In basketball during passing wrist and elbow are more active than other part of the body. While giving pass a foot is ahead other (rear) leg abit back. There many type of pass in basketball some of them are given below.

a. **Chest pass:** Pass fast at chest height.

b. **Pass below the head height:** This type of pass is used when player are close and give pass very fast.

c. **Hook pass:** This type of pass is use to give a pass over the opponent heat and away from opponent. Generally this is pass is given using one hand.

d. **Bounce pass:** A pass is given to a team-mate giving a drop or bounce or ground.

e. **Pass above head:** When opponent is close than a pass is given to team mate above the head height.

4. Dribbling: Dribbling is used to change the place and to go forward. Generally dribbling is done by one hand or one by one hand and ratio of left and right hand would be 2:1 not 1:1, pressing or pushing the ball with finger pals palm, down ward again and again that means dropping or bouncing the ball to the ground again and again.

5. Pivot: A player fix his one and move the other leg in any direction as many times as he wish is known as pivot.

6. Shooting: Throwing a ball to score a basket is known as shorting. Shooting are two types (i) directly into ring. (ii) With help of board.

a. **Set shoot:** Shooting while standing that means without movement is known as set shoot. A set shoot can be taken by one hand or both hand. While shooting by one hand shoots taking hand behind the ball and other used as to support the ball so the ball can travel to basket accurately. Again when shooting with two hands, both hands are behind the ball.

7. Layup shot: Generally to score a basket close to the basket this type of shoot is used. During taking this type of short player usually dribble the ball to go close to basket and generally right handed player last step on left foot forcefully down ward and jump in the air catch the ball with both hand score a basket.

Task-1: Show the technique to grip a ball.

Task-2: Show or demonstrate a chest pass with partner.

Task-3: Practice the technique of lay-up shoot.

LESSON-7: Hockey: Though there is no concrete evidence about its origin, it is believed that it descended from the earliest civilization and one of the ancient game. As per knowledge goes in 2000B.C there was a game like hockey, in French. After wards it introduced in Greece and from Greece to Rome. About 2500 years back historian seen/observed a similar game likes to-days hockey in east Greece. After wards the people of France started the game named hocket. Hocket is a French word which means stick of shepherd. After many years the English people started the game named as Hoque after learning for French. According to English pronunciation Hockey spread all over the world.

1. **Team:** A Hockey team consists of 16 players, 11 players play the game other 5 players are additional or substitute players.
2. **Attack:** During play a team tries to score a goal is called attacking team.
3. **Defensive team:** During play a team engages in not to conceive a goal is known as defensive team.
4. **Centre pass:** Putting the ball at the centre of the field, pushing or hitting in any direction is called centre pass. Game begins with this pass.
5. **Playing the ball:** Playing the ball means to stop, go forward, change the direction or speed up the ball
6. **Playing distance:** A distance from where a player can reach and can play the ball.
7. **Tackle:** To take control of ball from opponent. The techniques by which a player takes control of ball from opponents are known a tackle.
8. **To hit a ball into goal:** A attacking player try to hitting the ball towards goal post from inside the circle.
9. **Fouls:** A player does not follow the rules or disobey the rules for which an umpire can punish the player.
10. **Stroke:** To play the ball with the stick to go forward hit the ball in stroke.
11. **Penalty stroke:** Try to score a goal from penalty spot by the push or scoop is called penalty.
12. **Dangerous play:** A technique to play the ball which is dangerous for the opponent.
13. **Misconduct:** Misconduct are as follows-waste time, intentionally commits a foul, during play misbehave with others, disobey the captain.

Playing area: Hockey field is rectangular, which lengthy-100 yard width 60 yard (55 meter), length line is called sideline, width line in called end line and in between two goal post is know a goal line. Width of the line 75 mm (3inch)

Shooting Circle: A half circle of radiuses 14.63 meter (16 year) both side of the post. Middle 4 meter is parallel to the goal post is known as shooting circle. 5 meter away and clues side as the shooting circle another circle will be drawn, which line will be dotted. A line is use to stand the player.

Midline and 23 meter line: A line joining the two midpoint of length line is called midline. A line behind the mid line which is known as 23 meter line.

Goal Post: Distance between inner side two post will be 3.66 meter, height of lower side of cross bar from floor will be 2.14 meter. Colour of goal post and crossbar will be white.

Ball: Ball will be made of hard material. Weight will be 156 grams to 163 grams. Circumference of ball 224 mm to 235mm, colour of ball will be white. A different colour of ball may be used with agreement of both teams.

Hockey stick: Stick will be straight and head will curve. Left side of the stick will be flat and right side will be smooth and round shaped. Curve of the stick will not be more than 100 mm. 51 mm diameter ring passes through the head of stick is considered correct stick.

Goal keeper: Goal keeper is a different colour dress and to protect upper part goal keeper will use protector. Goal keeper can use leg guard, kicker and hand protector.

Duration of play: 35 minutes of each half and 5 to 10 minute interval.

Penalty corner: Any player of defending learn intentionally do or commits a foul, do a foul unintentionally to serve a goal inside circle or goal keeper do a mistake again and again then referee can award a penalty to opponent team 6.60 meter away from goal line inside the field, a penalty shoot is taken.

Skills

Hold a stick: A right hand player holds the top of the stick with left hand, and will hold middle of the stick with right hand. Right leg ahead and left leg will be at back. A player will move the stick left and right with left hand right hand will support the stick.

Stop the ball: To stop the ball head of the stick will be lined up with the ball and ball will be stopped by flat part of stick. One leg will be ahead and other one will be at back.

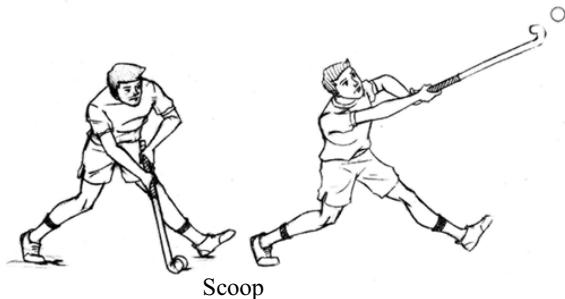
Dribbling the ball: Ball will be in front of a player to move the ball forward with the help of stick by moving left and right. A player can dribble the ball by pushing the ball in between. Ball will be played with the flat part of the stick.

Hit: A player constant as both the legs are parallel and 1½ to 2 feet away from ball, lifting the stick up to shoulder level and hit middle part of the ball. Hitting hard the ball is called hit.

Push: Push ball with the flat part of the stick without sound means ball will be in contact with stick without sound means ball will be in contact with stick.

Flick: When a ball is pushed it is stable or in motion and if ball rises up to knee height is called flick.

Scoop: A player pushes a lower part of a stable ball to travel in the air above head height is called scoop.



Task-1: Show the technique taking penalty stroke.

Task-2: Demonstrate the technique of scoop and show to the class mate.

Task-3: Explain the technique to hold hokey stick

LESSON- 8: Handball: Handball game has its origin in Germany. In the German lyrics dating back to 12th-13th century, there had been some illustrations on CATCH BALL, in 1904 one Mr. Holger nelson, of denmark who was by profession a teacher invented this game. In 1917 Max Husser of Berlin and demonstration of women's games invented hand ball game for women. In 1919, another games instructor is kajl shillenge of Berlion added his own technique and tactics to this game and developed the various mechanism of this game. He is the person who gradually popularized this game throughout the world. The Hand Ball Association of Bangladesh came into being in the year 1983 and later on in 1985, it turned into a federation.

1. The playing area of Hand ball: The field of Hand ball game is 40 m long and 20 m wide. The marks/signposts are 5 cm Thick. The line inside the goal post is 8 cm. The sign post of length is called sideline while sign post on the width is called end line.

2. Goal post: Height of the goal post from the floor to lower part of crossbar is 2 meter and length is 3 meter.

3. Goal area: A line is to be drawn with a radius of 6 m which would be equi distant from both the goal posts. A 3 meter straight line will be drawn parallel to goal post the dos will be 15 cm in length. Goal post- The length of goal post would be 3 m and the height will be 2 m margin from the ground up to the crossbar.

Two quarter circle of 6 meter radius from inner corner of the both goal post, from both side of the end line to in front of goal post and rest part (3 meter) of the circle will be parallel to the goal line, the commentate half circle is known as goal area.

4. Free throw line: Similar to the goal area line two quarter circle of 9 meter radius of both goal post, and from goal line to in front of goal post and rest 3 meter will be parallel to the goal line a doted half circle known as free throw line.

5. Penalty line: A 15 cm line 7 meter away from goal line and parallel to the goal line is know a penalty throw line.

6. 4 meter line: A 15 cm line 4 meter away from goal line and parallel to the goal line is called 4 meter line.

7. Duration of play: Duration of play for boys and girls of 16 years and above is $30+10+30=70$ minutes and fro 12-16 years boys and girls duration of play is $25+10+25=60$ minutes. For 8-12 years boys and girls $20+10+20=50$ minutes.

8. Officials: Officials are 4. There are 2 referee, one person time keeper and one score taker.

9. Ball: The ball must be produced by lather or a synthetic material. It must be spherical. The surface must not be shiny on slippery. Weight and circumference of ball will as follows for different group. For boys above 16 years, circumference 58-60 cm weight- 425-475 grams. For, girls above 16 years and boys of 12-16 years, circumference 54-56 cm and weight 325-400 gram.

10. The players: A team consists of 12 players (10 court player + 2 goalkeeper). No more than 7 players (6 court player + 1 goal keeper) on the court. The remaining players are substitutes.

11. Restrictions for goal keeper:

- a) Play dangerously
- b) Leave the goal area with ball
- c) Taking the ball in to the goal is when it is outside the goal area.
- d) Touch or cross the goal keepers border line (4 meter line) before the ball has left the throwers hand when a penalty throw is being taken.
- e) Intentionally play the ball over his own outer goal line once he has got the ball under control.

12. A player is not permitted:

- a. Cannot hold the ball more than 3 second.
- b. Cannot move more than 3 steps without dribbling.
- c. Cannot pull, push or hit opponent while catching the ball.
- d. Cannot touch ball by below the knee.

13. Throw-off: The game begins with throw off and other scoring a goal play also starts with throw-off.

14. A free throw is awarded in the case of

- a. Incorrect substitution
- b. Illegal entry inside the field.
- c. Infringements by the goal keepers
- d. Infringements by court player in the goal area.
- e. Deliberately playing the ball across the outer goal line or side line.
- f. Fouls concerning the approach to opponent.
- g. Infringements in connection with throw-off and throw in.
- h. Assault in and of field.

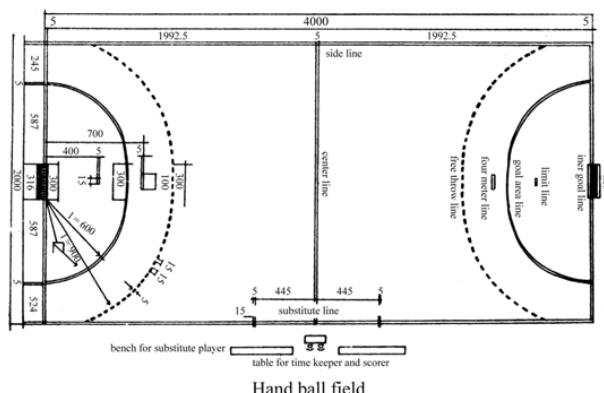
15. Penalty throws

A penalty throw shall be awarded:

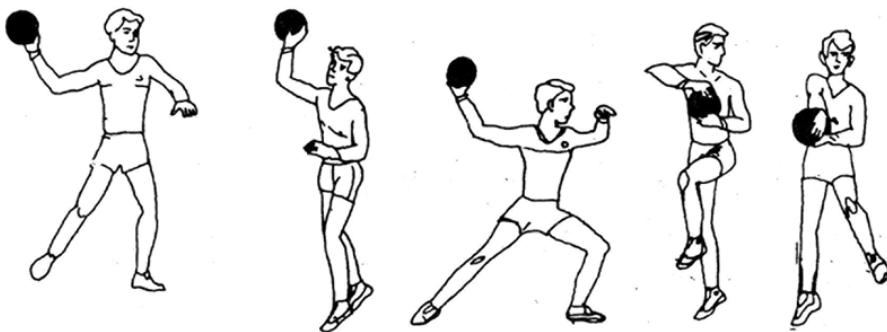
- When a clear chance of scoring is spoil by an infringement in any part of the court even when committed by official.
- When a court player intentionally plays the ball to his-own goal-keep in the goal area.
- If spoil a clear chance of scoring by an illegal whistle.

Skills: The basic skills of hand balls are as follows.

- Catch the ball.
- Passing the ball.
- Shooting or goal.
- Obstruct an opponent.



- To catch the ball:** Fingers are well spread wrist palm finger are flex and fennel shaped eyes always on the ball, both legs are apart of shoulder width, elbows are pointed down ward palm facing the ball and after catching the ball take close to chest. According to the position of ball such as side wise above head height, below the knee and rolling ball can be caught changing the body position of a player.
- Pass:** Passing the ball is important technique in handball. There are many type of passing technique are in hand ball.
 - Shoulder level pass.
 - Wrist pass.
 - Below the waist pass
 - Above the head etc.



Pass

3. Shots on goal: Scoring a goal in hand ball is very important so that throw on goal for a score also important skill. To score a goal outside 6 meter or 9 meter is difficult. So play should know the technique how to throw a ball on goal. There are different types of technique are there such as throw directly on goal, jump and throw, bounce on goal area to score a goal etc.



4. Obstruction: When under control of opponent players obstruct an opponent with arms hand or legs and pull push an opponent are not permitted. A player can obstruct an opponent if he is not in position of the ball. Player can obstruct by make a wall with the help of two or more player in front of goal.

Task-1: Write on poster paper the causes of awarding a free throw and present in the class.

Task-2: Demonstrate the technique to catch the ball.

Task-3: Explain position of body while throw on goal.

Exercise

1. Put tick mark (v) on the correct answer

How many type of free kick in football?

- a. One b. Two c. Three d. Four

1.2. Position of wicket keeper at the time of spin bowling.

- a. Close to wicket b. Far away c. Right side of the wicket. d. Left side of the wicket.

1.3. For lona a team will get how many points

- a. One point b. Two points c. 3 Points d. Four points.

1.4. Length and width of hand ball field.

- a. 30x40 meter b. 40x20 meter. c. 35x15 meter d. 230x20 meter

1.5. What radius of shooting circle in hockey.

- a. 10 yard b. 16 yard c. 12 yard d. 18 yard.

2. Fill up with the blanks with appropriate word

a. Height of corner flag at least.....feet.

b. Ball crossing the boundary line in air after a hit by a batsman is.....

c. A bowler do not give chance to score a run in called.....

- d. Length of badminton court is.....
- e. In volley ball tossing a ball high and hit for a service is called.....

3. Match words of left side with the word of right side.

- | | |
|--------------------|---------------|
| a. kick off | a. Kabadi |
| b. Raider | b. Football |
| c. Timed out | c. Hockey |
| d. Late | d. Cricket |
| e. Shooting circle | e. Basketball |
| f. Lay up shot | f. Volleyball |
| g. Rotation | g. Badminton |
| i. Throw off | i. Handball. |

4. Answer in short.

- a. What is stamp out?
- b. What is over throw?
- c. When a bonus point is not awarded.
- d. Length and width of badminton court.
- e. What is antenna of volley ball?
- f. What scoop in hockey?
- g. What is offside in football?
- h. What are not permitted for a handball player?
- i. Measurement of basket ball board.

5. Essay type question.

- a. Explain the causes to award a free throw.
- b. How many kinds of out in cricket for a batsman.
- c. What is violation in Basketball? Explain the reason of violation.
- d. What are the service faults in volleyball? Explain in details.
- e. How you will finish a badminton game in the case of dues.
- f. Explain rules to get a point in Kabadi.
- g. A goal keeper is not permitted in handball, explain.

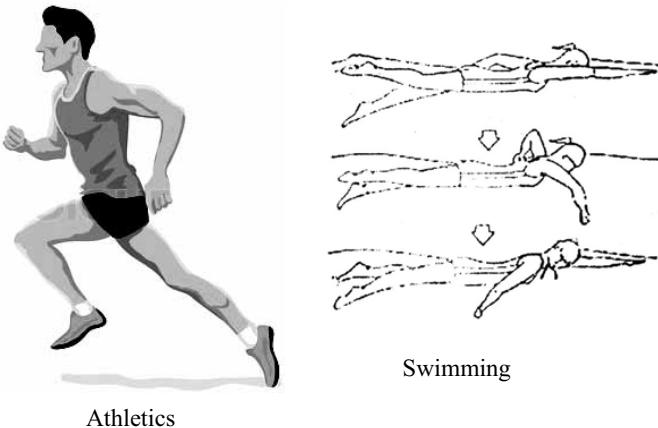
6. Demonstrate in field

- a. How to hold a spin ball.
- b. What are the technique to give a chest pass in basketball.
- c. What are the techniques of heading?
- d. What is the technique to take a free hit?
- e. What is the technique of underhand service in volleyball?
- f. What is the technique to catch leg in kabaddi.
- g. Passing techniques in handball.
- h. Smashing techniques in badminton.

Chapter Nine

Athletics and Swimming

Athletics and swimming are the best way for the exhibition or display of personal sportive feat and skill. Athletics includes but is not limited to events such as running or racing, jumping and throwing etc. In the primitive age, people utilized these feat and skill for survival. At the advent of human evolution and with the advancement of human adaptation to natural calamities, these two techniques were later on considered to be the best personal feat and skill for sports and games. In ancient times, there was hardly any technique or rule for swimming. But at a later stage, swimming was taken as a unique medium or technique for building sound physique and it also later on turned out to be a wonderful instrument for amusement. Athletics and swimming positively impact on building a sound physique, achieving personal sportive feat and skill and being obedient to some given norms and laws and these consequently lead the students towards becoming ideal citizens of the country.



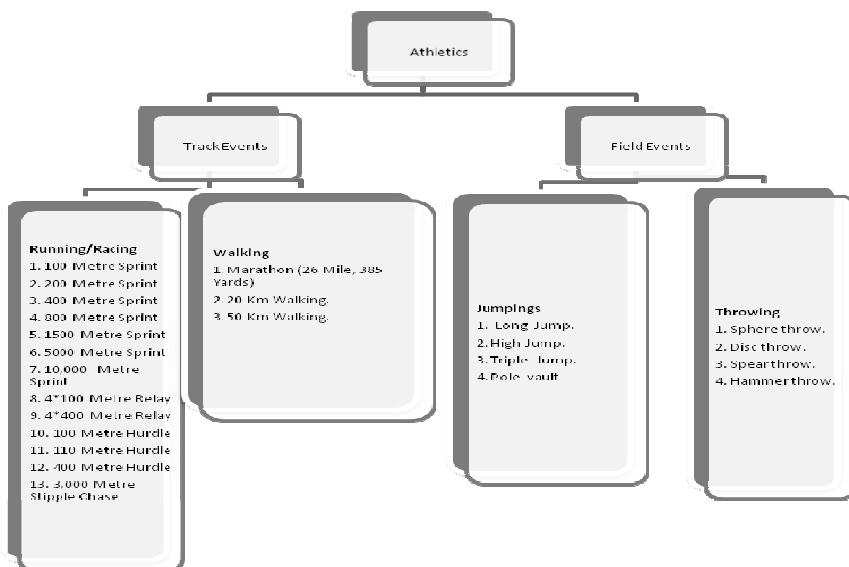
In this chapter, we will be able to

- Explain the various rules of athletics,
- Interpret the various techniques of the tracks and field events of athletics,
- Describe the qualities and qualifications of the athletes pertaining to various events,
- Describe the qualifications and features of swimmers pertaining to different events,
- Explain the rules and regulations of various events of swimming,
- Brief the strategies of various events of swimming,
- Exercise and practice various events according to the governing law of athletics,
- Practice swimming through abiding the law, rules and regulations of swimming.

Lesson-1: The Guiding Rules for the Events of Athletics (Track & Field):

Out of the numerous games throughout the world, running or racing, jumping and throwing are the most remote, primary and vital. A human child after its birth undergoes various stages such as running, jumping and throwing during its makeup phases. In ancient time, people had to run and jump for survival such as for hunting or safeguarding from the attack of animals or saving life from other hazards and dangers. People the then time used throwing or pelting technique to defeat enemies or for hunting animals. These three techniques were thus utilized essentially for their livelihood and survival. With the passage of time, running, jumping and throwing transcended from the survival technique to personal skill development and amusement instruments along with the advancement of civilization.

The events of Athletics are divided into two parts as shown below in the figure:



N.B.- 10,000 meter Run, Hurdle Run, Walking Events, Stipple Chase and Hammer throw are not usually held at Inter School and Madrashah Sports Competition.

General Principles of Running/Racing Competition:

1. A 400 meter Track is the allowable track for the running or racing competition.
2. During Running or Racing Competition, the Athletes would run keeping the 1st Lane in the left.
3. Lane cannot be changed during Sprint i.e. 100 meter, 200 meter, 400 meter, Hurdle Run, 100×4 meter Run and every individual/performer would have to run in the specified lane.

4. During Relay Run of 800 meter, 1500 meter and 4×400, lane can be changed. After going to certain distance, how lane can be changed needs to be well understood before the kicking off the Running or Racing competition.
5. For Sprint, Starting Block needs to be used but in other Running or Racing, Starting Block is not mandatory.
6. During the Run or Race, one should put on the Finishing Stand with the height of 1.4 meter and width of 8 centimeter.
7. Finishing Ribbon must be in touch with the Torso first.
8. The starting and ending point of the Run or Race must be marked with white color.
9. All the Runs do not have the same starting point but always end at the same place or point.
10. Runners must start all Runs at the sound of the fire.
11. During Sprint Run, the Starter must use three instructions:
 - a. On Your Mark.
 - b. Set.
 - c. Fired.
12. If once False Start takes place, the incumbent or the performer will be disallowed or discarded.
13. During Marathon, Set need not be used. Only one needs to run or race after the utterance of the word “On Your Mark” and hearing the sound of the fire.

The Technique of Sprint Run or Race: The run or race with the highest velocity and speed is called Sprint. Any run or race from 100 to 400 meter falls within the purview of Sprint. Start plays a vital role in case of Sprint Run. There is a proverb, “A good beginning is half the battle”. This purely fits in the case of Sprint Run. A good start gives actually additional advantage for Sprint Runners.

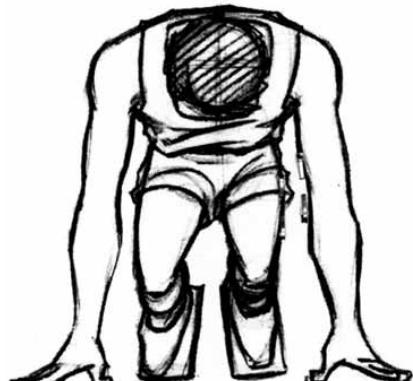
The start of the Sprint Run can be taken into the following three ways:

- 1) Bunch Start.
- 2) Medium Start.
- 3) Elongated Start.

1. Bunch Start: The front leg is kept two steps behind from the starting point and the tip of the hinder leg will be aligned with the hill of the front leg.

2. Medium Start: The front leg will be two steps behind the starting point and the toe of the hinder leg and the strength of the front leg will be aligned.

3. Elongated Start: The front leg will be three steps behind the starting point and the toe of the hinder leg and heel of the front leg will be aligned.



Sprint Run has four phases. These are:

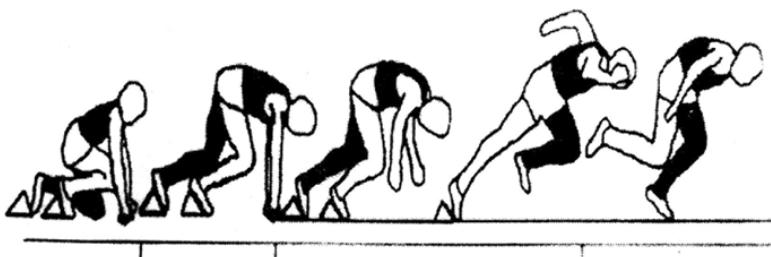
1. On Your Mark.
2. Set.
3. Drive.
4. Acceleration.

1. On Your Mark: As soon as the “On your Mark” is pronounced, the athlete would set their legs 20-25 centimeters behind from the starting point and the fingers of two hands on the starting point upon the ground. If legs are positioned on starting block, that need to be placed earlier or immediately on the specific spot. The vision will be straight forward. The runner would have to sit folding the toe and pressing on the palm of hands.

2. Position before the moment the Run starts: As soon as the starter utters SET, the hinder leg needs to be straightened and bent forward. The heap will rise upward. The whole mass of the body will hinge upon the hands. One needs to be stable and silent while one can hear the sound of the fire within 2-3 seconds

3. Drive: As soon as one hears the sound of the fire, one need not stand rather needs to bend forward.

4. Acceleration: Soon after this, one has to run accelerating the velocity and speed. These four positions are displayed through the following pictures:



Various phases of Starting.

Start Standing: In case of medium and long distance run, it is needed to start from the standing position. As soon as the Starter utters “On Your Mark”, one needs to come to the starting point. Then one needs to start running after hearing the sound of the fire.

Ending of the Running: All runs will end at the same point. The run will be accounted to have been finished when the head and leg will merge on the ending point.

Relay Race: When four competitors or performers run smoothly parallel from a certain distance, this is called Relay Run.

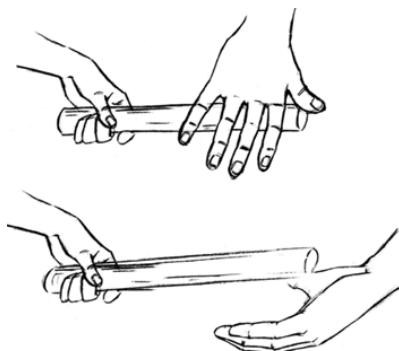
The following rules need to be followed in Relay Run:

1. One needs to run with Baton.
2. Baton needs to be changed at the point marked for Baton exchange.
3. The space for Baton exchange is 20 meter.
4. The length of Baton is 28-30 centimeter, radius 38 cm and weight 50 gms.
5. The Baton is made of wood, metal or similar object.
6. After exchange of Baton, the players would have to be in their respective places until other competitors cross him or her.

Technique of Baton Exchange: The most important thing to remember during Baton exchange is that the velocity or speed does not decrease at any cost. So the technique needs to be revised time and again. The technique of Baton exchange is of two types- 1. To exchange by seeing the Baton, 2. To exchange without seeing the Baton.

1. Exchange by seeing: When one exchanges Baton seeing behind, this exchange is called Exchange by seeing.

2. Exchange without seeing: When Baton is exchanged through speedy run from behind and without looking back, this is called Exchange without seeing.



Baton Exchange

The Technique of Baton Passing: This technique is of two types. These are-1. Upward Pass, 2. Downward Pass.

Upward Pass: When the passing of Baton/stick/staff takes place with the head of Baton/Stick/Staff upward, this is called Upward Pass.

Downward Pass: When the passing of Baton/stick/staff takes place with the head of Baton/Stick/Staff downward, this pass is called to be Downward Pass.

Whether upward or downward is done, the efficiency and efficacy depends on a sound practice and exercise of the players or performers or the competitors.

Task 1: Ask the player to show how the start for Sprint takes place by going physically to the field.

Task 2: Show the techniques of touching the ending point of Run/Race/Sprint in group.

Task-3: Explain the techniques of exchange of Baton by seeing or without seeing.

Lesson-2: Division of Jump: Under this division are included a. Long Jump, b. High Jump, Hop Step and Jump, d. Pole Vault.

The general Principles of Long Jump

1. One has to run through the runway.
2. The length of runway needs to be at least 40 meter, Width 1.22-1.25 meter, and both sides should be marked with white color.
3. The length of Takeoff border should be 1.21-1.22 meter, width 19.8 mm-20.2 mm and height 100 mm.

4. The takeoff will be at a distance of 1-3 meter from the landing.
5. The measurement for the Jump pit would be 10 meter, width 2.75-3 meter.
6. The color of Takeoff board would be white.
7. The jump pit will be filled in with sand but will not rise above takeoff board level.
8. The measurement needs to be taken from and on where the maximum part of the body would touch.
9. A competitor/player would be considered to have been disqualified if he or she -
 - a. Fails to jump within 90 seconds from the name call.
 - b. Jumps out of the Takeoff Board.
 - c. Touches the ground out of the landing area before landing.
 - d. Walks back after completing the jump.
 - e. Performs takeoff with two legs or through somersaulting.
 - f. Touches the ground in front of the takeoff board.

The Technique of Long Jump: Those who are sprinters usually farewell in long jumps. To be an expert long jumper, he or she needs to acquire strength, velocity and speed which usually a sprinter possesses. The techniques of long jump falls under four categories: **1. Approach Run, 2. Takeoff (To rise up giving pressure on ground), 3. Flight (to float on air), 4. Landing (To descend the ground).**

- 1. Approach Run:** For the purpose of jumping, when one comes running with heavy speed from a distance of 50 to 80 feet, this run is called Approach Run. The last approaches need to be very drastic and speedy. A sign is posted at a distance of 15-25 feet from the takeoff board so that legs are stamped accurately. If the legs touch properly this check mark, it can then be reasonably presumed that legs will also touch the takeoff board. An athlete has to work hard to make sure that legs touch the takeoff board properly.
- 2. Takeoff:** In a long jump, there is an arrangement of a takeoff board to enable the jumpers to rise high leaving the ground. This board is 4 feet long, 8 inches wide and 4 inches deep. The surface is colored white. When legs float in the air from this board, it is called takeoff. One who excels in takeoff will cover longer distance.
- 3. Flight:** The time duration between the rise of legs from the takeoff board till they ground is called Flight or floating in the air. To walk, fold toes, heavy jerking of legs and Hitch Kick are the methods for floating in the air. One whose movement in the air is excellent would cover longer distance.
- 4. Landing:** While landing or descending the ground, one needs to keep the legs straight and keep himself or herself at full length forward before touching the ground so that one can cover longer distance. The hills would first touch the sand of the landing pit and soon after that, folding two knees, the whole mass of the body would be passed to the tip of legs and the performer or competitor would fall sliding forward.

Taks -1: Ask the learners to show if he or she can perform the takeoff of the long jump properly.

Taks-2: Ask them to demonstrate if the right position of legs during landing is ensured.

Lesson-3 : High Jump:**Rules of High Jump:**

1. The competitors need to be informed about the height of jump before starting the high jumps and announced how much the Round Height to be increased.
2. After the round being over, the height needs to be raised at least 2 cm.
3. Length of the Runway should be at least 15 meters.
4. A competitor for his or her convenience can use more than one mark or signpost to adjust or fix his or her Run up and Takeoff.
5. The distance between two poles should be 4.04 meter.
6. The crossbar may be made up of wood or metal or similar substances. Length will be 3.98 to 4.02 meter. The diameter of the crossbar would be between 29mm to 31mm.
7. The measurement for landing area for high jump is 5×5 meters.
8. A competitor loses his or her chance when he or she -
 - a) Fails to jump within 90 seconds from the roll call.
 - b) Crosses the line of the crossbar while jumping.
 - c) Performs takeoff with two legs.
 - d) Falls on the crossbar while jumping.

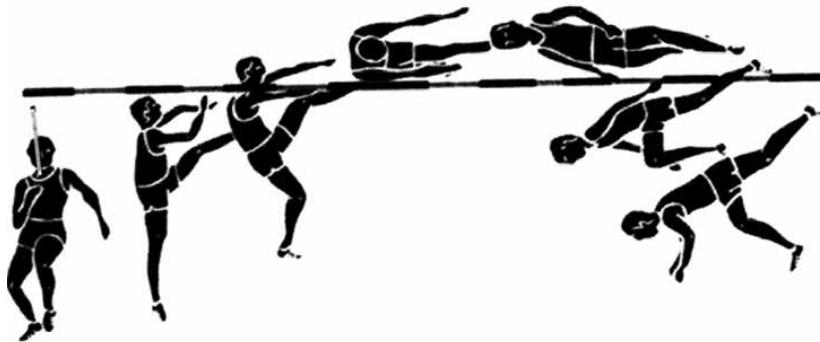
Techniques of High Jump: A competitor has to undergo four stages in high jump whatsoever be the technique of high jump. These techniques are- **1. Approach Run, 2. Takeoff, 3. Crossing the crossbar 4. Landing.**

1. Approach by running is called Approach Run.
2. To get up or fly, keeping the weight on leg after running is called Takeoff.
3. The crossbar has to be crossed by any method for high jump.
4. Falling on the ground after crossing the crossbar is called Landing.

There are three methods of High Jump-

1. Western Roll, 2. Belly Roll, 3. Fosbury Flop.
1. **Western Roll:** The special feature of this method is that the landing will take place with the same leg which has been used for the takeoff. If the takeoff is performed by the left leg, then after crossing the crossbar, landing will also be performed with and on the left leg.
 - a. Jump is usually initiated after seven steps forward but if the height is less, then five steps are adequate.
 - b. For the purpose of jumping, one has to stand at 45° to 60° angles with the crossbar at the time of running.
 - c. At the time of mounting or taking off from the ground, one has notice that the last three steps would be speedy and comparatively longer.
 - d. The hinder leg needs to be thrown very forcibly/sharply upward while the leg upon which the competitor will leave the ground needs to bear the whole weight of the body and the same leg would roll or slide from the hill to the tip of that leg.
 - e. The leg used for leaving the ground would later be folded for rising upward.
 - f. On the crossbar, the whole body needs to be whirled or bent and the shoulder needs to be kept vertically aligned with the obstacle ahead to cross the crossbar.

g. The leg upon which landing will be performed should be used along with two hands at the time of landing.



Western Roll

2. **Belly Roll:** The feature of this method is that the competitor will use one leg for the takeoff while the opposite leg and two hands will be used for landing. If foam is used for landing, according to convenience, landing can be done on the back as well. In this method, one should remember-
- The running angle should be 25^0 to 40^0 with the crossbar.
 - During takeoff, the last steps would be faster and longer. But after leaving the ground, the opposite leg and hand of the concerned side need to be first raised above the crossbar.
 - While nearing crossbar, the upper part of the body needs to be bent or inclined downward. It helps keep the belly part come closer to the crossbar.
 - The upper part of the body (from shoulder to heap) of the corresponding leg and hand which is lowering down needs to be lowered further while pushing the hand forward and inside the body. Then simultaneously the competitor would let the body slide during landing.



Belly Roll

3. Fosbury Flop: In 1968, Mr. Dick Fosbury from America won gold medal in the Mexico Olympic using a new method in High Jump. According to his name, this high jump is named Fosbury Flop. This is treated now as a universal method. But one should keep in mind that jumping in this method is not possible without foamed mat.

- a. In this method, the competitor has to stand at 90^0 angles with the crossbar and he or she has to come closer to the crossbar in a half circular motion.
- b. The middle of the body is jolted and bent while the takeoff of the leg is placed at the epicenter of the body. After that, one has to rise upward with haste and force. At the same time, the other leg is hung and raised towards the right shoulder-line. As a result, the back will be inclined towards the crossbar.
- c. When the body will leave the ground and fling upward, the hands need to be immediately placed parallel with the body and the head; the middle part of the body and the lower part of the heap would have to be crossed upon the crossbar. The hands and legs would be upward facing while the performer would land on the back.



Fosbury Flop

The Tie of Athletics: Tie means equality. When the two competing players have the same result, it is called Tie. Tie is of two types. 1. Tie of height, 2. Tie of distance.

1. **Tie of Height:** When tie occurs in Pole vault and high jump, it is called the Tie of the height. Because tie happens in terms of height.
2. **Tie of Distance:** when tie occurs among the competitors of Long jump, Hop Step jump, Disc throw, sphere throw, spear throw, Hammer throw events, these are called to be the Tie of distance. Only Tie has to be postponed for the 1st position but for the 2nd and 3rd position, the result is announced simultaneously.

1. If Tie occurs in Height, the rules for breaking the Tie:

- a) The height for which the Tie has occurred, the person who has achieved this score with less effort will be the first winner.
- b) If Tie can't be broken according to the rule mentioned above, the competitor whose cross is less from the first to last will be the first winner.
- c) If the Tie still does not break, the jump needs to restart either increasing or decreasing the height. One who can cross successfully would be the winner. Here the competitors would have only once chance for jumping.

Table-1: This is shown according to the table shown below:

Competitor	Height						Unsuccessful	Re-jump			Place
	1.75 M	1.80 M	1.84 M	1.88 M	1.91 M	1.94 M		1.91	1.89	1.94	
A	0	*0	0	*0	***	-	2	*	0	*	2
B	-	*0	-	*0	-	***	2	*	0	0	1
C	-	0	*0	*0	***	-	2	*	*	-	3
D	*0	0	*0	*0	***	-	3	-	-	-	4

Where 0=to cross, *= Unsuccessful, - = Jump didn't take place.

It is seen here that none could cross the height of 1.91 M. Everyone has crossed 1.88 M height during the second effort. According to formula 2 of Tie breaking, we have to see who has less cross. It is seen that all the three competitors have 2 crosses that is according to formula 2, Tie is not possible to break. Now, we have to follow formula 3. According to this formula, the competitor would re-jump for once. It is seen that 1.89 M has been crossed by A and B. Tie has again taken place between these two contestants. After raising the height of the crossbar to 1.91 M, those two contestants have tried one jump each and A has been unsuccessful while B has been able to cross that. Thus the result is B=1st, A=2nd, C=3rd, D=4th.

Table-2

Competitor	Height							Unsuccessful	Re-jump			Place
	1.78 M	1.82 M	1.85 M	1.88 M	1.90 M	1.92 M	1.94 M		1.91	1.89	1.94	
A	-	*0	0	*0	-	**0	**	4	*	0	*	2
B	0	0	0	*	*0	**0	**	4	*	0	0	2
C	0	*	0	*0	**0	**0	**	5	*	*	-	4
D	*0	-	0	*0	**0	*0	**	-	-	-	-	1

It is seen here that none could attain the height of 1.94 M. everyone has attained the height of 1.92 M but A, B, C have attained that score at the 3rd effort but D has attained at the 2nd effort. So, according to Tie breaking rule 1, D is 1st. Since A and B both have the same cross at the 3rd effort, so both of them would be 2nd because except the 1st position, tie is not broken for other places.

Rule for Tie Breaking in case of Distance:

- (a) Out of total throw or jump, the 2nd highest distance needs to be noticed.
- (b) If Tie still does not break according to this rule, then the 3rd highest one is to be examined. (In this way, it would gradually advance).

Table-3: This rule is explained according to the table shown below:

Competitor	Height							Place
	1 st Jump	2 nd Jump	3 rd Jump	4 th Jump	5 th Jump	6 th Jump		
A	7.02	7.15	-	7.10	7.35	7.40		3 rd
B	6.10	6.50	6.60	7.05	7.10	7.12		4 th
C	7.50	-	-	7.45	7.55	7.60		1 st
D	-	7.30	7.40	7.60	-	7.5		2 nd

It is seen here that both C and D have crossed the distance of 7.60 M. According to formula, we have to look for the 2nd highest distance. C has the 2nd highest distance of 7.55 M. So, C is 1st, D is 2nd and A is 3rd. In case of Long Jump, Shot Put, Disc, Hammer and Spear throw, the same rules apply for breaking the Tie.

Task-1: Show/train the jumping method to the students which ever you like.

Task-2: Ask the students to describe the method of Belly Roll.

Lesson-4 : Triple Jump or Hop Step Jump and Pole Vault:

1. Triple Jump or Hop Step: The jump that combines Hop Step and Jump is called Triple Jump. The leg used for takeoff is also used for first hop and the opposite leg is used for hop and then jump in this method. In this event, all the three sorts of jump carry equal importance. If ratio is properly calculated in these three types of jump, one can cover longer distance through practice and exercise. Usually, 6:5:6 ratio is very advantageous for the new athletes. If first hop is 6', then step will be 5' and last jump will be 6'. If left leg is used for takeoff, then the same leg needs to be used for hop and then right leg should be used for step and then jump should be performed.

Approach Run: In this case, one has to rush like that of the long jump. The speed of running or racing is controlled in such a way that the speed reaches the highest at the time of leaving the ground.

Takeoff: The takeoff of long jump and triple is not the same. In case of triple jump, efforts are made to ensure how to keep the speed forward intact or uniform. The first hop should not be taken at too high a level. The hop should be natural and then gradually if elevates, the jump attains perfection. The height of step should be higher than the that of hop while should be higher than the previous both feats.

To Float in the Air and above the Ground: In this case, legs are moved and oscillated the same way that of the long jump, so that longer distance can be covered.

Landing: The technique for landing is similar to that of the long jump.

Guiding Rules:

1. If more than 8 competitors take part, in that case, after three jumps, 8 competitors need to be selected and those 8 people will again jump for three times. In these 6 jumps, whoever secures the highest distance will be the winner.
2. While jumping, if someone breaks the sand bar or sand wall in front of the takeoff bar, that jump will be cancelled.
3. During approach run, no sign can be placed on the run way.
4. Jumping is not allowed with weight either in hands or legs.
5. While jumping, if the other leg than the required one touches the ground, then that jump will be cancelled.

2. Pole Vault: The jump that is performed exerting pressure or mass of the body on the pole is called the Pole Vault jump.

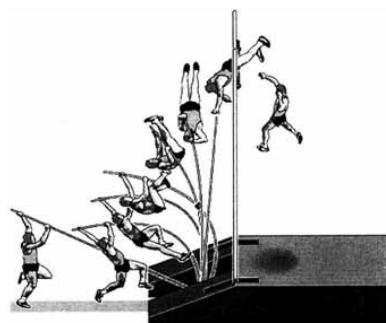
- a. Inform the competitors about the height before starting the competition and how much height will be increased after the end of every round.
- b. After the end of every round, the crossbar would rise at least 5cm.
- c. For the convenience of jumping, the competitors can shift the posts up to 0.4 M from the edge of the inner portion of the box towards runway and 0.8 M towards the pit.
- d. When the competition starts, the jumping ground cannot be used for practice.
- e. The jump of a competitor will be considered unsuccessful if-
 - 1. Both legs float in the air.
 - 2. Crossbar falls or clutters after jump.
 - 3. The front ground of the crossbar is touched.
 - 4. Someone without jumping breaks or clutters the crossbar.
 - 5. Someone takes the lower hand upon the upper hand during jump while holding the pole or changes two hands and tries to mount by climbing.
- f. A competitor will have three chances for one height.
- g. Any substance can be used in hand for the efficient holding of the pole.
- h. While jumping, if the pole breaks, he or she will have the chance to jump again.
- i. If Tie occurs, the rule for Tie Breaking for Height will be applied.
- j. The length of runway would be 40 m and width 1.22 m.
- k. The measurement of Landing will be 5 m long and 5 m wide.
- l. Every competitor will use his or her own pole.

Technique: Pole can be handled three way- 1. To carry the pole holding high, 2. To carry the pole holding it in the medium height, 3. To carry pole holding it lowering.

It depends on the height and practice of the individual competitor how and in which manner he or she will hold the pole. Whatever be the manner of holding the pole, one has to jump entering the edge of the pole in the box.

Six Phases of Jumping:

1. To rush towards the runway.
2. To place the pole properly in the box.
3. To take takeoff properly.
4. To mount high putting weight on the pole.
5. To swing the body on the crossbar.
6. To land without pole and swing the body.



Pole Vault

Task-1 : Show how Pole is held/gripped and carried.

Task-2: Describe the various phases of jumping.

Task-3: Ask the students to demonstrate the techniques of Triple jump.

Lesson-5: Throw Division/Department: During inter School and Madrashah Sports Competition, in this division or department, competitions on Sphere, Spear and Disc throw are usually held. The rules and techniques of these three events are described below:

1. Sphere Throw: The sphere will be made up of iron, brass or of similar substance. Its shape will be circular and smooth. The weight of the sphere for the male will be 7.260 kg and for the female 4.000 kg. The diameter of the shot put circle will be 2.135 M and the stroke of the sector will be 34.92° . This need to be placed in front of the circle of the stop board made of curved wood. The stop board will be of white color and would be firmly fixed with the ground so that it does detract at the blow of legs.

The Technique of Sphere Throw: The sphere would not be placed in the palm of the hand rather would be fixed with fingers fully clung to the base of fingers. The thumb and pinkie finger would be little bit scattered two sides so that it does not fall. Then the sphere needs to be placed between neck and shoulder and the elbow of the hand will be little bit elevated. The way or direction the sphere will be thrown; one has to stand with face opposite to that direction. The right leg will be forwarded and the foot of the left leg needs to be placed behind along with the ankle of the right leg. After that, the body needs to be squeezed backward while it would also move sideways.

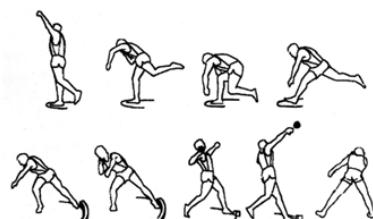
Rules:

1. The sphere needs to be thrown in the sector.
2. If the number of competitors is 8, each of the competitors will have chances of 6 throws.
3. If the number is more than 8, selection should be made by three chances of throw. The selected competitors would have additional three chances of throw each.
4. After throw, the surface of circle cannot be touched.
5. One cannot get out of the circle until the sphere falls on the ground.
6. The sphere needs to be thrown within 90 seconds from the time the name of the competitor is pronounced.

2. Spear/Javelin Throw: The English term of spear is Javelin. The length of Javelin is 2.60-2.70 m for the male and 2.20-2.30 m for the female, while weight for the male is 800 gm and female 600 gm respectively. The length of the runway would be at least 33.5 m. An arc needs to be drawn with 8 m length and 4 m width. The arc would be made of wooden materials and placed



Holding/Gripping the Sphere

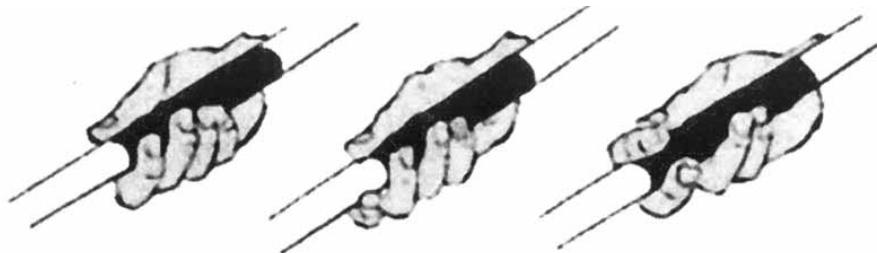


The techniques of Sphere Throw

parallel to the ground. Both sides of the arc would be extended or raised by 1.5 m.

Technique of Javelin Throw: Firstly, one should know how to hold Javelin. If the catch or hold or grip is good then throw would also be good. Holding of Javelin is of three types-

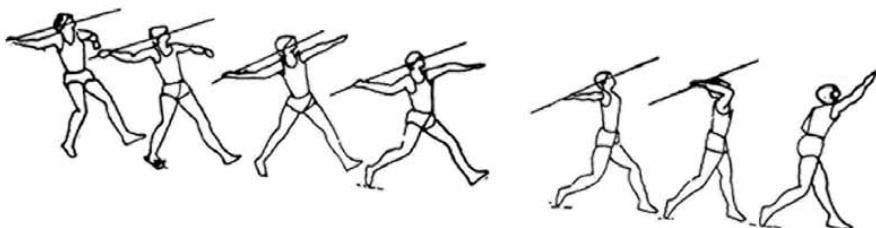
- Fore Finger Grip: In this case, the Javelin is gripped with the fore fingers.
- Middle Finger Grip: In this case, it is gripped with the middle fingers.
- In between fore and middle finger: In this case, it is to be gripped with the fore and middle fingers right in the middle.



Javelin Gripping

Javelin throw has to be performed in four phases. These are- 1. Come running, 2. Rhythm of five steps, 3. Throw, 4. Retreat.

1. Come running: For Javelin throw, one needs to come running through the runway.
2. Five Step Rhythms: Before throw, one needs to take five steps with rhythm and then throw.
3. Throw: After five steps, one has to maintain equilibrium after the Javelin throw.
4. Recovery/Retreat: After equilibrium, one has to retreat/recover.



Javelin Throw

The Rules of Javelin Throw:

1. The Javelin must fall in the sector and tip should first touch the ground.
2. It cannot be thrown touching the Javelin marker or the front marker.
3. After throw, one cannot cross the extended line.
4. One has to throw the Javelin within 90 seconds from his or her name being pronounced.
5. It cannot be clung with finger with tape or lace.
6. One cannot use gloves during Javelin throw.

7. One cannot use powder or similar substance to have tight grip.

3. Disc Throw: Disc throw is a popular field event. Disc is actually circular in appearance. The weight of this disc for the male is 2 kg while for female 1 kg. The diameter of the circle for disc throw is 2.5 M. The circle should be circumscribed by iron ring and the circle will be rough and concrete-made.

The Technique of Disc Throw:

Gripping Disc:

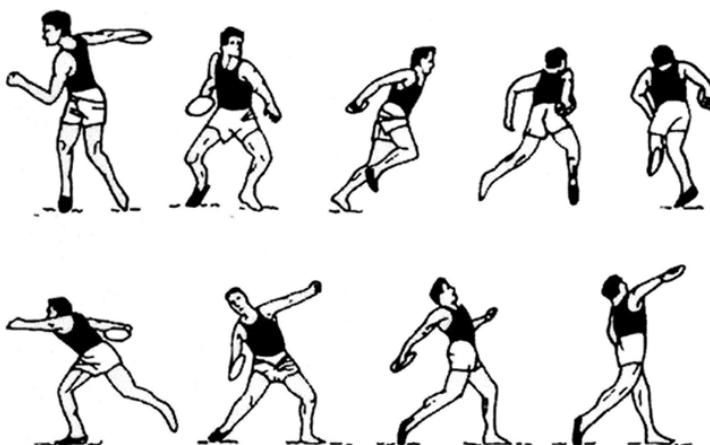
- First, the disc needs to be kept in the opposite hand.
- The smooth part of the disc will be upward facing.
- The disc has to be gripped tightly with the upper curve of the middle three fingers of that hand which would be eventually used for the throw of the Javelin.
- Support needs to be gained with the help of thumb and the pinkie.



Gripping of Disc

The Phases of Disc Throw: It has three steps such as 1. Swing, 2. Turn, 3. Throw.

1. Swing: The thrower would advantageously swing, gripping the disc tightly and standing in the circle.
2. Turn: Just before the throwing moment, the performer would have to very vehemently swirl 1.5 times and then throw.
3. Throw: Soon after the turn, the performer has to take or gain strength on leg and the throw. During throw, the performer has to maintain the equilibrium of the body on one leg.



The Technique of Disc Throw

Rules:

1. Throw to be performed within 60 seconds from the announcement of the name.
2. Disc to be thrown from within the circle.
3. After throw, the performer has to get out of the circle from the hinder part.
4. The disc must fall in the sector.
5. While the disc is floating in the air, the performer cannot come out.
6. The iron ring round the circle should not be touched.
7. While throwing, the ground outside the circle should not be touched.

Task-1: Ask the performers to show how to take grip of the disc and how to throw.

Task-2: The trainees/students should be divided into three groups and each group should demonstrate one different technique of such throw.

Task-3: Ask the performers/students to present the rules of those three types of throw.

Lesson-6: Swimming: Swimming is a very old game. In the ancient time, men have learnt swimming for survival. For survival, there was no necessity of any specific rules and regulations, tools and techniques. Later on, swimming competition event has emerged as a genuine medium of amusement and building sound physique. The pattern of swimming that we find common now-a-days was actually initiated by the English people. They first started swimming through breast stroke and side stroke. In 1873, the first competition on swimming was held in England. At a later stage, it spread throughout the world. After the independence of Bangladesh, the Bangladesh Amateur Swimming Federation was constituted in 1973. From the then period, this federation carries on various events of swimming in Bangladesh.

The Techniques of Swimming: Competitive swimming is of four types such as 1. Free Style, 2. Back Stroke, 3. Breast Stroke and 4. Butterfly.

A. Free Style Swimming: In this method, a competitor can swim in any style. But how the swimmer will go faster can be determined through repeated practice. For this purpose, the position of body, the functions of legs and hands and the inhalation and exhalation are crucially important.

1. Position of the Body: The body is to be prostrated and kept parallel with water. The head will be little bit above water but the position of head sometimes needs to be accommodated through keeping head high or bending the shoulder.

2. Functions of Leg: The leg function starts from the heap and for moving forward while the left and right legs are moved upward and downward one after another. The leg is slightly folded at the point of knee but the foot of the leg is kept straight. The ankle of the left leg does not go above water. When water is pressed with the feet, the feet of the leg may go down up to 12-18 inch. In water, when the two hands would complete one full circle of movement, the legs would have 6 times upward and downward activities or circulations. The function of leg can be divided into two parts such as a. kicking upward, b. kicking downward.

3. Functions of Hands: Two hands need to be thrown towards the head in water. One hand while moving water past, will slide the one side of the body up to the heap keeping the elbow little bit folded. As soon as the hand propels that hand upward, the other hand would reach in front of the head. As soon as the hand falls on water, the body needs to be pushed forward moving past the water. The fine tuning and coordination of hands and legs increases the speed of the swimmer.

4. Inhalation and Exhalation/Breathing: While swimming, one needs to perpetually move the head and breathe keeping the mouth slightly above water. The hand that will be over water, the head needs to be turned to that direction and the swimmer will have to breathe with mouth. But exhalation should occur when the mouth turns in the water.

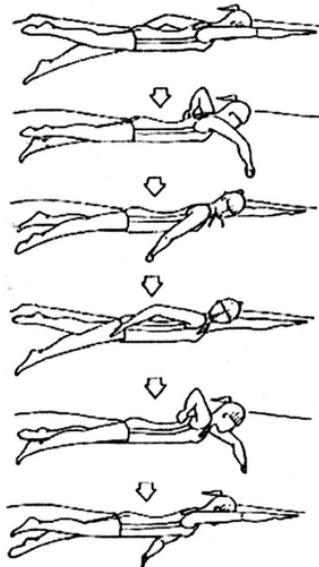
B. Back Stroke: This technique is called back stroke as one has to keep the back on the water surface keeping face upward and swimming backward.

1. Position of the Body: The body is kept with face upward and generally the head is positioned inside the water. As a result, the body floats on the water while the surface being parallel to water. The nose will not plunge into water but will be positioned above the water and eye sight will be towards the ankle of the legs.

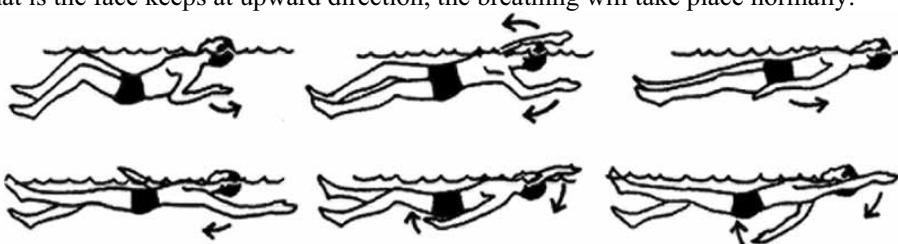
2. Function of Legs: Like freestyle swimming, function of legs is also important in this mode of swimming. In case of freestyle swimming, one has to prostrate the body and two legs, one after another, propel the body through water. Similarly, in this case, one has to fall on the back and move the two legs upward and downward. The feet of the legs will remain straight.

3. Function of Hands: In this case, one hand will go behind just beside the ear and will move the water past with palm and fingers of the hand and would ultimately reach beside the body while the other hand will go behind the same manner. One after another, one hand will go behind and come beside the body and with this process, the function of the legs will be simultaneously coordinated.

4. Breathing: Since swimmer falls on the back upon water in this mode of swimming that is the face keeps at upward direction, the breathing will take place normally.



Freestyle Swimming.



Swimming by falling on the back/ Supine Swimming

C. Breast Stroke: This is called Breast stroke as one has to swim exerting pressure on water through the breast.

1. Body Position: The body would be parallel with the surface water. The hinder part of the body will be partially plunged into water. The head will be over the water. After the functions of hands and legs, when the body will move forward, the nose and mouth will plunge a little bit into water.

2. Function of Legs: Two legs are to be kept together. Two hands will be thrown in front of the head and water will be moved past by the hands longitudinally beside the two sides of the body. At this time, the two knees will be folded and plunged into water and two ankles together will come closer to the heap and give heavy thrust on water.

3. Function of Hands: Two hands are to be extended forward together. Two hands will move past water together and while coming near the two sides of the body, the elbow will slightly bend. After the water being moved past, the two hands together would come in front of the face. At this time, the nose, mouth and forehead will be slightly plunged into water.

4. Breathing: After extending the hands in front of the face, when the hands will move past the water on both sides of the body, the mouth will rise from water for inhalation but exhalation should take place in the water.

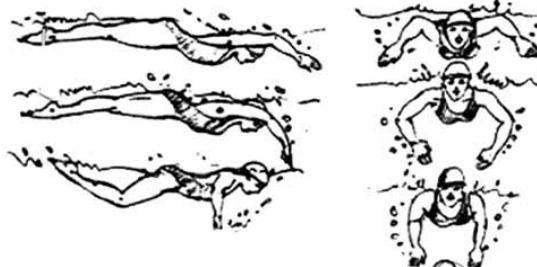
D. Butterfly: Out of the four types of swimming, butterfly is the most difficult one. In this mode of swimming, the swimmer has to work very hard. The swimmer has to practice a lot as well to master the art of butterfly swimming technique.

1. Body Position: Like all other methods, the body will be in parallel position as much as possible. Since the body is moved forward and the swimmer has to breathe raising the head, so the hinder part of the body remains inside the water.

2. Function of Leg: Two hands will be close together. The more smooth the part from heap to leg is positioned, the more heavily water can be stirred with the paired legs. The legs are to be folded slightly and thrust in water downward and backward. The way Dolphins exert pressure on water through their tail, the same way the paired legs will produce kicks. These kicks are called Dolphin Kick.

3. Function of Hands: Two hands are projected together in front of the head. Two hands together exert pressure in front of the head and move the body sharply forward. This process would be finely coordinated with Dolphin Kick of legs. When two hands are raised from within the water together, the swimmer appears to have the look of a butterfly. So, this mode of swimming is called Butterfly Stroke.

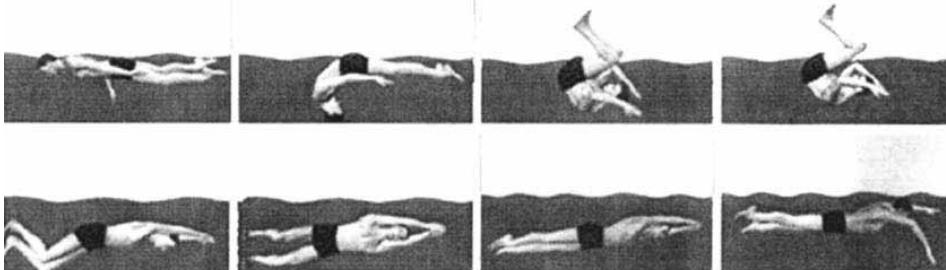
4. Breathing: When hands perform once, the legs' Dolphin Kick takes place two times. While maneuvering hands and the second time of the kicking of legs, the swimmer has to breathe through mouth. Then, the head remains above water.



Butterfly Swimming

Turning: Turning is a very important part of swimming. If turning takes longer time, it will take more time. While turning, the speed of swimming cannot be reduced. A swimmer accordingly and chronologically performs the following functions:

1. The swimmer has to prepare for going to the wall.
2. The body needs to be turned according to the techniques of turning.
3. The knees are to be folded and the two legs are to be placed near the wall.
4. If the feet of legs are properly set, the body can be well turned.
5. The swimmer has to come forward by giving thrust with legs.
6. While gliding, the body needs to be kept straight and move forward.
7. The functions of hands and legs need to start simultaneously.



The Turning of Swimming.

The Guiding Principles of Swimming:

1. An ideal swimming pool needs to be 50 m long and 21 m wide.
2. An ideal swimming pool has 8 lanes; each lane is 2.5 m wide, and 1.8 m deep.
3. The starting point will be rough and will be 0.5-0.75 m above water.
4. The starter, at the time of start would utter “Take Your Mark”, “Set” and “Fire”.
5. Except supine swimming, all other swimming needs to be started with diving.
6. In the hit, whoever becomes 1st and 2nd will be given lane 4 and 5.
7. In case of Supine swimming and Freestyle swimming, swimming can be completed by touching with one hand but Breast and Butterfly swimming requires both the hands.
8. If a swimmer starts with one style and jumps to another, he or she will be disqualified.
9. In case of Back Stroke Swimming, the swimmer needs to hold the handle that remains fitted with the wall and push with legs and start the swimming from supine mode.
10. A swimmer cannot change lane or obstruct another swimmer in swimming.

Medley Relay: When four swimmers swim for the same distance with four different styles is called Medley Relay. These are- Supine swimming, Breast Stroke, Butterfly and Freestyle.

Personal Medley: When a swimmer swims alone with these four styles, he or she is called to be Personal Medley. The sequence of this relay is- Butterfly, Supine swimming, Breast Stroke and Freestyle swimming.

Task-1: Ask the students/trainees to show freestyle swimming by bringing a long bench in the field.

Task-2: Ask everyone to practice the movement of hands by bending the body forward keeping them arranged in two rows.

Task-3: Let the students/trainees understand the various forms and modes of swimming by bringing in an expert swimmer and asking the expert to get into water and show practically all the four patterns of swimming.

Lesson-7: The Qualifications of the Athletes and the Swimmers: Qualifications vary according to the nature and number of events. Same kind of qualification is not required for all events. For a specific event, an athlete or swimmer requires specific qualification and other qualification which again varies with the shift of events. As for example, the qualification of a Marathoner is not the same with that of the Thrower. Since, athletics and swimming competitions are event-related; the success of the incumbent or contestants depends to a great extent on the personal or individual tools and techniques. Following is the description of the competitors of the athletics and swimming competition:

1. Physical Fitness: Every game and event requires physical fitness. Some game requires more strength; some require breathing while other requires speed and velocity, alacrity and readiness. But it should be kept in mind that the physical fitness varies with the number and nature of events.

a. **Sprinter:** Out of all the components of physical fitness, a sprinter requires the strength of the body the most. Especially the robust structure of the leg muscle is vital. With this, it also requires speed and velocity.

b. **Marathoner:** Out of all the components of physical fitness, a marathoner requires the breathing capacity most. Those who have good breaths farewell in these events.

c. **Short Distance Swimmer:** Out of all the traits of physical fitness, these performers require the strength of hands and elasticity of body though other fitness is also important.

d. **Long Distance Swimmer:** The first qualification required for this event is breathing. Floating on water is another important qualification as well. Apart from that, these performers also need to excel in the movement of hands and shoulders.

2. The Efficiency of Mastering over various Tools and Techniques: Since these two competitions depend on individual performance, Reaction Time plays a vital role.

a) **Reaction Time:** Running and Swimming need to be started soon after firing; hence one requires a very good reaction time. For Sprint and short swimming, starting is very important.

b) **Qualification to touch Ending Point:** Qualification for touching the ending point is also very vital. Be it athletics or swimming, in both the cases, one need to acquire efficiency in touching the ending point.

c) Those who are throwers, they need to acquire skill in turning, throwing and Follow Throw.

d) Knowing the Rules and Norms of the concerned Events: One needs to master over the rules, regulations, norms and etiquette of the concerned events to farewell in such competitions.

e) Self-confidence: The competitors must acquire self-confidence. If one does not have firm determination and high morale, one cannot farewell in such competitions.

f) Discipline and Obedience: Every competitor has to practice with discipline and take rest properly. Each competitor needs to abide by the instructions and do's and don'ts' of the teachers and demonstrators.

Task-1: Ask the students to be divided into two groups where one group would discuss about the requisite qualifications and efficiency for event-wise swimming competition while the other group would discuss same way about the athletics.

Task-2: Ask the students/trainees to describe the rules and norms of starting and ending points for both swimming and athletics.

Exercise

1. Put a Tick (✓) against the right answer:

1.1. The rule for touching the ending point in Breast Stroke is
a. By one hand, b) By two hands, c) By any part of the body.

1.2. A Marathoner requires most-
a. Elasticity, b) Breath, c) Strength, d) Alacrity.

1.3. Butterfly needs to be started with dive. This statement is
a) True, b) False, c) Partially true, d) None.

1.4. For High jumps, Tie needs to be broken for which position?
a) 1st Position, b) 2nd Position, c) 3rd Position, d) All Positions.

2. Fill in the blanks with appropriate word:

- a. The diameter of the circle in Disc Throw is..... meter.
- b. The measurement of the sector in Javelin Throw is.... meter.
- c. The length of pit in High Jump is..... meter.
- d. The ending point in swimming needs to be touched by hand/hands.
- e. In Medley Relay, the last competitor finishes swimming with.....
- f. The kicking of leg in Butterfly is called..... kick.

3. Match the word(s) in left side with that of the right side.

- | | |
|----------------|------------------------|
| a. Fosbury | a. Relay Marathon. |
| b. Bunch Start | b. High Jump. |
| c. Baton | c. Ending of Run/Race. |
| d. Frog Kick | d. 100 m. Sprint. |
| e. Torso | e. Breast Stroke. |

4. Answer in brief-

- a. What do you mean by Track Event?
- b. What are the categories of Field Event?
- c. Write the position of the body in case of Breast Stroke.
- d. What are the techniques of High Jump?
- e. When does a thrower become unsuccessful?

5. Essay type questions:

- a. Describe the rules of Long Jump.
- b. When Tie occurs in High Jump, describe what rules for breaking the tie are.
- c. Write the name of Track events.
- d. Describe the rules and techniques of Back Stroke.
- e. Describe the body position during Butterfly Swimming.

Chapter Ten

The Accidents during Games

Temporary obstacles are created in our day today life through various tangible and intangible accidents. These accidents may occur in various ways. Accidents like sudden pain in legs from any source, bruises or fracture in legs or elsewhere or wounds, sores may happen any time during exercise or games. Accidents occur suddenly or with uncertainty. At that moment, doctors are usually not available. But the patient needs first hand care or first aid that very moment. That is why; we need to be cognizant about First Aids. Through building knowledge on First Aid, we would be able to lead a hazard-free and healthy life.



The components of First Aid

At the end of this chapter, we will be able to

- Describe the importance and methods of First Aid sequentially.
- Describe the elements/components of First Aid.
- Describe the features and merits of First Aid.
- Describe the causes and Remedy of the bruised and swollen skin.
- Describe the first Aid essentials for wounds, fractures of bones, sores and traumatic conditions.
- Explain the causes and remedies of the bruises or disjoins of ligaments and fracture and displacement of joints.
- Describe the classification of bruises cuts and sores.
- Explain the first Aid or emergency support in case of bleeding of nose and tension and cramping in the muscles of legs and elsewhere.
- Describe the emergency Aid in case of someone being drowned.
- Learn about various traumas like bruises in skin, swells, wounds, fractures, displacement of joints, disjoining of ligaments etc.
- Be inspired about leading a healthy, hazard-free and happy life.

Lesson-1: The Importance, Method and Elements of First Aid:

First Aid is a primary department or discipline of medical science. A person with appropriate knowledge in First Aid is capable of providing First Aid support to someone who falls a victim to an accident or suddenly falls ill. First Aid does not aim at providing full treatment. Because a volunteer of First Aid is not a physician. Until the doctor arrives or the patient is borne to a hospital, such volunteers try to save the life of the person affected, facilitates for early recovery, prevents the patient's condition from turning worse. Thus the volunteer aims at saving someone's life with immediate and necessary medical assistance. If we describe the acronym of First Aid, the very definition and function of First Aid would be easier to comprehend.

F- Fast: The volunteer providing First Aid has to take quick action. Otherwise, the patient's condition might turn worse.

I-Investigation: Investigating the condition and surrounding of the patient, immediate decision needs to be taken.

R- Relief: First of all, the volunteer has to ensure to annihilate pain and make comfort for the patient.

S- Sympathy: The patient needs to be looked after with care and sympathy. Thus the patient would have courage and feel better.

T-Treatment: The volunteer would try his or her level best to provide treatment for the patient at the earliest and the fastest way.

A- Arrangement: After First Aid arrangement to be made for immediate disposal of the patient to a doctor or nearby hospital.

I- Immediate: Immediate action is required for patient, which means that patient should be either borne to a doctor or nearby hospital.

D- Disposal: The patient needs to be disposed from the area of accident. If the condition is not serious, then he or she should be borne home or if emergency and fatal, then borne to hospital.

The Method of First Aid:

1. Immediately but with care and attention, the first action should be taken first and the later part to be done accordingly.
2. The patient needs to be borne/taken to a safer place from the point of accident.
3. The patient needs to be investigated whether the patient has conscience or not.
4. If respiration is obstructed, artificial method needs to be adopted for respiration.
5. If bleeding continues, it must first be stopped.
6. If the patient is electrocuted, the first emergency treatment should be done without delay.
7. The pulse should be keenly observed.
8. If the patient is senseless, the garbs should be detached or severed from the body.
9. The patient and his or her companion should be given hope and mental support to bear the brunt.
10. By standers need to be dispersed as much as possible.
11. Adequate lighting, ventilation and air passage should be ensured.
12. The volunteer should observe very cautiously upon the following symptoms:
 - a. The apple of eyes normal or abnormal.
 - b. The face is gloomy or natural
 - c. The head has any severe blow or injury or head is bleeding or not.

- d. Shivering is either with fear or for cold and to decide whether the patient requires heat or not.
- e. Arrangement to be made for immediate disposal of the patient to the nearest doctor or hospital.

The Components of First Aid:

The following components or elements or items are essential in case of First Aid:

- 1. Sterilized cotton or gauge
- 2. Lint
- 3. Sprint
- 4. Pad
- 5. Scissors
- 6. A triangular and a roller bandage
- 7. Dettol
- 8. Pad, Flat Pad and Ring Pad
- 9. Iodine
- 10. Benzin
- 11. Forceps
- 12. Safety Pins
- 13. Blades and needle for stitching
- 14. Sprite
- 15. Leucoplast
- 16. Eye pad
- 17. One tube Burnol
- 18. A tray for medicine
- 19. A syringe
- 20. A First Aid Box.

Task-1: Ask the students to write on poster about the importance of First Aid.

Task-2: Ask the students to write the do's and don'ts of the volunteers of First Aid.

Task-3: Spreading the different components of the First Aid materials, ask the students to detect them and arrange them chronologically.

Lesson-2: The Features/Qualities of the Volunteer of First Aid:

- 1. Observation Power and Knowledge:** Such a volunteer can easily perceive the cause and signs of injury.
- 2. Intuition:** A volunteer does not do any unnecessary activity but tries to intuit the symptoms of injury and takes drastic action which makes him or her credible and creditable to all.
- 3. Experienced:** A volunteer with experience can serve the purpose of the patient with whatever materials he or she finds around him or her without losing time. He or she also ensures that whatever injury the patient has so far sustained might not aggravate further.
- 4. Efficiency:** The volunteer has to notice that patient does not suffer unnecessarily. In the light of experience, he or she performs his or her duty very easily and dexterously.
- 5. Right Advisor:** A volunteer gives advice to the attendant and present close relatives of the patient about their duties and responsibilities.
- 6. Right Decision:** The primary attendant would prioritize his or her service towards the patient and perform them chronologically.
- 7. Confident:** If difficulty arises, the volunteer does not lose hope or gets lost; rather he or she performs his or her first medical support with due sincerity and confidence.
- 8. Sympathy:** An ideal volunteer never turns harsh towards the patient. He needs to care the patient, share his or her pains and complains and encourage him or her and his or her attendant and relatives.

Task-1: Discuss in group about the qualities of a volunteer primary attendant.

Task-2: According to you, what qualities of such volunteer you think is very crucial.

Lesson-3: Bruises of skins, Tension in Muscle and Tendons and swells:

During our diurnal activities and games, we may fall victim to any accident or succumb to any injury. If one has sufficient knowledge about accidents and traumas, one can skip such hazards sometimes and if unfortunately it occurs, one can undergo primary treatment and take necessary measure immediately before disposing the patient to the concerned physician or the nearest hospital. It is very likely that we may succumb to from simple injury to grievous injury during games and sports.

To avoid or skip such injuries, the following steps can be adopted:

1. Before exercise or games, the body should be properly warmed up.
2. One should avoid excessive exercise or games.
3. One should select his or her peer according to his or her height and weight.
4. One should not play on rough surface, slippery ground or wet and zigzag ground.
5. One should not play near trees or pole of electricity.

1. Bruises of Skin: Skin might be bruised by the blow of playing boot, or by a hammer, stone or any blunt substance. In that case, the skin becomes smashed or trampled, blood-stained and black-spotted.

First Aid/ Primary Remedial:

1. Cold water or ice needs to be applied on the affected area.
2. A neat and clean piece of cloth or towel needs to be tightly fixed round the affected area while soaking it in cold water. When it gets dry, more cold water should be poured on it.
3. If the affected area bleeds, then measures should be taken to stop bleeding.
4. Sterilized cotton should be used to wash the stained blood and ointment should be applied.
5. If necessary, the patient should be referred to the doctor.

2. Tension or Cramping of Muscle or Tendon: While playing or lifting some heavy substance, the muscle or tendon might sustain injury resulting in some sort of tension or cramping. In this case, the fine fiber of muscles are torn causing painful sensation and causing severe difficulty in walking. Some time, the injured place swells or turns blackish. This condition is called muscle pool or tension of muscle. If so happens, the affected area needs to be at rest and then ice should be applied to that place. After 24 hours, the compression with hot water and boric power needs to be applied. Athletics and Swimmers often succumb to such injuries of muscle and tendon.

3. Swells: Sometimes, some parts of the body swell by the injuries of playing boot or by the blow during boxing, or injury by falling and thus create swelling in the affected area. The first course of action is to apply dry ice or ice or at least cold water. After applying ice for a while, the swell will reduce in size. If pain still persists, the injured should consult the doctor.

Task-1: Ask the students to show how to remedy if skin bruises.

Task-2: Describe the remedial action for tension or cramping in the muscle.

Lesson-4: Disjoining, Wounds, Bruises, Fractures and tearing of the Ligament:

1. Disjoining: Where a bone joins another bone is called the bone-joint. It is the concurrence of two or more than two bones. If a bone is displaced from the point of joining, it is called disjoining of bone. Sometimes the shoulder, elbow, wrists, thumb, lower jaw-bone, knee or the ankles of legs may be displaced from the adjoining point. Sometimes, disjoining and fracture happen simultaneously.

Symptoms: 1. The joints would swell, 2. Feeling of pain in the joint, 3. Disability to move the joints, 4. Assume abnormal shape by the misplacement of bone of the joint.

1. First Aid for Disjoining:

1. The affected area needs to be at comfort as much as possible.
2. The affected area should not be moved.
3. The misplaced bones need to be joined or attempts should be taken to join them.
4. Joint should be treated with cold water or ice.
5. If necessary, the bandage for bone fracture should used.
6. If the patient is electrocuted, proper steps should be taken.
7. If doubt is prominent that bone has sustained fracture, the bandage for bone fracture should be used.
8. The patient should be immediately transferred to the concerned doctor or the nearest hospital.

2. Bruise or Fracture:

The robust ligament keeps the bones and soft tissues at the joining point adhered and clung tightly. If this ligament is tensed or torn for some reason, it causes severe pain at the joining point and the affected area becomes swollen. This is called bruises of bones. When bruise happens during games or exercises, the affected area should be kept at a comfortable place. After that, thick layer of cotton should be laid on the upper and lower side of the affected area and firmly bandaged.

Fracture: If any bone of the body is broken, this is called Fracture. Fracture may be of various types such as 1. Ordinary Fracture, 2. Compound Fracture, 3. Complicated Fracture.

1. Ordinary Fracture: This Fracture happens in the inner part of the body. Firstly, attempts should be made to join the bones keeping tip of the bones straight. Then the affected area should be made immobile by fastening with sprint.

2. Compound Fracture: It is also called open fracture. Because in such cases, the broken bone comes out penetrating the skin. In this case, the broken bone should be bandaged straight as much as possible and that part should be made immobile.

3. Complicated Fracture: In this case, the sharp corner or tip of the broken bone generally affects some important part of the body such as kidney, liver, lungs or blood vessel. Apart from these, there are some other categories of Fracture such as-

- 1. Communitated:** In this case, the bone breaks into several pieces.
- 2. Impacted:** In this case, the edge of broken bone collides and get inside with each other.
- 3. Greenstick:** Sometimes especially in case of children, the bone does not fracture rather has some fissure.

What needs to be done for Fracture?

1. The treatment of the patient should be started immediately. It should be done as sudden transfer of patient is not possible.
2. The affected area should be made immobile.
3. Sprint should be used to make it immobile.

4. Efforts should be made to transfer the patient to hospital as early as possible.

The tearing of Ligament: The ligament is related with joint. Ligament is surrounded with tendon and membrane on the joint. A flat bracket is called ligament. Ligament helps movement of two bones. Above the ligament is the bracket of tissues which makes the joint more robust. If leg falls on unparallel ground or place, a sudden jerk severs the ligament. Sometimes, while running, if the joint is injured, the ligament is torn. The affected area becomes swollen and severe pain is felt. It becomes difficult to move that limb. In this case, ice should be immediately applied and patient should be put on rest. Later, he or she should be borne to hospital or a doctor.

Task-1: Why does disjoint happen? What are First Aid prescriptions for this?

Task-2: What are various types of Fracture? What are the First Aid

Lesson-5: The various types of Wounds and the Remedies- If some fiber of the body is lacerated or breaks into two or more parts or if that fiber is perforated, it is called wound. If the skin severs or incises and bleeds, it is also called wound. Wounds are generally of five kinds-

1. Confused Wound.
2. Lacerated Wound.
3. Incised Wound.
4. Punctured Wound.
5. Mixed Wound.

a. **Confused Wound:** Sometimes, the fine fibers and cells which are ingrained in human body when affected by a heavy substance or hard blow or wound, it sometimes causes no harm to the skin but the internal capillary are affected causing internal bleeding. Since that blood has no scope to drain, it sediments inside and creates wound which is generally called confused wound. In this case, no visible bleeding occurs.

b. **Lacerated Wound:** The wound that occurs due to attack of wild animals, or being smashed under a machine or firing is called lacerated wound. This wound is usually unequal and scattered.

c. **Incised Wound:** The wound that takes place due to bruises by some sharp weapon such as blade, knife, broken glass, or Fish-knife, is called incised Wound. In this case, the skin and blood vessel is cut very sharply and smoothly and causes incessant bleeding which becomes difficult to stop.

d. **Punctured Wound:** This wound is usually deep. The top of the wound is rather small or narrow. This sort of wound is caused by needle, nails, wires etc. In this case, bleeding might not be severe.

e. **Mixed Wound:** When a wound happens in combination with more than one wound, it is called Mixed Wound. The wound from bullet is such that the diameter of the wound at the front is narrow but inside wound is very large and bigger in diameter which cannot be sensed from outside. Again, the point from which bullet comes out has a big and uneven wound. This wound is in one side punctured wound and on the other side is lacerated wound. Both of such wound create such mixed wound.

The First Aid for Wounds:

1. The patient needs to be laid on ground at ease and kept motionless.
2. The wounded limb should be kept above heart level so that circulation of blood from the wounded part decreases and finally stops bleeding.
3. Soon after such wounds, ice should be applied.
4. The patient should be made as much immovable as possible.
5. The wounded limb or part should be washed by some anti-septic liquid.
6. To stop bleeding, direct or indirect pressure should be exerted.
7. If something hard gets into the wound, it should be taken out.
8. If blood sediments on the wound, the sediment-blood should not be washed or erased.
9. If someone is electrocuted, his or her treatment should be done immediately.
10. Sterilized pad should be used on the wound.
11. Wounded part should be made still and motionless fastening with bandage.
12. The patient cannot be allowed to take any stimulating thing or drink.
13. The patient needs to be borne to a doctor or nearby hospital.

To provide treatment of wound to a patient, one needs to have some knowledge on First Aid. These are-

- a) How the bruise has happened and to which category it does fall, whether it is confused, lacerated, punctured or incised wound are the deciding things which the volunteer has to be confirmed of.
- b) The do's need to be fixed first. If it bleeds, then bleeding is the first course of action, to cause it to stop. The volunteer needs to notice so that septic does not happen. The patient might be advised to take Toxoid Injection.
- c) If such wounds happen, actions need to be taken to wash them and if it bleeds, that must be stopped first. Then the volunteer needs to take care so that infection does not happen. If someone is electrocuted, then he or she must be provided First Aid support.
- d) If one is electrocuted, the breathing should be fixed first.
- e) Depending on the condition of the patient, he or she needs to be borne to hospital.

Task-1: What do you mean by Wounds? How many kinds of wounds there are and what are they? Write them all on a poster and mount that on the wall.

Task-2: Be divided into four groups and discuss about the First Aid support and present them coming in front of the board.

Lesson-6: Bleeding from Nose, Drowning etc, methods to rescue and provide Artificial Breathing:

- 1. Bleeding from Nose:** If someone is slightly hurt, it may so happen that the nose starts bleeding. This frequently happens in boxing.
 - a) The patient should be either seated on the chair or laid upon the back on even floor and the face should be leaned little bit backward.
 - b) The patient should be asked to breathe with mouth.
 - c) The nose needs to be held with slight pressure.

- d) The sedimented blood need not be drained out; otherwise, it would cause more bleeding.
- e) If ice or cold water is applied, it helps stop bleeding fast and easily.

2. Drowning: We have numerous ponds, rivers and drains around us. So, everyone should know how to swim. If someone does not know swimming, one should never bathe in such places. Accident might happen by leg being slipped in the pond or river. If one does not know how to swim, he or she should rather fetch water and bathe. If someone falls in such water, immediately, some floating substance should be thrown to at that person or rescue him or her by swimming. But care should be given that the drowning person might not endanger the life of the rescuer by clinging him or her tightly. If the affected person drinks too much water, then steps should be taken to let water drain out otherwise, the water entering into the respiratory tunnel might stop breathing. A drowning patient should be given the following First Aid support:

If the patient is a baby then-

- 1. The ankle of the legs should be turned upward. Sometimes, the back should be patted. As a result the water drunk during incident would drain out. If some water plant enters into body, it would also come out.
- 2. Artificial breathing should be arranged.
- 3. The soaked dress should be unworn.
- 4. Until medical support is availed, artificial breathing should be continued.

If the patient is aged or grown up person, then-

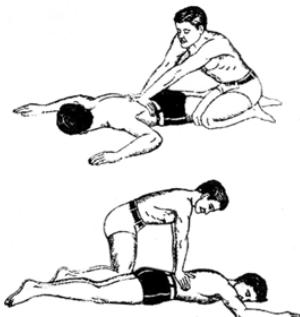
- a) The neck and mouth of the patient should be properly washed.
- b) The patient should be seated on a chair or tool such a way folding his or her knee that the head hangs. If the back is patted, the water inside during drowning would be drained out.
- c) The wet dress should be unworn.
- d) Artificial breathing should be carried out until the patient is hospitalized.

Artificial Breathing: When a patient stops breathing or is on the verge of being stopped, the volunteer has to make arrangement for artificial breathing. Artificial breathing is administered manually or through machine. By pushing with hands artificial breathing should be started. It actually means and includes that the patient's lung can be fluctuated 10-12 times per minute. As soon as the lung squeezes, the air comes out and it is called inhalation. When the lung enlarges, air enters and this is called exhalation. There are some specific methods for artificial breathing. The most popular and widely used methods are-

- a. Schafer's Method.
- b. Silvesters Method.
- c. Holger neilson Method.
- d. Mouth to Mouth Method.

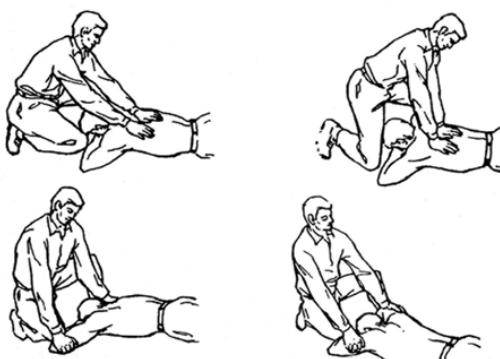
A. Schafer's Method: The patient has to be laid with face downward in supine position. His or her nose will face the ground. The two hands will be scattered on the two sides of head. The head should be slid one side so that the nose does not touch the ground. No

time should be spared to unzip or unworn the patient. The First Aid volunteer should face towards the head of the patient and make his or her position parallel with the heap and then folding his or her knee, the volunteer would keel down beside him or her. Then he or she would place both the hands on both sides of the heap such that the thumbs would face forward and other fingers would remain scattered longitudinally on both sides of the heap. The hands and elbow need to be kept straight forward. Then without bending elbow, the volunteer would hang forward and press and then recollect him or herself. This exertion of pressure and withdrawal of pressure functions needs to be done one after another within 5 seconds. Exertion of pressure for 2 seconds and withdrawal of pressure would take 3 seconds. This would continue until the breathing comes to normalcy.



Schafer's Method

B. Silvesters Method: The patient needs to be laid with face upward in supine position. A small pillow should be placed under the neck of the patient. His or her head should be placed such a way that hangs down from the pillow. The clothes need to be stripped down from the body. Notice should be given that the patient does not stop breathing reversing the tongue. The patient needs to be laid flat and his or her elbow should be moved upward forcibly so that it creates pressure on both sides of the chest. In this way, pressure once has to be exerted and later withdrawn. Total time for this emergency support is 5 seconds. Placing one piece of paper, the volunteer needs to examine whether the patient has recovered breathing or not. This process should continue as long as the breathing comes to normalcy.



Holger Neilson Method

C. Holger Neilson Method: The patient needs to be laid upside down/prostrated.

- The volunteer needs to sit kneeling down and leaning against the head of the patient.
- The back of the patient needs to be patted. Then the two arms of the patient need to be moved up and down. It should be kept in mind that if there is a fracture at the shoulder joint or fracture adjoining to the shoulder, then this method is not operative.

The rule for exerting pressure-

- a) First and second steps are to create pressure on the back.
- b) The third step is to cease for a while.
- c) The fourth and fifth step is to create tension on the arm.
- d) Sixth step is to stop for a while.

In this method, the patient should be breathed 10-12 times a minute. Every time, the rate of passing the air is 1 liter.

D. Mouth to Mouth Method: A very easy and handy method is this Mouth to Mouth method. By this method, air can be blown into the lungs. This method requires less effort and energy as well. Even the youngsters can easily apply this method. But from view point of morality, this method creates some obstacles. If a baby does not breathe, this method has been in application from time immemorial for artificial breathing. The main aim of this method is to save the life of the drowned person. The volunteer first has to wash the inside of the mouth, then has to hold the head of the patient very tightly and the other hand is to be placed on the lower jaw, the mouth of the patient is to be opened wide and after inhaling breath to the full, the volunteer fits in his or her mouth into the mouth and lips of the patient keeping it airtight and blows the oxygen into the lungs of the patient to his/her full capacity. This way, the volunteer has to blow air into the lungs of the patient for 10-12 times.

Task-1: Describe the means and techniques to stop bleeding from the nose and present the same in the class.

Task-2: What do you mean by artificial breathing?

Task-3: Out of the various methods of artificial breathing, show practically the one you think easier for you.

Exercise

1. Put a tick (✓) mark against the right answer:

1.1 Which one is not the element of First Aid?

i. Pad, b. Dressing, c. Scissors, d. Cotton.

1.2 What is the purpose of First Aid?

- a. To keep the patient fully sound,
- b. To apply ice to the patient.
- c. To facilitate for the recovery of the patient.
- d. To transfer the patient to a doctor.

1.3 If the bone inside the body fractures, what sort of fracture is it?

- a. Ordinary Fracture.
- b. Complicated Fracture.
- c. Compound Fracture.
- d. Hand Fracture.

2. Fill in the blanks

- a. Affected by a heavy substance, no harm to the skin, blood has no scope to drain is called
- b. The wound that takes place due to bruises by a blade or sharp weapon is called
- c. The wound that takes place by needle is called
- d. The wound that occurs due to smash under a machine is called

3. Match the words in the left with that of the right.

- | | |
|--------------------------|----------------------|
| a. Swelling. | a. Dressing. |
| b. Greenstick. | b. Ice. |
| c. Artificial Breathing. | c. Fracture. |
| d. First Aid | d. Schafer's Method. |

4. Answer in brief-

- a. What is dressing?
- b. What do you mean by artificial breathing?
- c. What are ways to stop bleeding from the nose?
- d. What do you mean by bruise?

5. Essay type questions:

- a. What are the symptoms of joint displacement?
- b. What do you mean by complicated Fracture?
- c. What do you mean by punctured wound?
- d. Describe briefly, how artificial breathing is administered in Silvesters method.

The End



শিক্ষাই দেশকে দারিদ্র্যমুক্ত করতে পারে

– মাননীয় প্রধানমন্ত্রী শেখ হাসিনা



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