

Health and Physical Education

Class - 8

Government of Nepal
Ministry of Education
Curriculum Development Center

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Preface

The curriculum and curricular materials have been developed and revised on a regular basis with the aim of making education purposeful, practical, relevant and job-oriented. It is necessary to instill the feeling of nationalism, national integrity and democratic spirit in students and equip them with morality, discipline and self-reliance so as to develop in them social and personal skills as well as the basic competencies of language, science, occupation, information and communication technology, environment and health, and life skills. It is also necessary to enable them to appreciate, preserve and promote arts and aesthetics, social norms and values and ideals. Moreover, in order to develop an equitable society, it is necessary to inculcate students with respect for ethnicity, gender, disabilities, languages, religions, cultures and regional diversity. Likewise, education should also help them to be well-informed of human rights and social norms and values so as to make them capable of playing the role of responsible citizens. This textbook has been developed in this form based on the Basic Education Curriculum, 2069 (Grade 8), incorporating the feedback obtained from various schools, workshops and seminars and interaction programmes attained by the teachers, students and parents.

This textbook was translated and edited by Min Bahadur Achhami, Madhav Kumar Shreshtha, Prem Prasad Paudel and Laxmi Dhital. In bringing out this text book in this form, the contribution of the Executive Director of CDC Mr. Diwakar Dhungel, Deputy Director Ms Sarala Paudel, Prof. Dr. Ramkrishna Maharjan, Dr. Chitra Bahadur Budhathoki, Krishna Prasad Dhakal, Shyamkrishna Bista, Gokarna Thapa and Punam Dangol is highly commendable.

Language of this book was edited by Chandra Kanta Bhusal and Madhu upadhaya. Typing was done by Abhaya Shrestha. The layout design of the book was done by Jayaram Kuikel. The illustration of the book was done by Sunil Ranjit and Gautam Manandhar. CDC extends sincere thanks to all those who have contributed in the development and revision of this text book.

Textbook is considered as an important tool of learning. Experienced teachers and curious students can use various learning resources and tools to achieve the competencies targeted by the curriculum. An attempt is made to make this textbook activity oriented and interested as far as possible. The teachers, students and other stakeholders are expected to make constructive comments and suggestions to make this book a more useful learning material.

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Unit 1

Human Body

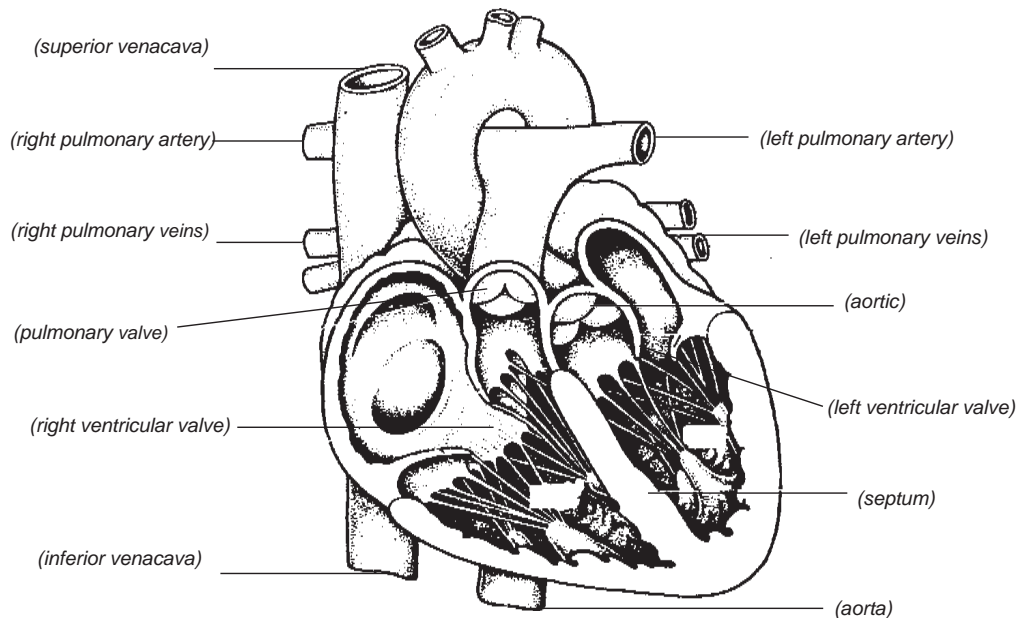
We have studied about the introduction of human body in the previous grades. In this grade, we will study the following aspects of the human body.

Circulatory System

Circulatory system refers to the process of joint and smooth functioning of the heart, blood and blood vessels in the human body. Circulatory system takes the nutrients, oxygen, hormones and enzymes obtained from different sources to the cells of the body. The blood returns to the heart in order to be purified. The organs such as heart, blood vessels, that are involved in the circulatory system and the blood are described below.

The Heart

The heart lies little inclined on the left of the chest. Its weight in an adult female is 230 to 280 gram and in an adult male is 280 to 340 grams. The part that separates the right and left part of the heart is called septum. The upper chambers of the heart



are called atrium and the lower chambers are called ventricle. The inferior venacava and superior venacava open from the right atrium. Similarly, the pulmonary veins open from the left atrium. The Pulmonary artery begins from the right ventricle and aorta begins from the left ventricle. Between right atrium and right ventricle, there lies tricuspid valve. Similarly, between left atrium and left ventricle, there lies bicuspid valve. The functions of the heart are as follows.

- a. It circulates the pure blood to different parts of the body.
- b. It sends the impure blood to the lungs in order to purify it.
- c. It assists to circulate the oxygen and nutrients hormones to different parts of the body.
- d. It helps to maintain temperature by blood circulation.

Blood Vessels

The vessels through which the blood flows are called blood vessels. The blood that is pumped by the heart reaches the cells through the blood vessels. The same blood again returns to the heart through the blood vessels. Such types of blood vessels are of three types. They are: arteries, veins and capillaries. Except the pulmonary artery, in all other arteries the pure blood flows and it reaches different parts of the body. The pulmonary artery leads the blood to the lungs for purification. The arteries divide into innumerable capillaries. The capillaries reach the cells. The blood takes the oxygen and nutrients to cells and it takes back carbon dioxide and other toxic elements again to the heart. In this process, the capillaries integrate into veins and through those veins, the blood moves to the heart. Through all the veins, the deoxygenated blood circulates but through the pulmonary veins, oxygenated blood circulates.

The Blood

The red-coloured liquid in our body is called the blood. In the body of an adult person, the quantity of the blood is approximately five liters. The blood consists of blood cells and plasma. The blood cells are formed in bone marrow. The blood cells are of three types. They are: red blood cells, white blood cells, and platelets. The function of the blood is to take the nutrients, oxygen to the cells and concentrate

carbon dioxide to the lungs. Similarly, the blood increases the immunity of the body and balances the level of water, minerals, salt and temperature. It takes the hormones to the appropriate parts of the body.

Blood Circulation Process

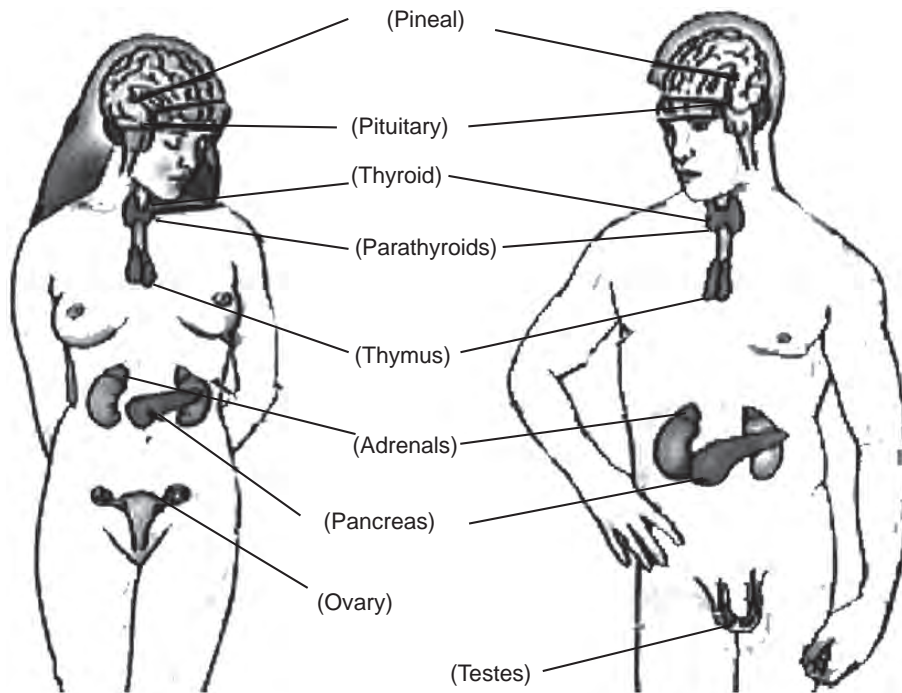
The heart functions as a pump in order to circulate the blood to the body parts. The impure blood from the upper part of the body reaches the heart through superior venacava and such blood from the lower part of the body reaches the heart through inferior venacava. Both these venacava take the blood to the right atrium. When the heart relaxes, the blood flows to right ventricle through the tricuspid valve. When the heart contracts, the same blood moves from right ventricle to the lungs through the pulmonary artery. The blood in the lungs reaches the air sacs through the capillaries in it. At that time, the blood gets purified mixing the oxygen and leaving the carbondioxide (Co_2) there. The purified blood reaches the left atrium through pulmonary vein. This type of circulation of the blood from the heart to the lungs and from lungs to the heart is also called pulmonary blood circulation. The blood collected at left atrium moves to the left ventricle through the bicuspid valve when the heart relaxes. After the contraction of the heart, the same blood is pumped to all the organs, tissues and cells through aorta. The cells consume the oxygen of the blood and the carbondioxide or other unnecessary elements mixed into the blood. That blood finally moves to the right atrium of the heart through capillaries to veins and veins to venacava from different parts of the body. This process is known as systemic blood circulation.

Glandular System

Gland is a group of special cells that produce enzymes and hormones. The enzymes and hormones produced by the glands affect in digestion, physical activities, etc. Enzymes secreted by exocrine glands do not directly mix into the blood. They secrete enzymes into ducts and reach the necessary parts through ducts. Glands such as salivary glands, sweat gland, pancreas, and stomach are the examples of such glands.

Endocrine Glands

The hormones secreted by endocrine glands directly mix into the bloodstream and reach the parts of the body through it. The types of such glands are described below.



a. Pineal Gland

Pineal gland lies at the middle of the brain. Its size is bigger in the early years after birth and gradually becomes smaller when we become adult. This gland is reactive to brightness. It produces the hormone melatonin more in darkness than in the brightness. Because of this, we feel like sleeping at night. In the case of other animals, it creates the sensation of hibernation. Due to this hormone, the birds know the time.

b. Pituitary Gland

Pituitary gland is located at the center of the skull. This gland controls all other glands. Therefore, this gland is also called master gland. It produces growth hormone and this hormone assists in the growth of our body. In case of low production of this hormone, our body height cannot increase. If there is excessive secretion of this hormone, there may be unnatural growth. This type of disease condition is known as gigantism. Pituitary gland assists in the development of ova in females and also assists the breasts to activate milk secretion during pregnancy.

c. Thyroid Gland

This gland is situated both in the right and the left side of the anterior part of the neck. They are two in number, one in each side. This produces the hormone named thyroxine. It also produces calcitonin. The size of this gland may grow abnormally in case of lack of iodine. This case is called goiter.

d. Parathyroid Gland

Parathyroid gland remains at the back of thyroid gland and four in number. It produces the hormone called parathormone. It strengthens the bones by balancing the level of calcium and phosphorous. In case of lack of this hormone, the disease called muscle tetany (the abnormal contraction of muscles) may take place. If this hormone is produced in excess, stone may be formed in the ureter and may result in unnatural growth of bones.

e. Thymus Gland

Thymus gland grows until adulthood and becomes thinner along with ageing. This gland is located at the back of sternum in the chest. Its weight remains almost 10 grams in childhood, 35-40 grams in adulthood and 15 grams in old age. It secretes the hormone called thymosin. The main function of this gland is to produce lymphocytes. The lymphocytes produce antibody and increases immunity.

f. Adrenal Gland

Adrenal gland remains at the top of each kidney. It produces the hormone corticoids at the outer layer. If this hormone is produced in excess, then symptoms such as increment of sugar level in blood, dehydration and continuous weight loss may be noticed. The inner part of this gland, medulla, secretes the hormone adrenaline. The main function of this is to increase the rate of heart beat, blood pressure, and blood circulation in muscles.

g. Pancreas

Pancreas is situated at the back of the stomach. This gland is also known as a mix gland. While producing digestive hormone, this gland functions as an exocrine gland. It functions as an endocrine gland while producing glucagone and insulin. Insulin balances the glucose level in the blood. If the glucose level rises, more glucose can be seen in urine. This disease condition is known as diabetes.

h. Gonads

This gland consists of two other glands specific to males and females. They are: ovaries in females and testes in males. They are heterocrine glands which secrete hormone and gametes.

i. Ovary

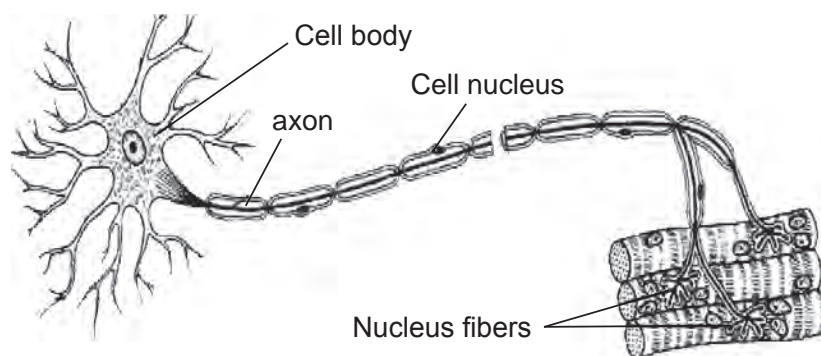
This gland is in females only. Two of this gland remains on the right and left sides of uterus. This gland secretes the hormones named oestrogen and progesterone. Oestrogen enlarges size of breasts, grows pubic hair, and activates ovaries to produce ova. Progesterone creates favourable conditions for fertilized ova to be alive. It assists the zygote to grow and activate breast to produce milk. This hormone is responsible for menstruation in females.

ii. Testis

This gland is in males only and has two small parts. It produces hormone called testosterone. Due to this hormone, beard and other hairs grow in males. Similarly, this hormone is responsible for the development of hoarse sound in males and increment of size of penis. This hormone activates the testis to produce sperms.

The Nervous System

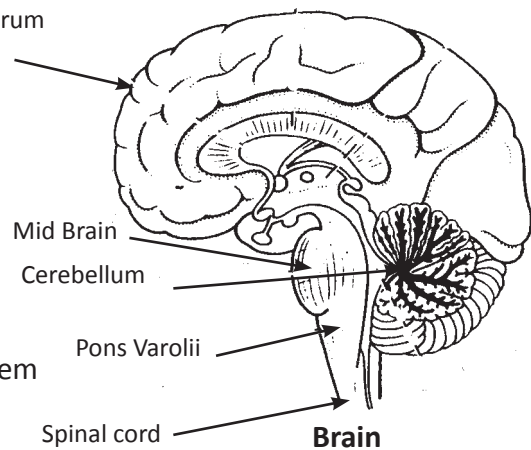
The nervous system controls and regulates all the other systems as well as external and internal activities in our body. This system is also known as a master system. In the nervous system, there are neurons and nerve fibres. This system can be divided into three parts as mentioned below.



- a. Central Nervous System
- b. Peripheral Nervous System
- c. Autonomic Nervous System

A. Central Nervous System

The main parts of the central nervous system are brain and spinal cord.



i. The Brain

The white-coloured element in the skull is the brain. Its weight in adults is around 1400 grams. It includes hundreds of thousands of neurons. It consists of the following parts.

Cerebrum: Cerebrum lies at the top of the brain. It covers the large part of the brain. This part controls and regulates memorizing, arguing, thinking, differentiating, and analyzing. This is also the centre of generating the sensations for warmth, smell, taste, hearing, and viewing. This part of the brain controls the functions of other parts of the brain. This part also activates the muscles and glands of the body.

Cerebellum: Cerebellum lies just below the posterior part of cerebrum. It balances the physical movement. It controls and balances the muscular activities while walking and running. This part also delivers the sensations obtained to cerebrum.

Mid Brain: Mid brain lies between cerebrum and pons varoli. It delivers the messages obtained from the spinal cord to cerebrum and sends the instructions of the cerebrum to the spinal cord.

Pons Varoli: Pons varoli lies between mid-brain and medulla oblongata. It also delivers the messages to and from spinal cord and cerebrum.

Medulla Oblongata: Medulla oblongata lies between pons varoli and spinal cord. It regulates the involuntary functions of the body. The main functions of this part of the brain are to control heartbeat, respiration, blood pressure, swallow, salivation, sneezing against pinching, heating, etc. are the examples of reflex actions.

Spinal Cord: Spinal cord begins from medulla oblongata. The white soft cord like part that runs along the dorsal side of the body within the vertebral column to the coccygeal bone is referred to as spinal cord. It sends the sensations to the brain and also controls reflex actions. Thirty one pairs of spinal nerves emerge from this cord. These nerves control the functions of internal and external organs.

B. Peripheral Nervous System

In peripheral nervous system, twelve cranial nerves and thirty one spinal nerves work collectively. The cranial nerves generate from the brain and the spinal nerves generate from the spinal cord. They are spread around various organs of the body. They communicate the sensations to the brain or spinal cords from various organs and vice versa.

C. Autonomic Nervous System

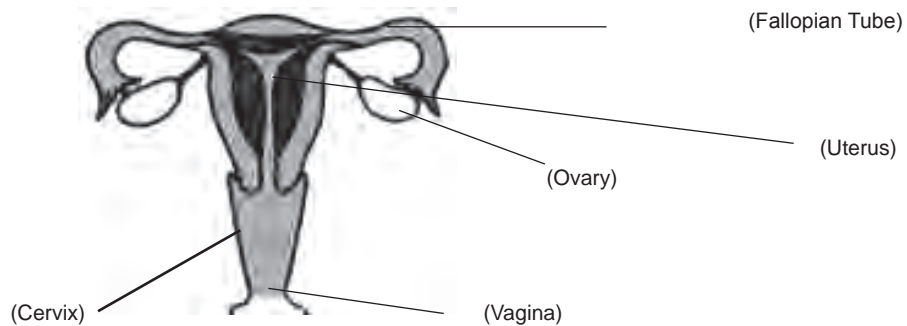
A number of actions take place in our body, which are beyond our control. Such actions are regulated by autonomic nervous system. This system can be divided into two types as sympathetic and para-sympathetic nervous system. The functions of sympathetic and para-sympathetic nervous system are opposite to each other. The sympathetic nervous system makes the pupils smaller, increases the heartbeat, slows down the digestive system, decreases the amount of urine, and slows the functions of endocrine glands. The para-sympathetic functions just opposite to the actions mentioned above.

Reproductive System

The process of collective functions of the organs responsible for reproduction is known as reproductive system. It includes both male and female reproductive systems. Both these systems produce gamete, a special type of cell. The male reproduction cell is known as sperm and female reproduction cell is known as ova. Within human reproductive system, the male and female reproductive systems are separately described as below.

1. Female Reproductive System

The female reproductive system is divided into two parts. They are: external genitals and internal reproductive organs. The external genitals are collectively called vulva. We have studied about the external genitals of female reproductive system in our previous classes. Here, we have described about the internal reproductive organs and their functions.



- a. Vagina
- b. Uterus
- c. Fallopian tube
- d. Ovaries

a. Vagina

The muscular tube extending from cervix to the exterior of the body is called vagina. It is soft, greasy and elastic. It is almost 8 to 10 centimeter long. The main functions of the vagina are: receive the penis during sexual intercourse, serve as a conduit for sperm to enter uterus and menstrual flow from the uterus and function as a birth canal during childbirth.

b. Uterus

Uterus is a vacuum muscular organ. It is 7.5 centimeter long, 5 centimeter wide and 2.5 centimeter thick. The topmost portion of this is fundus, the middle portion is body and the lowest portion is cervix. The walls of the uterus are formed of three

muscular layers.

Functions of Uterus

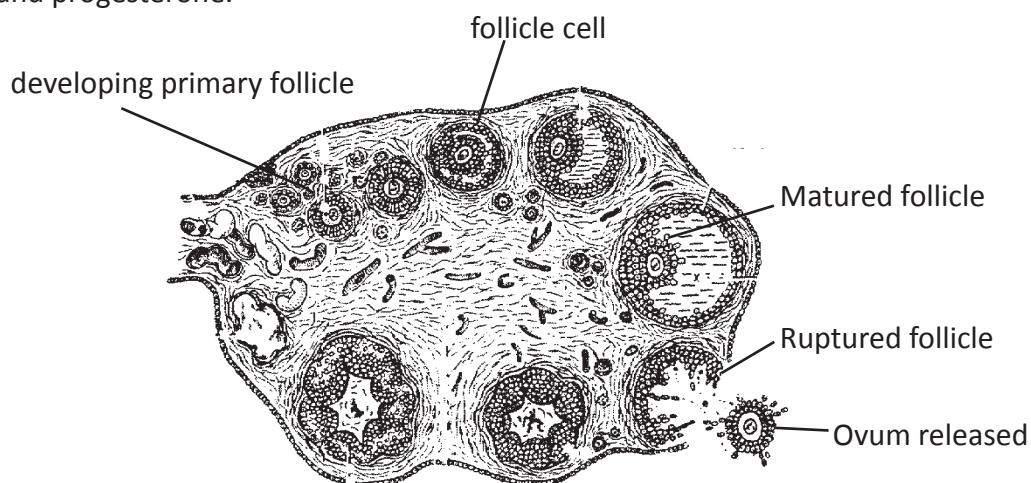
- i. To regulate menstruation
- ii. To hold ova after conception.
- iii. To provide protection and nurturing to fertilized ovum.
- iv. To grow and develop the embryo.
- v. To assist in child birth.

c. Fallopian Tube

There are two fallopian tubes each on both sides of the upper part of uterus. Each one is 10 cm long. The main functions of this part are: hold the egg produced from the ovaries and create conditions for it to get fertilized. Similarly, it also transports the fertilized egg to uterus, and allows the sperms to pass to ampulla from the uterus.

d. Ovaries

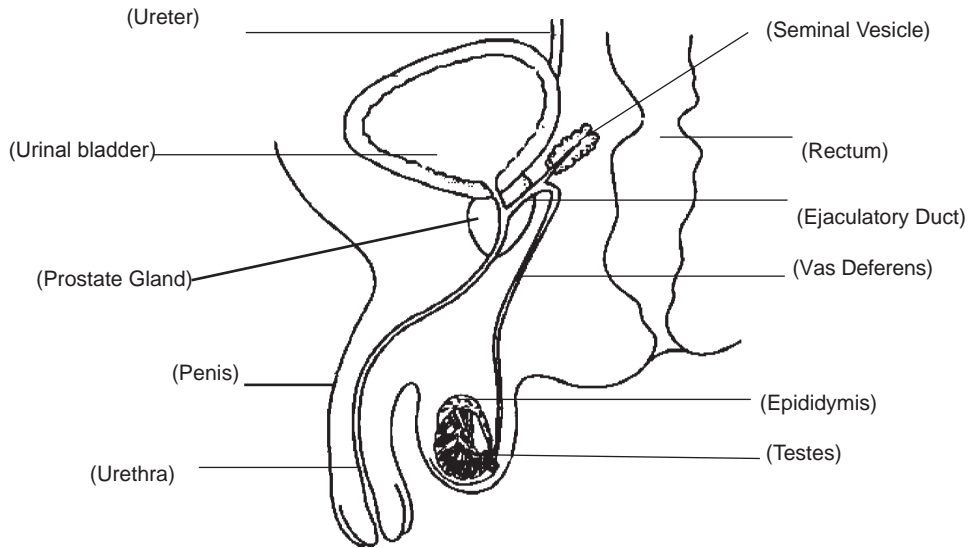
There are two ovaries each on right and left side of the uterus. They include innumerable immature eggs. When the females get into their puberty, then the ovaries produce single matured eggs each month. This process is known as ovulation. The main functions of this part are to produce eggs and the hormones oestrogen and progesterone.



figure; cross-section of ovary (human)

2. Male Reproductive System

The system consisting of male reproductive organs and their anatomical/physiological structure is called male reproductive system. It includes the following organs.



- a. Testes
- b. Epididymis
- c. Vas Deferens
- d. Seminal vesicle
- e. Ejaculatory duct
- f. Prostate gland
- g. Urinal bladder
- h. Urethra
- i. Penis

a. Testes

There are two testes in males. They remain hanging in the scrotum (a muscular bag). In each testes, there are 200 to 300 tubules. In each portion, there are seminiferous tubules. The main function of this is to produce sperm and testosterone hormone.

b. Epididymis

There are innumerable thin ducts in each testes. These ducts are called seminiferous tubules. The combination of all these tubules makes epididymis. It is in the form of a curve just behind the testes. It includes long and curve type thin ducts and they jointly form a single duct. The main function of this is to form matured sperms and push the sperms towards vas deferens.

c. Vas Deferens

This part generates from epididymis and ends at ejaculatory duct. They are two in number. This duct is 40 to 45 centimeter long. The main function of this is to pass sperm to ejaculatory duct.

d. Seminal Vesicle

Seminal vesicles are situated at the back of the urinary bladder. It produces the semen and provides nutrients to the sperms. It stores sperm before ejaculation.

e. Ejaculatory duct

The duct emerging from seminal vesicle and vas deferens jointly form ejaculatory duct. So, this duct leading from seminal vesicle to prostate gland is named ejaculatory duct. It is almost 2 centimeter long. The main function of this is to pass sperm towards urethra for ejaculation.

f. Prostate gland:

This gland remains below the urinary bladder. It covers the initial portion of urinary tract. Because of this, in case of enlargement of this gland, there is difficulty in urination. The main function of this is to produce a greasy type of liquid that assists the sperms to move. It helps to neutralize the acidic environment of urethra.

g. Urethra:

This part expands from the urinary bladder to the end of penis. Its length is almost 18 to 20 centimeter. Urination and ejaculation are the basic functions of urethra.

h. Penis

The penis is formed of erectile tissues. This is of cylindrical shape. It consists of three parts. They are root, body and glans penis. The top of penis is of triangular shape called glans penis. The covering skin at the top of penis is called foreskin. Sexual intercourse, insertion of sperm into the vagina, urination, etc. are the basic functions of penis. Urethra opens of the tip of glans penis.

Activity

Sketch the figures of female and male reproductive systems and discuss their functions with each other.

Summary

- The process of simultaneous functions of heart, blood and blood vessels in human body is called blood circulation system. This system takes all the nutrients, oxygen, hormones and enzymes to the cells.
- The organs in our body that produce various liquids and hormones are called glands. The system formed of these organs is called glandular system.
- The internal and external activities of all systems of our body are controlled and regulated by the nervous system.
- The process of collective functions of all the organs that are responsible for reproduction is called reproductive system.

Exercises

1. Give very short answer to the following questions.
 - a. What are the organs that take part in blood circulation system?
 - b. What are the types of blood vessels? Write their names.
 - c. Which hormones are produced by thyroid gland?

2. Give short answer to the following questions.
 - a. Write about blood circulation process.
 - b. Write the names of endocrine glands and describe the functions of any two of them.
 - c. Write the functions of the organs of female reproductive system.
3. Draw the figures of the following organs and label them.
 - a. The Heart
 - b. The brain and spinal cord

Unit 2

Personal Health

Introduction

We have to keep all our body parts clean in order to be healthy. Besides this, regular exercise, rest, sleep, recreation, etc. are also necessary. Balanced diet and healthy food along with required amount of water is also necessary. Smoking, alcoholic habits, drug addiction badly affect our health. Similarly, use of cosmetics excessively, consuming, unhygienic food and unsafe sexual behaviour, etc. affect negatively in our health. We can be healthy if we maintain personal hygiene.

Ways to Keep Our Body Clean

- a. We should wash our hands after going to toilet (defecation), after touching dirt, before cooking food and having meal.
- b. We should clean body parts such as eyes, nose, teeth, ears, neck, skin, genitals, hands and feet regularly.
- c. We should cut nails, wash clothes, take a bath and comb hair regularly.
- d. We should use clean water and handkerchief to clean eyes.
- e. We should take a bath daily.
- f. We should wear clean clothes that are compatible with summer and winter seasons.
- g. We shouldn't take drugs, alcohol and tobacco.
- h. We shouldn't walk bare foot and should use separate sandals for toilet.
- i. Towels, combs, tooth brushes, etc. must not be shared. They should be personal.
- j. The girl should change underwear and pad used during the period.

Regular Health Check-up

Regular health check-up is necessary in order to prevent ourselves from different types of diseases. Various types of bacteria and viruses may enter our body and weaken our immunity power. Therefore, regular health check-up is necessary. We have to consider the following aspects in order to do this.

- a. We have to make frequent health check-ups to confirm whether the internal organs such as lungs, heart, kidneys, intestines, etc. are functioning properly or not.
- b. Regular health check-ups are necessary for pregnant women and babies.
- c. The height and weight of the babies is to be measured regularly.
- d. The children should be provided with necessary nutrients and timely vaccinations.
- e. We should make periodic eye check-up.

Activity

Prepare a list of the activities that your family members carry out in order to keep the body parts clean and share it to your friends in the class.

Summary

- The process of taking care of various organs of the body in order to keep them clean by the individuals themselves is known as personal health.
- The task of the people regularly visiting the health centers in order to confirm the health status of the whole body is known as regular health check-up.

Exercises

1. Tick (✓) the correct alternative from the list.

- a. What do you mean by personal hygiene?
 - i. Cleanliness for all members of the family
 - ii. Cleanliness for the society
 - iii. Cleanliness for the school
 - iv. Cleanliness for own self
- b. What different measures should we follow in order to protect our eyes?
 - i. Have eyes checked up frequently
 - ii. Always keep eyes clean
 - iii. Eat green vegetables and yellowish fruits.
 - iv. All of the above
- c. What do you mean by regular health check-up?
 - i. The check-up to find out the health condition
 - ii. The check-up we make when we are sick
 - iii. The check-up after getting an accident
 - iv. No need of regular health check-up

2. Give short answers to the following questions.

- a. What are the things we need to be careful for personal health? Write briefly.
- b. What do we need to do to protect our eyes? Prepare a list of such measures.
- c. What is the advantage of regular health check-up?

Unit 3

Nutrition

Nutrition is the entire process by which organisms obtain energy and nutrients from food. Nutrition is essential in order to keep the body fit and healthy. Nutrition is the science related to food. It has close relation with health. It is very much important for physical growth, formation of cells and tissues in the body, repair them accordingly, protect the body, and produce energy as required.



Introduction to Malnutrition

Malnutrition is the result of the lack or excess of the nutrition necessary for the body. The level of nutrients may be more or less if we don't take food as required. If people do not take the food available at home in a balanced way or if children are not fed accordingly, they may get malnutrition. The body becomes very much weak during malnutrition so that various diseases may attack it.

In order to avoid malnutrition, we have to eat fruits, green vegetables, grains, cereals, meat, fish, milk, curd, etc. in a balanced way. Early treatment of the diseases such as worm, dysentery, diarrhea, tuberculosis, etc. is necessary. Through health education, we have to raise public awareness in regard to increment of food production and control of population growth. Similarly, we have to pay attention to environmental hygiene and undertake periodic health check-up.

Effects of Malnutrition

Marasmus

A kind of disease that takes place due to shortage of protein and carbohydrate in children and the people of any age is called marasmus. Mostly this disease is found in the children below five years of age. The common symptoms of this disease are: loss of appetite, weakening of the body, appearance of wrinkles in the face, etc. Similarly, weight loss, slow growth, loose stool, dehydration and thin chest muscles making the ribs easily visible are the other symptoms of marasmus.



Milk, fish, meat, grains, etc. are the sources of protein and wheat, maize, millet, potato and other sweet food items are the sources of carbohydrates. To prevent children from marasmus, balance diet is necessary.

Preventive Measures

- a. The child needs to be breast fed only for six months from the birth. After six months, the child must be fed with soft and nutritious food items such as 'Sarbottamlito', fruit juice, grain soup, vegetable soups, 'dalbhat', etc. along with mother's milk.
- b. There must be early treatment of various communicable diseases.
- c. The children should get timely treatment of diseases such as Malaria, Pneumonia, dehydration, etc.
- d. We should be aware of the disease.

1. Rickets

If there is deficiency of Vitamin 'D' in food, the body cannot extract calcium and phosphorus which causes poor growth of bones and teeth. This condition is called rickets. In this disease condition, the bones of the legs may be twisted, ribs and forehead may be fronted, bones at wrist and ankles may be swelled. These are the main symptoms of this disease.

Preventive Measures

- a. We should take the food items that include vitamin D such as yellowish part of egg, fish oil, milk, curd, liver, etc.
- b. We should eat food items that include calcium and phosphorous such as milk, green vegetables, grains, etc.
- c. When the sun's rays hit the skin, a reaction takes place that enables skin cells to manufacture vitamin 'D'.
- d. If necessary, we should consult the nearest health centers and have check-ups.

2. Anaemia

Anaemia refers to the deficiency of blood in the body. The red blood cells in the body cannot grow due to the deficiency of iron or vitamin B and vitamin C which ultimately causes anaemia. This disease is usually diagnosed in children and pregnant women. In the case of anaemia, the tongue, skin and inner part of the eyelid changes into red colour and seems paler. Similarly, other symptoms include finger nails changing into white, the extremities becoming weak and frequent rapid respiration. Therefore, the children and pregnant women need to be fed with food items such as liver, fish, meat, milk, curd, green vegetables, leguminous, fruits, etc.

Preventive Measures

- a. We should eat food items such as green vegetables, grains, fish and meat, eggs, dishes of millet, apples, etc. from which we get vitamin C and iron.
- b. We should visit health centers for check-ups and advice.

3. Night Blindness

Night blindness is caused due to the deficiency of vitamin A. Though this disease can be found in the people of any age, most often this is seen in the children under age 5 years and in pregnant women. People with this disease cannot see at night or in dim light. Some of its symptoms are: difficulty to see at night or even at dim light; suffering from diarrhea or measles; dryness, blindness or protrusion of cornea, etc.

If it is not cured early, the children may completely lose their sight.

Preventive Measures

- a. Children must be fed the food items with vitamin A.
- b. Eyes must be cared or protected daily.
- c. Children must be provided with green vegetables, yellowish fruits, milk, curd, egg, liver, etc.
- d. They must be breast fed regularly for two years from the birth.
- e. Children above 6 months of age must be given vitamin A capsule at the gap of 6 months.
- f. We should enhance public awareness towards marasmus through health education.

4. Scurvy

Scurvy is a disease caused by deficiency of vitamin C in the body. This disease causes swollen and infected gums. Its symptoms include: continuous bleeding in case of injuries or wounds, appearance of red spots in the body, frequent flu, etc.

Preventive Measures

- a. We should keep ourselves clean and healthy.
- b. We should take food items that include vitamin C such as amla (hog plum), guava, orange, etc. regularly.
- c. We should brush regularly and flush out the things trapped in the gums.
- d. We should take advice from the doctor.
- e. We should enhance public awareness through health education.

Ways to Manage Balanced Diet from Locally Available Food Items

The food items available in our locality are: rice, corn, wheat, millet, buck wheat, beans, soybeans, yellow lentil, potato, radish, green vegetables and fruits. These food items can be divided into three categories based on their function in the body as:

- i. Energy giving items: Food items that provide energy
- ii. Growth items: Food items that assist growth
- iii. Protecting items: Food items that assist building immunity power in the body

Balanced diet is the food that includes appropriate amount of the food items from the above mentioned categories. If we take sufficient amount of balanced diet, then we get almost all the required nutrients for our body. We have to take the locally available food items in the balanced way. Due to the lack of knowledge about it, people take imbalanced diet. For example, if we take only lentil with rice, then we cannot get the nutrients to protect our body. Similarly, if we take spinach or other vegetables with rice or roti, then we cannot get the nutrients that assist growth of our body.

Therefore, we can make balanced food that includes rice or rice made up of ground corn pieces (Chyakhla), wheat, millet, corn, lentil, dhido, beans and grains, green vegetables, fruits, etc. We get protein from milk and carbohydrate from potato. It may be difficult to include many types of food items in every single meal. Therefore, we can get all types of nutrients needed for our body if we take different types of food items in the morning, day or evening meals. So, we have to manage balanced diet taking those food items that are available at the local level.

Ways to Protect Nutrients while Cooking

Food items naturally contain nutrients but if we don't cook properly, they may be destroyed. Therefore, we have to be very much careful in order to protect the nutrients while cooking. The food should be covered or closed while cooking. We should not mix the cooked and uncooked food. The kitchen and store room at home must be safe and spacious. We should not over-peel potatoes and sweet potatoes. Food items should not be over-fried or oil-fried. Green vegetables such as spinach

should be washed before chopping into pieces. Soda must not be added in the food because it destroys the nutrients. Ghee should not be over-heated. The green vegetables should not be cut into smaller pieces.

Demerits of Processed Food

There is increasing use of processed or junk food items in and around our schools. Such items include noodles, potato chips, biscuits, sweets, dried meat or fruit dishes, dalmoth or bhujija, etc. Our health deteriorates if we consume such items in excess. In order to protect such items, the manufacturers use various types of chemicals. In a long run, food items gradually lose nutrients. This ultimately worsens our health instead of supplying necessary nutrients to our body. Though they taste good and sweet, the necessary vitamins, proteins or nutrients in such items may be destroyed. Use of new types of colours and uncleanliness in the industries causes direct harm in human health. The disadvantages of processed food can be listed as below.

- a. Such food items cannot supply all necessary nutrients to our body.
- b. Inedible items such as colours, yeast, tasting powder, etc. are mixed in the processed foods that are harmful to human health.
- c. The readymade food items may not have expiry date on their cover so they may be harmful after a long time.
- d. Due to the consumption of such food items, we may suffer from the diseases such as high blood pressure, jaundice, diarrhea, etc.
- e. This may badly affect physical and mental development of children and also weaken their memory power.
- f. Such readymade food items may be of low quality.

Activity

Classify the food items that are found around your locality into three categories as those that assist growth, those that provide energy and those that protect the body.

Summary

- Insufficiency in the supply of nutrients needed for the body is known as malnutrition.
- If the food items available in the local context are properly collected and utilized, this becomes a balanced diet.
- We can get different nutrients in locally available foods as well.
- A kind of disorder that appears in children due to deficiency of carbohydrates and protein in the body is called Marasmus.
- The disease caused by deficiency of vitamin C is Scurvy. It causes swollen and infected gums.
- Anaemia is a kind of disease caused by deficiency of blood in the body due to various reasons.
- We have to be careful on the ways of protecting natural nutrients while preparing food.

Exercises

1. Give short answers to the following questions.
 - a. What is malnutrition?
 - b. Make a list of nutrients necessary for our body.
 - c. What causes marasmus?
 - d. Describe the ways to protect the nutrients.
 - e. Write any four ways to avoid scurvy.
 - f. Make a list of the symptoms of anaemia.
 - g. What are the harms of processed/ready-made food items? Prepare a list of such harms.
2. **Give very short answer to the following questions.**
 - a. Write the names of any two food items that assist to protect the body by increasing immunity.
 - b. Deficiency of which vitamin causes wasting?
 - c. Which disease causes inability to see in dim light?
 - d. Write one of the ways to protect nutrients during cooking.

Unit 4

Disease

Introduction

The physiological condition in which the body organs or system do not function properly and uneasiness emerges in the body is called a disease. It is affected by the location, food habits, cleanliness, personal behaviour and religious or cultural environment.

A disease is caused by unhealthy behaviour, polluted environment, deficiency of nutrients and bacterial or viral or parasitic infection in the body. The diseases are classified into two types. They are: communicable disease and non-communicable diseases.

Communicable Disease

The disease that can transmit/communicate from one person or animal to the other by means of various germs is known as a communicable disease.

Preventive measures of communicable diseases

a. Use of Safe Drinking Water

Water is used in everyday activities. It is used for drinking as well. If the water we drink is not pure or safe, the diseases such as diarrhea, whines, dysentery, cholera, etc. can easily infect our body. Clean water is needed for taking bath, washing, cooking, drinking, cleaning, etc.

b. Safe and Balance Diet

Food that is consumed daily must be fresh, hygienic and balanced. Such type of food helps to develop our physical, mental, social and emotional aspects. Lack of nutritious food may cause various diseases such as marasmus, wasting, night blindness, anaemia, etc. Therefore, in order to be safe from various communicable diseases and malnutrition, the food should consist of all nutrients and it should also be clean, fresh and hygienic.

c. Cleanliness

We cannot be healthy in absence of personal and environmental cleanliness. Due to insufficient cleanliness, people suffer from various communicable diseases such as diarrhea, dysentery, cholera, etc. We have to be very much aware of our own personal and environmental cleanliness. We have to make our surroundings and sources of water clean.



d. Immunization

Our body has capacity to fight against causative agents of diseases. This is called immunity. Diseases attack in case of insufficiency of nutrients, ignorance towards diseases, lack of environmental cleanliness and lack of timely vaccination as required. Therefore, the vaccination should be as mentioned in the table given below.

Name of vaccine	Name of disease	Time	Quantity/dose	Vaccination Dose interval
B.C.G	Tuberculosis	Within one year from birth	Once	-
D.P.T	Diphtheria Pertussis Tetanus	Within six weeks to one year from birth	Three times	With the interval of four weeks from the first vaccination.

Polio drops	Polio	Within six weeks to one year from birth	Three times	Within the interval of minimum four weeks from the first vaccination
Measles	Measles	Within 9 months to one year	Once	-
T.T.	Tetanus	For pregnant and other women aged between 15 to 44 years.	Five times	The second after four weeks from the first, then next after six months, the third after one year and last one after next one year.

e. Use of Toilet and Formation of Open-Defecation Free Community

The main source of communicable diseases is human defecation. If we defecate in the open places, the bacteria as well as parasites mix in the soil, water and air which finally pollute the environment. Therefore, in order to manage stool and urine properly, we have to use the toilets compulsorily.

Some Communicable Diseases

1. Meningitis

The brain and spinal cord are covered by a type of membrane which is called meninges. The inflammation in the same meninges is known as meningitis. Although, this disease can be found in people of all ages, it communicates very quickly among children. This disease is caused by the bacterium named *Neisseria meningitidis*. This disease may communicate through kissing, sexual intercourse, or frequent attachment with the patient. Some of the symptoms of this disease are: high fever, vomiting, neck stiffness, headache, etc. Similarly, the patient may shiver, faint and in the case of babies under 18 months, swelling of palate may be the symptom.

Preventive Measures

- a. Keep the patient in a separate room (Isolate the patient).

- b. Use the clothes, utensils, etc. used by patient after washing them with soap properly.
- c. Dispose or bury the things used by the patient.
- d. Visit health centers for check-ups immediately.
- e. Have immunization against this disease and aware people to prevent them from this disease.

2. Encephalitis

Encephalitis is also called zoonotic disease. This disease appears most often in the Terai region of Nepal during summer. This disease is caused by J.E virus that falls under the class of B. Arbo virus. Some of the symptoms of this disease are: sudden high fever, headache, sore and painful throat, vomiting, fainting, loss of memory and consciousness, paralysis of the muscles of hands and legs, etc. At first, this disease spreads in animals and birds. Later, this is communicated to humans by a type of female mosquito that belongs to culex. Culicine bite causes swelling of the membrane in the brain. The incubation period of this disease ranges from 5 to 15 days.

Preventive measures

- a. Go for immediate treatment as soon as the symptoms are noticed.
- b. Use mosquito nets or keep nets in the windows in order to protect yourself from the mosquitos.
- c. Keep pig farms away from home and manage them properly.
- d. Use vaccines against this disease.

Activity

What are your family members or neighbours doing in order to avoid mosquito bites? Make a list of the activities that you have seen or done and share it with friends.

3. Hepatitis-B

Hepatitis –B can transfer from one person to another through air, blood, sexual intercourse, sharing syringes of drugs, remains of patient’s food, utensils used by patients, etc. This disease affects the patient’s liver and leads to death. Most often this disease affects the people between 20 to 40 year of age. The incubation period of this disease ranges from 6 weeks to 6 months.

Symptoms

- a. Loss of appetite and vomiting,
- b. Weakness in the body, tiredness and fatigue,
- c. Yellowing of organs such as nails, eyes, skin, etc,
- d. Swelling of liver and abdominal pain just below the right part of the chest,
- e. Liver cancer that may lead the patient to death,

Preventive measures

- a. Blood transfusion only after proper examination.
- b. Use of patient’s belongings only after cleaning them.
- c. Reuse equipment or syringes only after sterilization.
- d. Vaccination against hepatitis in time.
- e. No consumption of tobacco, alcohol, and drugs. In case of any doubt of the disease, visit health centers for check-up.

4. HIV and AIDS

The immunity power of the body is destroyed once a virus named Human Immuno-deficiency Virus (HIV) enters the body. Various diseases may affect due to this reason. This condition is known as AIDS (Acquired Immuno-deficiency Syndrome). Till now, the medicine for the complete treatment of HIV or AIDS has not been invented.

There are three stages of this disease. They are: HIV infection, HIV positive and AIDS. No symptoms are found during the early period of HIV infection. Gradually, the symptoms are visible. Eventually, the disease cannot be treated and the patient may die.

Modes of transmission

- a. Through unsafe sexual intercourse with HIV infected person
- b. Through the use of unsterilized syringes and other equipment
- c. From a HIV infected mother to her baby
- d. Through the transfusion of blood or transplantation of any other organ of HIV infected person to other healthy persons

Major Symptoms

- a. Weight loss of more than 10% in a month
- b. Diarrhea for three weeks or more
- c. Recurring fever for more than one month
- d. Delay in healing wounds or injuries
- e. Genital Herpes (Janaikhatira)

Preventive measures

- a. We should avoid unsafe sexual intercourse.
- b. Blood transfusion and organs transplantation should be done only after blood test.
- c. We should avoid conception by HIV infected women.
- d. We should use only sterilized syringes and other equipment.
- e. We should avoid drug addiction/substance abuse.

Some Non-communicable diseases

1. Asthma

A chronic disease that causes difficulty in respiration is known as asthma. The dust, smog, polluted air, etc. cause difficulty in respiration. Insufficiency of oxygen level in the body causes rapid and labored respiration. If we can live a healthy personal life, we can prevent and control this disease.

Causes

- a. Due to allergy to various things,
- b. Consumption of drugs and tobacco,
- c. Exposure to cold air and mental stress ,
- d. Cardiac problems,
- e. Cold or frosty environment,
- f. Dust, smoke, dirt, etc.

Symptoms

- a. Cough, shortness of breathing and difficulty in breathing,
- b. Rapid and labored respiration while walking or working,
- c. Feeling of tightened chest and rapid heartbeat,
- d. Physical weakness.

Preventive Measures

- a. Being away from cold environment, cold food and smog,
- b. Identifying and avoiding the things that are allergic to the body,
- c. Early treatment of common cold (flu), pneumonia, tuberculosis, etc.
- d. Avoiding consumption of tobacco, alcohol, and drugs,
- e. Reducing mental stress and increasing public awareness towards asthma.
- f. Stay free from dirt, smoke and dust.

2. Stones

Stones may be formed in various internal organs of our body such as kidneys, gall bladder, urinary bladder, etc. This is one of the health problems and is known as stones. The stones are formed by excessive concentration of cholesterol, calcium and salt in our body.

Causes

Dehydration and consumption of excessively spicy food items are the primary causes of stones.

Symptoms

- a. Loss of appetite and indigestion,
- b. Blockage in the urinary tract and bile duct,
- c. Swelling and pain in the place where stones are formed,

Preventive Measures

- a. Reduction in the consumption of salt, oil and spicy food,
- b. Drinking sufficient amount of water,
- c. Regular physical exercise ,
- d. Immediate treatment of stones after it is suspected or diagnosed.

3. Cancer

Cancer is the disease condition of excessive or unnecessary growth of cells in the body. This disease most often attacks people above 40 years of age. It can be treated if it is diagnosed in its early stage.

Causes

- a. Excessive consumption of tobacco, alcohol and drugs,
- b. Polluted environment,
- c. Consumption of oily and spicy food,
- d. Lack of timely treatment of wounds or injuries,
- e. Due to the effects of heredity, poisonous rays and adulteration.

Symptoms

- a. Appearance or formation of lumps in various parts of the body,

- b. Wounds or injuries that won't heal for long time
- c. Change in the colour and size of the moles or warts
- d. Bleeding even after menopause
- e. Change in the voice and hoarseness
- f. Appearance of blood in the stool, weight loss without any reason and weakness

Preventive Measures

- a. We should avoid consumption of food items grown or protected using chemicals.
- b. We should avoid taking tobacco, alcohol, and drugs.
- c. We should go for immediate check-up in case of the appearance of lumps and any other wounds or injuries in the body.
- d. We should increase public awareness against cancer.

4. Diabetes

Diabetes is a disease caused by increment of blood glucose due to deficiency of insulin secretion by pancreas gland in the body. This is also known as sugar disease. This disease most often attacks the obese people and the people not have necessary physical exercise. It is seen in the people above 40/45 years of age. It can also be seen in any age if there is malfunctioning of pancreas.

Causes

The main causes of diabetes include heredity/genetics, passive or inactive life style, obesity, functional inability of the pancreas, etc. People having insufficient physical labour, mental stress and anxiety suffer from this disease. Malnutrition may also be one of the causes of this disease.

Symptoms

- a. Increased thirst and hunger
- b. Gradual loss of weight

- c. Frequent urination,
- d. Blurred vision,
- e. Increment of glucose level in blood,
- f. Tingling in the hands, legs and the whole body, sometimes leading the patient to be faint .

Preventive Measures

- a. Low consumption of oily, sweet and spicy food,
- b. Regular physical exercise,
- c. Early treatment of the wounds or injuries ,
- d. Avoidance of mental stress,
- e. Immediate treatment after diagnosis

5. Heart Diseases

i. Heart Attack

Heart attack is caused by the blockage of blood circulation due to narrowing or blocking of coronary arteries in our body. If there is formation of fat in the coronary artery or blood clotting in the veins of the heart then this causes heart attack. This disease mostly found in people above 40 years of age.

Causes

Modern life style, mental stress, diabetes, high blood pressure, excessive smoking, alcoholism, obesity, genetics, etc. are the causes of heart attack.

Symptoms

- a. Pain in the middle of the chest and excessive cold sweating,
- b. Difficulty in breathing,
- c. Sudden increase in blood pressure and thirst,
- d. Rapid and difficult respiration, nausea and unsteady heart,
- e. Pale, rubbernecking eyes and faint.

Preventive Measures

- a. Regular physical exercise,
- b. Controlling weight,
- c. Avoiding stress,
- d. Increasing the consumption of green vegetables and fruits,
- e. Regular health check-up to confirm that the pressure is at normal level,.
- f. By not smoking.

ii. Hyper Tension

The maximum arterial pressure that occurs during contraction of the left ventricle of the heart is known as systolic pressure and the minimum pressure that occurs during ventricular diastole is known as diastolic pressure. The proportion of systolic and diastolic pressure remaining 120/80 mm Hg is assumed as normal pressure. The pressure of more than this range is taken as high hyper tension.

Causes

- a. High consumption of salt,
- b. High consumption of oily substances,
- c. Smoking, alcoholism and drug addition,
- d. Obesity, increased weight,
- e. Living unhealthy life style,
- f. Increased mental stress,
- g. Genetics.

Symptoms

- a. Headache, chest pain and dizziness
- b. Sleeplessness and high temper
- c. Sensation of unsteady or quaking heart and sweating

Preventive Measures

- a. We should do regular physical exercise.
- b. We should decrease obesity.

- c. We should avoid consumption of tobacco, alcohol and drugs.
- d. We should increase consumption of green vegetables and fruits.
- e. We should decrease consumption of salt.
- f. We should go for immediate treatment after appearance of the symptoms.

iii. Rheumatic Heart Disease

Among various heart diseases, rheumatic heart disease is one of them. This disease is frequently found in the children between 3 to 15 years of age. In the beginning of this disease, tonsillitis and pharyngitis may be observed. The patient may suffer from fever after one to four weeks of frequent pain in the throat. This is known as rheumatic fever. At this time, along with the fever, the patient may feel joint pain and swelling as well. This disease is caused by bacteria called Beta hemolytic streptococcus. Group - 'A' more than 50% of the children suffering from rheumatic fever have problems in their valves in the heart so that this disease is called rheumatic heart disease. The early symptoms of this disease include painful throat, loss of voice, fever, etc. We have to consult for treatment immediately after these symptoms.

Activity

What changes do we need to bring in our daily activities and food habits in order to avoid heart related diseases? Discuss with your friends in your classroom.

Summary

A disease is a body condition in which a person becomes unable to carry out daily activities, feels unhealthy, and the body organs and systems cannot function properly. The diseases are of two types: communicable and non-communicable.

To keep ourselves away from the diseases, we have to pay special attention to our food habits, physical exercise, personal and environmental cleanliness, healthy behaviour, vaccination, etc.

The disease that can communicate to an individual through different means is called a communicable disease. For example, meningitis, encephalitis, hepatitis, HIV/ AIDS, etc.

The disease that emerges from the body itself due to various causes is known as non-communicable disease.

Exercises

1. Fill in the blanks.

- a. The main cause of meningitis is.....
- b.disease is caused by 'Group B Arbo' virus.
- c. High blood pressure is a disease related to.....
- d. The unnecessary growth of cells in the body is called
- e. cannot be diagnosed within some weeks or months the HIV enters the body.

2. Write one-word answer to the following questions.

- a. What is the main cause of HIV and AIDS?
- b. What is the name of the disease caused by increased level of glucose in our blood?
- c. What is the normal proportion of the systolic and diastolic blood pressure in our body?
- d. What is the health problem caused by formation of stone in kidney, gallbladder, urethra, urinary bladder, etc. in our body?
- e. What is the name of a chronic disease related to lungs that causes difficulty in respiration?
- f. What is the condition of the defects in the valves of the heart called?

3. Give short answer to the following questions.

- a. What are the symptoms of Hepatitis B?
- b. What are the causes of Cancer?

Unit 5

Adolescent Sexual and Reproductive Health

Responsibilities of Adolescents

According to World Health Organization (WHO), the persons belonging to the age between 10 to 19 years are adolescents. In this span, rapid changes in physical, mental, emotional and social aspects take place. This is the foundation stage for adulthood. The developments in this stage can be taken as the bases for prediction of personality of an individual in the future. Therefore, it is a very important stage in life. In this stage, a person is to be responsible for his/her own family, society and the nation along with his/her personal responsibilities.

1. Personal Responsibilities

- a. Working hard in study or learning,
- b. Taking care of self-health and hygiene,
- c. Avoiding addiction and engaging oneself in creative activities,
- d. Following guidance and advice of parents or guardians while carrying out any new task.

2. Family Responsibilities

- a. Carrying out tasks following the advice and guidance of the family.
- b. Taking care of health of the family members and creating peaceful and cooperative family environment.
- c. Encouraging for healthy family health and discouraging superstitions .
- d. Assisting the parents in their household and professional activities.
- e. Respecting elders and extending love to the younger.
- f. Making your parents feel proud of you.

3. Responsibilities towards the society and the nation

- a. Adopting healthy behaviour and assisting others to do so
- b. Respecting the social norms and values,
- c. Participating in the social and cultural activities ,
- d. Raising awareness against superstitions that are rampant in the society,
- e. Playing leadership roles to discourage social evils,
- f. Contributing to the formation of a healthy and peaceful society,
- g. Participating voluntarily in social services ,
- h. Forming bases for the nation to be proud of you .

Safe Sexual Behaviour

During adolescence, there is rapid growth of sex organs due to secretion of various hormones. Naturally, the sex desire increases due to these hormones. But it is important to manage this desire. The desire and the activities related to sex are collectively called sexual behaviour. If there is safe sexual behaviour, the health and the social reputation will not be damaged. People who are unable to adopt safe sexual behaviour become the victim of life-threatening diseases such as AIDS. Some of the people have died due to unsafe abortion and some others have been living in the prison because of violating the law.

Measures for Safe Sexual Behaviour

(Unsafe sexual behaviour means having sex with more than one, premature sex and the sex having without using condom.)

- a. Developing tolerance and mutual understanding,
- b. Having sexual relation only with a trusted sex partner,
- c. Using condoms properly while having sexual intercourse,
- d. Avoiding sexual relation with the people infected with sexually transmitted, diseases and undergoing immediate treatment in case of such diseases,
- e. Appreciating the natural changes visible in the sex organs,
- f. Avoiding sexual relation that are against the established social norms and values

Reproductive Health

Reproduction refers to the process of producing children. Reproductive health is a state of physical, emotional, mental and social well-being in relation to reproductive system, reproductive organs and their functions. In other words, it includes all the aspects of health related to reproductive system and its functions. Therefore, reproductive health deals with ability to live a safe sexual life, ability to make reproduction, and freedom to decide when and how to do so.

Concept of Safe Abortion

The abortion that is carried out by a licensed health practitioner in the licensed organization taking consent of the pregnant woman is known as safe abortion. Sometimes, there may be unwanted pregnancy. In such cases, the pregnancy is to be terminated which we call abortion. Safe abortion service procedure (2060) mentions that abortion can be done in case the pregnancy is harmful to the pregnant woman's physical and mental health and the fetus is suffering from a severely debilitating or fatal deformity as certified by an expert physician. The abortion of the fetus up to 12 weeks of gestation and up to 18 weeks of gestation in case of rape or incest can be done without recommendation from a physician. But it is good if the physician is consulted. Abortion can be done on request of the pregnant woman but in case the woman is unconscious or is below age 16, then consent must be taken from her parents.

Prohibition of Abortion

- a. Compelling a woman to abortion through cheating or forcing is strictly illegal and is prohibited.
- b. Abortion is not allowed after identification of sex of the fetus.
- c. Abortion is not allowed in any other case except in the condition or time as mentioned in the law.

Risks of Unsafe Abortion

Nepal Government has made a legal provision for safe abortion. However, being

unaware of this provision many women go for an unsafe abortion. This may claim their lives too. They have been facing different problems due to abortion without matured advice from the physicians. Their health may further be deteriorated due to carelessness even after abortion. The following are the problems of unsafe abortion.

- a. Incomplete abortion resulting excessive bleeding may cause threat to life
- b. Infection and injury in the uterus may invite surgical removal of uterus,
- c. Probability of infertility,
- d. Prolonged lower abdominal pain,
- e. Death

Methods of Safe Abortion

- a. Safe abortion can be done through medical abortion (using medicines) for the fetus of 9 weeks (63 days) or below.
- b. Safe abortion can be done through the use of abortion tools and instruments for the fetus of 12 weeks or below.

Concept of Birth Control, Methods and Tools

Fertilization refers to the process of formation of zygote through the combination of sperm of males and ovum of females. The process of preventing the formation of zygote is known as birth control. The couples control birth if they are not willing to have a baby.

Methods of Birth Control

1. Temporary Methods of Birth Control

a. Natural Methods

There is low probability of ovulation in the breast-feeding women. So, it may be safe having sexual intercourse during this time. Similarly, other natural methods include test of menstrual bleeding, withdrawal method, rhythm method, temperature test method, etc.

b. Artificial Methods

i. Implant

The health workers put two small, thin, flexible hormone capsules under the skin in the arm of the women. This hormone prevents fertilization by deactivating the ova. This works for five years once it is implanted. There are two types of implants on the basis of the time duration they function. They are: 3-year implant and 5-year implant.

ii. I.U.C.D. (Copper-T):

Inter Uterine Contraceptive Device (IUCD) is a small device made up of plastic and copper with the shape of English letter T. It is put in the uterus by health professionals. This device disables the meeting of spermatozoa with ovum and it prevents fertilization.

iii. Depo-Provera:

Depo-Provera is a contraceptive method for women. It's made of a hormone similar to progesterone. This is an injection, given to the females on arm or buttocks. This injection should be given once in every 3 months. It stops the meeting of ovum and spermatozoa.

iv. Pills:

Pills is the birth control medicine in the form of tablets that women take one pill per day. This type of medicine inhibits ovulation and prevents fertilization.

v. Condom:

Condom is a kind of soft plastic sac. This is of different shapes for both males and females. The condoms used by males covering their penis during sexual intercourse prevent separate semen from entering the uterus so that fertilization is not possible. Similarly, the female condom is kept in the vagina and it bars the sperms from meeting egg and the fertilization is prevented. A female condom is called Femidom.

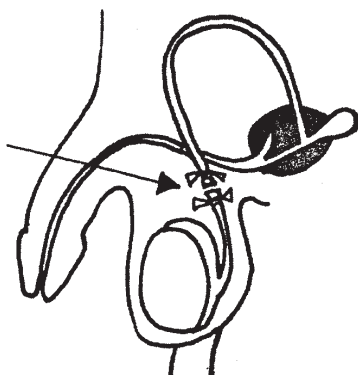
Emergency Contraception

In case of emergency conception, an emergency birth control method may be adopted. This can be done by taking the medicine named E-con or I-pill within 72 hours of sexual intercourse. These types of medicines should not be used frequently.

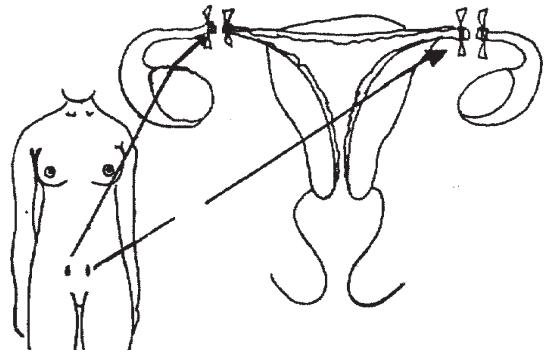
2. Permanent methods of birth control

a. Vasectomy

In vasectomy, the vas deferens is cut and tied in order to block the sperms coming out and mixing in semen. In doing so, the sperms cannot enter the uterus so that conception cannot take place. This is the permanent method used for males only.



Vasectomy



Mini-lap

b. Mini-lap and Laparoscopy

The eggs developed in the ovary arrive at the uterus through the fallopian tube. In minilap, the fallopian tube is cut but, in laparoscopy, it is tightly tied. This method blocks the eggs to pass into the uterus and conception is avoided. This is permanent birth control method for females.

Reproductive Health Services and Facilities

The services related to the promotion or enhancement of reproductive health are called reproductive health services. Every government provides this type of service to its people. The non-governmental organizations also provide these services. The governments and non-governmental organizations provide the following type of reproductive health services and facilities.

- a. Care for pregnant women,
- b. Counseling about birth control and distribution of contraceptives,
- c. Control and treatment of sexually transmitted diseases,
- d. Legal rights for safe abortion and availability of the services for this.
- e. Maternity services and safe motherhood services,
- f. Management of reproductive health education,
- g. Measures for emergency birth control.

Introduction to Comprehensive Sexuality Education, its Importance and scope

Sexuality includes opinions, values, norms, attitudes and behaviour related to sex. Sex education refers to the process of making logical change in the existing knowledge, attitudes, skills and behaviour towards sexuality. The main aim of sex education is to enable people for living physically, mentally, emotionally and socially healthy sex life. So this education aims at advocating on youth-friendly health service, safe sexual behaviour, safe motherhood and respecting to the rights for reproduction and its promotion.

Importance of Comprehensive Sexuality Education

- a. It provides positive attitude, useful knowledge and skills
- b. It provides information related to sex and rights to reproduction.
- c. It develops awareness against gender violence
- d. It helps to find out the ways to strengthen interpersonal relations and the skills necessary for it.
- e. It addresses the queries and problems related to sexuality.
- f. It contributes to the wider nation building by helping to maintain personal health, family health and community health as well.

Aspects of Sex Education

1. Sex and reproductive health:

The comprehensive sexuality education attempts to assist each individual maintain healthy sexual and reproductive sexual behaviour. It informs the people about healthy conception, birth control, safe abortion, and preventive measures from sexually transmitted diseases.

2. Gender

Gender refers to the roles and behaviour decided socially and culturally for both males and females. Various measures are adopted in order to avoid gender based violence.

3. Violence

Violence refers to the condition in which a person behaves making physical and mental offence to the other person.

4. Sex right of each citizen

Every individual has the right to make gender identity based on his/her willingness. Everyone can identify as being male, female or third gender. So the exercise of the rights to make sex identification, its protection and promotion belong to the domains of this education.

5. Recreation and entertainment

Every individual is free to take the joy through sex. All the ways including sexual intercourse in order to enjoy sexually fall under this domain.

6. Diversity

Every individual is different. Such differences may be physical, financial, religious, cultural, etc. Similarly, they may be males, females or third gender.

7. Relation

Everyone has the right to establish familial and personal relationship with any other person. We have to avoid conflict amongst ourselves. There must be mutual respect in order to make the relations long lasting.

Activity

What are the ways of adopting various methods of birth control, their advantages and disadvantages? Discuss in your class

Summary

- According to WHO, people with the age range from 10 to 19 years are called adolescents and this span is adolescence. The adolescents have a lot of responsibilities to their family, society and the whole nation along with their own personal responsibilities.
- The abortion that is carried out by a licensed health practitioner in the licensed organization taking consent of the pregnant woman is known as safe abortion.
- Sexuality includes opinions, values, norms, attitudes and behaviour related to sex. Sexuality education refers to the process of making logical change in the existing knowledge, attitudes, skills and behaviour towards sexuality.

Exercises

1. Fill in the blanks.

- Maintaining personal health care and hygiene is of the adolescents.
- No one is obliged to make by threatening, fear or by any other forceful means.
- We can prevent conception by taking within 72 hours of unsafe sexual intercourse.

- d. Minilab and are the permanent birth control methods for females.

2. Give short answer to the following questions.

- a. Make a list of the responsibilities of the adolescents.
- b. What are the indicators of safe sexual behaviour?
- c. State the conditions that disallow abortion?
- d. What are the health hazards caused by unsafe abortion?
- e. What is the importance of sex education?
- f. Which age group is known as adolescence?

Unit 6

Drugs, Alcohol and Tobacco

Drugs

The substances which affect human sensitivity, feelings and psychology/sentiment spoiling the ability to understand, memorize and think are called drugs. Cannabis, marijuana, bhang, dhatura, heroine, cocaine etc. are the examples of drugs. Drug addiction is the state in which the individuals form habit of using drugs by some reasons and cannot get rid of that habit. The drug when inhaled, injected, smoked, consumed absorbed via a patch on the skin or dissolved under tongue changes physiological or psychological or both functioning of the body temporarily

The major causes of using drugs in Nepal are religious superstitions, bad company, socio-cultural rituals, modernization, influence of advertisements, imitation of the elders in the society etc.

Various physical, mental, social and emotional problems can be seen in individuals due to the regular use of drugs. It also affects various parts of the human body.

Effects of Drug Consumption

- a. Lack of appetite, physical weakness, weight loss and gradual thinness.
- b. Contract of diseases such as Tuberculosis(TB), Jaundice, Pneumonia, etc.
- c. Increment of social crimes such as theft, dacoits and robbery in the society.

Preventive Measures of Drug Addiction

- a. Avoiding bad company.
- b. Attracting the children towards sports, reading newspapers and recreational activities during their leisure time.
- c. Banning/ prohibiting the advertisement of drugs.
- d. Organizing public awareness programs against the drugs in the society.
- e. Punishing the drug- traffickers according to the law.

Alcoholism

The consumption of liquid substances such as 'jaand', 'raksi', brandy, whisky, beer, etc. is called alcoholism. The alcoholic substances have been excessively used during religious and social functions, festivals and various recreational activities in Nepal.

Immediate Effects of Alcoholism

The major immediate effects of alcoholism are loss of body control, vomiting, breathe smelling, reddish eyes, babbling and unclear speech, quick temper, etc. Similarly, indigestion, muscular weakness, involvement of users in quarrels/ fights due to quick stimulation of alcohol in the body are other immediate effects of alcoholism.

Long –term Effects of Alcoholism

- a. Consumption of alcohol destroys the sensitive organs such as lungs, liver, kidneys, etc.
- b. Reduces the fertility power of men and women
- c. Causes various diseases such as T.B.(Tuberculosis), Cancer, ulcer, etc.
- d. Causes trembling of limbs (hands and legs), rapid heartbeats
- e. Loss of social respect of individuals
- f. Loss of memory

Preventive Measures of Alcoholism

- a. We should avoid company with the drunkards / friends having bad habit of alcohol consumption.
- b. The production, distribution and advertisement of wine should be banned/ prohibited.
- c. Public awareness programs should be conducted against alcoholism.
- d. The use of alcohol in various festivals/celebrations should be discouraged.

Smoking

The consumption/ intake of tobacco in the form of smoke, chewing, inhaling or as any form is called smoking. Smoking includes cigarettes, 'bindi', surti (tobacco leaf), 'tambaku', kankad, etc. Nicotine, Tar, Ammonia furfural, carbon-monoxide are the chief harmful chemicals among 4000 types of elements found in tobacco. The

nicotine found in the tobacco and cigarettes is the main element to affect human health. It creates addiction.

Effects of Smoking

Immediate Effects

- a. Coughs, chest pain, bad breath.
- b. Causes short breathing due to the contraction of alveoli in the lungs.
- c. Affects the heart, tongue, throat and respiratory system.
- d. Weakens heart by increasing the pace of heartbeat.
- e. Causes gastritis, indigestion, losing appetite and ulcer by affecting the digestive system.
- f. Causes irregular blood circulation in the body affecting the arteries and blood vessels.
- g. Causes the loss of interest and stamina.

Long-term Effects

- a. Causes coughing and asthma affecting the lungs.
- b. May cause cancer in different parts of respiratory system / the body.
- c. Causes intestinal and heart related diseases as well as leads to weak eye sight.
- d. Gradual change of the lips, teeth and skin into black color due to harmful chemicals.
- e. Causes severe headache and loss of memory power.
- f. Decreases social respect of individuals and causes deterioration of economic condition of the family.

Preventive Measures

- a. We should conduct public awareness campaigns against the bad effects of smoking and the use of tobacco.
- b. The production, distribution and consumption of tobacco / smoking should be banned.
- c. Farmers producing tobacco should be encouraged towards the production of other crops.
- d. Our children should be eyed well and kept away from the company of smokers.

Activities

There may be the consumption of drugs, alcohol and tobacco around you in your locality. Discuss the activities you need to do to prevent and control such bad practices.

Summary

- The substances which affect human sensitivity, feelings and psychology/ sentiment spoiling the abilities of understanding, memorizing and thinking are called drugs.
- The consumption of liquid substance that stimulates us by affecting our nervous system is called alcoholism.
- The consumption of tobacco in the form of smoke chewed or inhaled is called smoking.

Exercise

1. Put a tick (✓) for the correct and a cross (✕) for the incorrect sentences.
 - a. Regular smoking can cause lung cancer. ()
 - b. Children should not drink a lot of tea and coffee. ()
 - c. Smoking is injurious to health. ()
 - d. We can have alcohol if our friends request us. ()
 - e. Everybody hates the person who uses drugs. ()
2. **Answer the following questions.**
 - a. What is meant by drugs?
 - b. What are the effects of drug consumption in our health?
 - c. What are the preventive measures of smoking?
 - d. What is alcoholism?
 - e. Write any five preventive measures of alcoholism.

Unit 7

Environmental Health

Environment refers to/ can be defined as the physical, biological, chemical and social aspects around us. Environment consists of air, water, land, rivers, forests, etc. Our health is affected if such elements around us get polluted. The environment needs to be neat and clean (fresh) and well managed for our good health. Environmental health, therefore, is the relation between environment and our health.

Water-borne Diseases

The contamination of unwanted and harmful elements in the water which reduce its quality is called water pollution. Our health is affected if we use polluted water. Sometimes, visibly clean water may also contain harmful bacteria and germs that cause various diseases. Water may get polluted when human excreta and other dirty substances get mixed to it. Diseases like cholera, diarrhea, dysentery, typhoid, etc. are transmitted through the polluted water.

Preventive Measures of Waterborne Diseases

- a. We should drink water after boiling, filtering and making germ free using chemical methods.
- b. The resources of drinking water should be kept safe.
- c. Cattle grazing and disposing of waste materials should be forbidden in the sources of drinking water.
- d. Human excreta should be disposed only in the toilets.
- e. Food items should be consumed after cleaning them properly.

Methods of Water Purification

Water becomes polluted when the waste materials disposed by us get mixed to it. Taking a bath and washing clothes also cause water pollution. Water can be polluted not only by human and animal activities but also by some natural processes. The

water of our taps and well may become undrinkable due to mixture of clay and various micro-organisms may spread in it. Such type of contaminated water can be purified adopting the following methods.

1. Boiling

The water can contain harmful micro – organisms though it looks neat and clean. In such a condition, boiling method can make it drinkable.

2. Filtering

Polluted water can be made drinkable by filtering it. We can use water filtration method easily at home as well. Filtration can make water look clean but household filter cannot make it germs free. Water thus filtered can be drinkable only after boiling it.

3. Chemical Method

While purifying water through chemical method, some drops of chemical are mixed in the water in order to kill micro- organisms contained in it. Such chemicals are used to kill the germs that cause cholera, dysentery, typhoid and diarrhea. If we mix two drops of chlorine or iodine in one liter of water, the water becomes germs-free after thirty minutes. Water purified through this method should not be used by pregnant woman. Water may become poisonous if it contains more amount of chlorine and iodine. Therefore, we should be careful about the amount of chemical while applying this method.

4. SODIS Method (Solar Water disinfection System)

Even the visibly clean water may contain harmful micro – organisms. Such water can be made safe and drinkable through SODIS method. The ways of purifying water through this method are as follows:

- a. First of all, wash colorless plastic bottles properly.
- b. Fill water in such bottles, tighten the lids and shake well.
- c. Then, put the bottle in the sun for six hours keeping at the temperature of minimum 45°C.
- d. Drink water directly pouring into a clean glass.



(a)



(b)



(c)



(d)

Solid Waste Management

Waste materials are produced from the various things that we use in our daily life. Such waste materials around us pollute environment and directly affect our health. Therefore, these waste materials should be disposed in the proper place and managed well. The process of adopting the measures of reducing pollution from these waste materials around us is called solid waste management. The measures of managing non- decaying solid waste are as follows.

1. Reducing the Production of Solid Waste

Excessive use of any material or thing produces more solid waste which can cause environmental pollution. The quantity of the waste materials may be reduced by using the resources or materials at the required level. This can help save the resources as well. From the economic perspective, unnecessary expenses can also be reduced if the means and resources are used only at the required level. The environmental pollution can be reduced if we lessen the production of waste

materials. Therefore, we should reduce the production of non-degradable waste materials.

2. Re-using Method

Using the same means and resources time and again is called re-using method. Using the same non-decaying but reusable materials several times after cleaning them well helps to minimize the production of solid waste and reduces environmental pollution.

3. Recycling Method

If we cannot reuse the same materials after they become useless, other goods can be produced through the same. This process is known as recycling method. This also reduces the production of solid waste and helps control environmental pollution. Old and useless papers, plastic goods, goods made up of metals, etc. can be brought into use through recycling method.

Need and Importance of the Air

Living beings cannot survive without air. Plants and animals need oxygen for their respiration. The oxygen in the air reaches the lungs through respiration and is carried to the cells by the blood through the blood circulation process. When the cells get oxygen, they produce energy. This energy enables humans and animals to walk or do various physical activities. Due to the regular supply of oxygen in it, our brain works well.

The Causes of Air Pollution

The decrease in the quality of the air due to the mixture of biological and non-biological substances as a result of natural and human activities is called air pollution. The major causes of air pollution are as follows:

- a. Mixing up of dust, dirt and sand in the air due to blowing wind or storm
- b. Mixing up of the natural gases in the air which are produced from beneath the surface of the earth
- c. When the smoke produced from the industries, factories and vehicles is mixed in the air

- d. When the smoke from burning things mixes in the air
- e. When the bad smell produced from the rotten things mixes in the air
- f. The spread of germ and bacteria in the air
- g. If we spray insecticides/ pesticides in the room, house or field, the air becomes polluted

Airborne Diseases

The polluted air contains various germs and viruses. Air carries such germs and viruses from place to place. Diseases spread from person to persons when such germs and viruses transmit from the sick person to the healthy ones through respiration. Similarly, such diseases can be transmitted through sputum, saliva, nasal discharge/mucus, clothing, etc. of the infected person. Respiratory diseases such as TB (Tuberculosis), diphtheria, whooping cough, measles, etc. can transmit through air from person to persons.

Prevention of Air Pollution

If we check the causes of air pollution, we can prevent the air from being polluted. The following are the measures of preventing air pollution.

- a. The smoke that emits out of industries, factories and vehicles should be controlled.
- b. Forests should be conserved and greenery should be maintained.
- c. Alternative sources of energy should be encouraged.
- d. Old vehicles should be replaced by the new ones.
- e. Environment friendly technology should be used in the industries and factories to reduce the emission of smoke.
- f. Leakage of harmful chemicals in the air should be controlled.

Noise Pollution

The production of unwanted and loud sound from different sources is called noise. Various vehicles, industries and factories, the crowd of people, etc. are the major sources of noise. Excessive noise produced from various sources is called noise pollution.

Effects of Noise Pollution

- a. A person can turn deaf after losing hearing power if he / she stays long time in a noisy place.
- b. Noise pollution can imbalance the production of hormones in our body.
- c. It can keep people in stress.
- d. Physical disability can be seen in the fetus.

Prevention of Noise Pollution

- a. We should not stay in the noisy places for a long time.
- b. Silencers should be fixed at the noisy machines.
- c. We should control the crowds or should not create crowds.
- d. We should follow sound reducing measures while travelling by plane or other vehicles.
- e. Trees should be planted on both sides of the roads/streets.
- f. Legal provisions should be strongly enforced to control noise.
- g. Make the public aware of the noise pollution.

Activity

Write down how the solid waste is managed at your home and present it to your class.

Summary

- The contamination of unwanted and harmful elements in the water which reduce its quality is called water pollution.
- Water can be purified and made drinkable by boiling, filtering, adding chemicals and using sodis method.
- The management of non-degradable solid waste materials can be effective by reducing its production, reusing and recycling.

Exercise

1. Answer the following questions.

- a. Write down the preventive measures of waterborne diseases.
- b. What are the preventive measures of airborne diseases?
- c. Write down the measures of managing solid wastes.
- d. Explain the methods of purifying polluted water.
- e. What are the bad effects of noise pollution?
- f. Write down the causes of air pollution.
- g. Write down the safety measures against the effects of noise pollution.

2. Draw the pictures of different methods for purifying water.

Unit 8

Safety and First Aid

Safety Education

Safety education is the education given to the individuals to make them aware of different types of probable accidents and remain safe from those accidents. Accidents may take place at the places like home, school, playground, street, factories, etc. Therefore, safety education should be given to children to make them aware and safe from different accidents.

First Aid

Accidents may take place even if we are working carefully. If we cannot provide first aid to the casualties immediately, they may even lose their life. First aid refers to the treatment given to the injured person on the spot utilizing the locally available resources in order to improve the overall health condition of the victim and prevent from further injury, lessen the pain, console and save the victim from probable disability or death.

Safety Measures and First Aid

1. Sprain

Sprain is a painful injury in the joints of different parts of the body when the ligaments get over stretched or broken up due to forceful twists and stumbles. Sprain generally occurs at the joints of the elbow, wrist, knee, ankle, fingers, etc. Such joints may swell, ache severely and are difficult to move.

Safety Measures

- a. We should be very careful while doing household activities and playing games.
- b. We should be careful while walking on the bumpy way and should not jump roughly on such places.
- c. We should do sufficient warm up before playing games.

- d. We should not lift heavy loads beyond our physical strength.
- e. We should follow the rules of the games and be disciplined while playing games.

First Aid

- a. First of all, we should keep the injured person in the open place comfortably.
- b. Sprained parts of the body should not be moved.
- c. We should use a handkerchief or gauge to tie gently around the injured parts in order to avoid movement.
- d. The victim should be given plenty of liquids to drink.
- e. We should console the victim and take him / her to the nearest health center immediately.

2. Fracture

Fracture is the state in which a bone is broken into two or more pieces due to various causes such as falling from height, collision, hitting forcefully, etc. The bones may crack, break or intrude. Usually we see incidents of fracture of limbs in the school or in the playgrounds. The fractured parts may bleed, swell and look ugly as well. It is painful too. It is difficult to move such fractured parts.

Generally, fracture can be classified into two types - simple and complex. In simple fracture, a bone is injured and broken into two pieces without any visible wounds in the outer part of the body. Bones fractured in such a way can be quickly and easily treated. In complex type of fracture, the bones are broken into many pieces after an injury. In this type of fracture, the wounds can be seen in the outer part of the body. It is difficult to treat such wounds and it takes longer time to heal.

Safety Measures

- a. We should be very careful while climbing up the walls, roofs, trees, etc.
- b. We should put a fence/ bar at the stairs and balcony of the houses.
- c. We should follow traffic rules and regulations while travelling and crossing roads.
- d. We should instruct to play games only in the presence of an experienced coach.

- e. We should play games only after sufficient warm up exercises.

First Aid

- a. First of all, the injured person should be kept comfortably and should be consoled well.
- b. We should not let the fractured part of the body move.
- c. The bleeding in the fractured part must be stopped immediately.
- d. We should not pull or massage the fractured part of the body.
- e. We should take the injured person to the nearest health center as quickly as possible.

3. Electric Shock

Electric shock occurs by passage of electric current through our body when we touch the naked electric wire/short circuit at home, school or any other places. The person may die due to the internal effects of the electric shock on the heart even though we do not see any external wounds in the body.

Safety Measures

- a. We should not leave the bare electric wire here and there.
- b. We should not touch the broken wires and damaged bulbs carelessly.
- c. Our children should be made aware of the safety measures about the use of electric switches and plugs.
- d. We should not touch electric appliances with wet hands and bare feet.
- e. Electric wiring of the houses and the schools should be done only by the skilled/ trained electrician.
- f. We should have good knowledge of the electric appliances before using them.

First Aid

- a. First of all, we should turn off the main switch of the electricity.
- b. If the victim is still in contact with the bare wire, we should immediately

separate him/ her using dry wood or bamboo.

- c. Artificial respiration should be given to the victim if s/he has stopped breathing.
- d. Plenty of fluids should be given to the victim if s/he is conscious.
- e. The victim should be taken to the nearest health center as quickly as possible.

Activity

What roles should you play to provide first aid treatment to the victim of sprained legs while playing games or by other causes in your school? Discuss with your friends in the class.

4. Altitude Sickness

The health problem that occurs while climbing up the mountains or high hills due to the low level of oxygen is called altitude sickness. The level of oxygen decreases when we climb up the high altitude places from the sea level and it causes altitude sickness. This sickness causes difficulties in respiration. When the body does not get the required amount of oxygen, it slows down the process of generating energy in the body. As a result, the victim may also be unconscious/ faint.

Symptoms of Altitude Sickness

- a. The victim gets severe headache and feels difficulty for breathing. He/ she cannot walk due to immediate physical weakness.
- b. The victim may feel dizziness, vomiting or get fainted.

Safety Measures

- a. We should not climb up a higher mountain for a long time in a day.
- b. We should climb the high altitude with experienced and cooperative friends.
- c. Pregnant women should not climb up higher altitudes.
- d. We should take oxygen while climbing up the high hills and mountains.
- e. We should carry first -aid equipments and medicines while climbing up the hills and mountains.
- f. We should follow the advice of the experienced experts while travelling.

First Aid

- a. If one feels the symptoms of the altitude sickness, he/ she should continue the journey after taking rest for a while and if symptoms persist, s/he should immediately descend.
- b. We should make provision of oxygen to the victim as required.
- c. The victims should be consoled and given plenty of luke warm fluids to drink.
- d. The victims should be taken to the nearest health centre as quickly as possible.

5. Shock

It is the state in which individuals become senseless due to the lack of oxygen and nutrients supply in the kidneys, brain, heart as a result of low blood pressure. A person can be faint due to various reasons like extreme pain/ grief, excessive bleeding, terrifying things and events, excessive heat, mental and physical weakness, accidents, infection, etc. Similarly, poisonous food, drowning, dehydration, electric shock, etc. are other causes of shock.

The symptoms of shocks could be such as dizziness, nausea, excessive thirst, lack of body control, etc. Similarly symptoms like cold and clumsy limbs and nose, fast and unstable pulse, pale face, etc. may be observed during a shock.

Safety Measures

- a. We should prevent excessive bleeding from the wounds or injuries.
- b. We should avoid excessive physical labour.
- c. We should drink plenty of water.
- d. We should handle electrical appliances with care.
- e. We should stay in an open place where the fresh air can circulate easily.

First Aid

- a. The injured person should be kept warm and comfortable loosening the tight clothes.
- b. A cold water bandage should be put around the face and head of the victim.

- c. An artificial respiration should be given if the victim is not breathing or is feeling difficulty in breathing.
- d. The victim should be consoled and given plenty of liquid to drink after he/ she comes to consciousness.
- e. We should not let the victim stand up and walk immediately after his / her consciousness and he / she should be taken to the nearest health centre as soon as possible.

6. Snake Bite

When a poisonous snake bites us, the poison passes through our body. That poison affects our neurological, respiratory and circulatory system. When the poison enters our body, it circulates to all the parts of our body through the blood vessels. If the victim does not get treatment in time, he/ she may die immediately. Two small scars of teeth or a small wound can be seen at the snake bitten part of the body. Cobra, Krait, Viper, etc. are poisonous snakes. Usually, snakes are seen in the summer season or hot weather. Such types of snakes are found in large numbers in the Terai region of Nepal.

After about thirty minutes of poisonous snake bite, the symptoms like feeling dizziness, blurring speech, severe abdominal ache, diarrhea, etc. can be seen. Similarly, other symptoms such as swelling of lips and tongue, difficulty in opening eye lid, difficulty in breathing and swallowing, senseless tongue, etc. are observed.

Safety Measures

- a. We should not walk bare foot and tease the snakes.
- b. We should take a torch while walking in the dark.
- c. We should keep our surroundings neat and clean filling the ditches and holes.
- d. We should spray pesticides/ insecticides around our residence.

First Aid

- a. We should wash the wound well with soap and water.
- b. We should not let the affected part of the victim to move in order to prevent

the spread of poison in the body.

- c. We should tie a string above the wound so as not to let the poison spread to other parts of the body but it should be loosened for a while after every fifteen minutes.
- d. If the victim is conscious, we should give him/ her plenty of liquid to drink.
- e. We should take the victim to the health center as quickly as possible.

Summary

- Safety education refers to the education/ information which is given to the individuals to make them aware and safe from different types of probable accidents.
- First aid refers to the treatment given to the injured person on the spot utilizing the locally available resources in order to improve the health condition of the victim before the doctor arrives.
- Sprain can be defined as a painful injury in the joints of different parts of the body when the ligaments get over stretched or broken up due to forceful twists and stumbles.
- The process of passing electric current through our body when we touch the naked electric wire is called electric shock.
- Altitude sickness is the state in which the victim feels difficulties to breath because of the lack of oxygen in the lungs and the brain while travelling to the higher altitudes from the sea level.
- A snake bite is the state when our body parts cannot function properly due to the effect of poison in our respiratory and circulatory system after a poisonous snake bites us.

Exercise

1. Put a tick(✓) against the correct sentences given below.

- a. Which of the following is the education given to the people to save them from accidents?
- i. Treatment education ii. Moral education
- iii. Safety education iv. Community education
- b. How can we recognize whether a poisonous snake has bitten or not looking at the wound?
- i. On the basis of the amount of bleeding
- ii. On the basis of the scar of two teeth
- ii. On the basis of length and size of the snake
- iv. On the basis of pain of the snake bite

2. Write short answer to the following questions.

- a. What is the importance of safety education in human life?
- b. Write down the importance of first aid.
- c. What safety measures are to be followed to prevent ourselves from electric shock?
- d. How do you provide first aid to the victim of the electric shock? Write in points.
- e. Write any five symptoms of bone fracture.
- f. Write any four symptoms to recognize altitude sickness.
- g. What safety measures should be followed to remain safe from snake bite? How can we provide first aid to its victim?



Unit 9

Family and Community Health

We all individuals live in the families. The group of people who live together on the basis of their relation of blood and marriage and share their meals from the same kitchen is called a family. A nuclear family consists of mother, father and their sons and daughters. In the joint family, father, mother, sons, daughters- in-law, grandsons and granddaughters live together. A community is made up of families. The group of people living in a certain place is called a community.

The physical, mental and social health of the members of a family is called family health. The overall health condition of the people of a community and their organized health activities is called community health. If the family is healthy, the community also remains healthy. Therefore, family and community health are related to each other.

The Relation between Family and Community

As the community is made up of the families, there is a direct relationship between the family and the community in terms of family health. The community is affected by the health activities in the family. Likewise, the family is affected by the health activities that happen in the community.

Marriage, pregnancy, maternal child health care, family planning, cleanliness, etc. come under family health. The community should be encouraged to think for late marriage of their family members. Health activities like health check- up of the pregnant woman, proper post-delivery care of the mother should be conducted in the community. Family and community should take special health care of their infants and children. The community should be encouraged to follow the norms and values of small and happy family. It should try to provide services such as the use of contraceptives and awareness about population control in every family.

Every family should manage the household waste materials in their own houses to promote family health. The community should provide clean and safe drinking water

and control open defecation practices. The community and family health will be enhanced if all the members of the family avoid smoking and adopt healthy habits.

The Works to be Done for Family and Community Health Promotion

- a. Health and environment education should be provided to all the people in the community.
- b. Contraceptive devices should be made easily available and distributed free of cost in order to stop the problems of population growth.
- c. The children in the community should be provided with enough nutritious foods.
- d. Public awareness should be created in every area and the provision for proper management of garbage should be made in order to keep the environment healthy.
- e. Vaccination / immunization against diseases and proper treatment for diseases should be managed well in the community.
- f. Public awareness programs should be conducted in order to eliminate the addiction of drugs, alcoholism and smoking from the community.

Utilization of Health Services Available in the Community

The government has made different health services available to improve the health condition of the people. It is our duty to take care of the family and community health utilizing the available health services in the community. The government of Nepal has the policy of providing basic health services to every individual. The health services available in our community are as follows:

1. Sub-Health Post

Every Village Municipality of Nepal has a sub- health post. It provides general curative, preventive and promotional health services to the people of community. A community health assistant will be the chief of the sub-health post. In order to promote primary health services and avail them easily, programs like immunization clinic and village clinic are conducted in every ward and area (tole)of the Village Municipality. One female health volunteer also works under this office. Generally,

a sub- health post provides the following services.

- a. General health check-up for the patients.
- b. Treatment and control of diarrhea.
- c. Provide education related to safe motherhood.
- d. Manage the required vaccines in the community.
- e. Provide health education about HIV/ AIDS, Malaria, Leprosy and sexually transmitted diseases.
- f. Organize health awareness campaign in order to keep healthy environment in the community.
- g. Make contraceptive services available in the community.

2. Health Post

The area level health organization which provides higher level of health services than that of sub- health post is called health post. It is established in the center of every area (ilaka) in each district. A senior health assistant (HA) remains the chief in this health post. It provides all the sub- health post level services and monitors every sub- health posts under it. Beside this, the functions of the health posts are given in the following points.

- a. Provide treatment to general health problems of the patients.
- b. Manage the required number of vaccines in the community.
- c. To conduct health campaign in the community for maintaining healthy environment.
- d. To adopt ways of controlling the transmission of the communicable diseases.
- e. Provide family planning services to the people of the community.
- f. Follow the instructions provided by the upper level health organization.

3. Primary Health Centre

Minimum one primary health center has been established in every election

constituency for the purpose of providing easily available health services to the people there. There is a provision of an MBBS doctor to be the chief of this center. This center provides curative services to the people. The responsibility of this center is to execute the policy prepared by the upper level health related bodies. The functions to be carried out by a primary health center are listed below.

- a. To care the patients who are referred from other health centers
- b. To refer the patients who cannot be cured there to upper level health hospitals
- c. To provide health services such as vaccination, health education, family planning service, maternal child health care service, etc.
- d. To conduct health related programs
- e. To follow the instructions given by the upper level health related bodies
- f. To monitor and evaluate the works carried out by the health posts and sub-health posts.

4. Ayurveda Hospital

The Department of Ayurveda remains as the central body of ayurvedic health agencies. The major function of the Department of Ayurveda is to make policy, rules and regulations, planning, monitoring, evaluating and coordinating all the ayurvedic hospitals and ayurvedic dispensaries. Zonal ayurvedic hospitals, zonal ayurvedic dispensaries, district ayurvedic dispensaries and area (ilaka) level ayurveda dispensaries remain under this department. In this hospital, health care services are provided by improving the food and sleeping habits of patients and by using ayurvedic medicines. Vaidyas and ayurvedic doctors are appointed for this health service.

5. Homeopathy Hospital

Homoeopathy therapy is one of the health services among other modern allopathic therapy, ayurvedic therapy, natural therapy and acupuncture therapy are practised to provide health care to the citizens of the country. In this therapy, the diseases are treated by prescribing less amount of medicine. In Nepal, Pashupati Homeopathy Hospital was established by the government in 2010 B. S. This is the only one

homeopathy hospital in Nepal. It is in Pulchowk, Lalitpur. It has been providing free health check-up services and the patients are treated providing food and accommodation as well. It is providing health facilities free of the cost.

6. Hospital

Eight central level hospitals have been established in order to provide health services easily and in a systematic way. These hospitals provide specialist services to the patients. These central level agencies monitor the lower level health agencies and form health policies as well. There are regional hospitals in each development region, zonal hospitals in each zone and district hospitals in every district of the country. In addition to the specialist services, they also provide in-patient and out-patient services.

Youth-friendly Sex and Reproductive Health Service

The youth-friendly sex and reproductive health service includes the aspects such as safety and cleanliness of sex organs, information about sex related diseases, safe sexual intercourse, etc. Due to the lack of proper sex and reproductive health knowledge and skill, youths have been the victims of unsafe sex practices, infection of HIV/AIDS and drug addiction. Sex and reproductive health related services should be provided to all the teenagers and the youths. The Government of Nepal has tried to provide such type of facilities through sub-health posts and health posts in the country. Health related agencies should provide effective services to the youths shortly addressing their secret problems through friendly behaviour with them. The following aspects should be focused in order to provide youth friendly sex and reproductive health services:

- a. Sex and reproductive health related contents prescribed in the curriculum should be taught creating youth-friendly environment.
- b. Health related materials should be designed in youth-friendly way.
- c. The information about sex and reproductive health related services should be pasted in the proper places.
- d. Health check-up rooms should be private, at least with curtains.
- e. Health service delivery should be easy and quick.

Behaviour and Counseling for the HIV Infected People

Every individual possesses immunity power to fight against various diseases. The virus that destroys such immune power is called HIV(Human Immuno Deficiency Virus).Diseases can easily attack the human body in the absence of immune power. As a result, various syndromes of diseases can be seen in the infected persons. HIV is the name of a virus which destroys the human immunity power that leads the infected person to suffer from AIDS later. HIV can be transmitted from one person to another through unsafe sexual intercourse, blood transfusion and use of syringes used by other infected persons. The following are the behaviors that we need to exhibit to the HIV infected persons.

- a. We should not discriminate the HIV infected ones due to the fear of transmission of disease or other causes and we should treat them with love and affection.
- b. Regular counseling should be provided to the HIV infected drop-outs and other school going children.
- c. Other people are to be made aware of how to prevent them from HIV transmission.
- d. HIV infected children also should be treated with love and care in the schools.
- e. Schools should manage free education to encourage the HIV infected children.
- f. The state should bear the responsibility of taking care of such children if their parents have already passed away.
- g. They should be comforted that HIV infected persons can live long if they adopt healthy habits and behavior.
- h. HIV infected ones should not be treated in a humiliating way.
- i. They should be advised to avoid drug addiction and unsafe sexual activities.

Activity

How can we promote family health? Collect suggestions asking your family members and present it in the class.

Summary

- Family health is the physical, mental, social and emotional well-being and adjustment of all the members in the family.
- Reproductive health service refers to the services given to the teenagers and the youths about their sex related curiosity, the development process of sexual organs, their cleanliness and safe sexual behavior. It also includes family planning, effects of unsafe abortion, sex-related diseases, HIV/ AIDS, infant health care service, safe motherhood, etc.
- AIDS is the state in which immunity power of human body gradually weakens due to the HIV virus.

Exercise

1. Write short answer to the following questions.

- a. What should the relationship between family health and community health be like?
- b. What kinds of health services are available in our community?
- c. What kinds of health services can we get from a sub- health posts?
- d. What services come under reproductive health service?
- e. What kind of condition is referred to as AIDS?

2. Write short notes on the following.

- a. Hospital
- b. Behavior and counseling with the HIV infected persons

Unit 1

Physical Education

Exercise

Introduction

Different types of physical activities that are done to keep the body healthy and fit are called physical exercises. Regular physical exercises help increase appetite, digestion and keep the body active. Besides, they also directly assist to develop a person's physical, mental, social and emotional aspects.

In the previous classes, we learnt the exercises of arms, chest, back, abdomen, thigh, ankle, feet, etc. Here, we will practise a few more types of physical exercises.

1. Warm-up Exercise

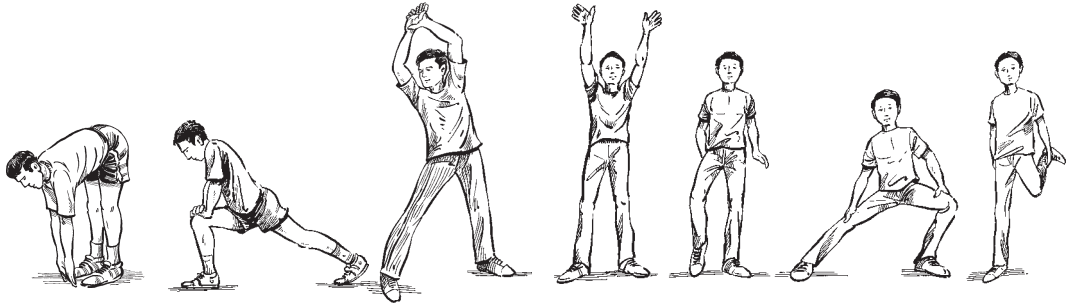
Warm-up exercises must be done prior to any other physical exercise. Warm-up exercises have to be done serially.



Warm-up exercises have to be done differently according to the types of games we are going to play. For volleyball, we should do exercise of our hands, arms and fingers. Similarly, before playing football, we should consider the exercises of ankles, legs, knees, head, etc.

Activities

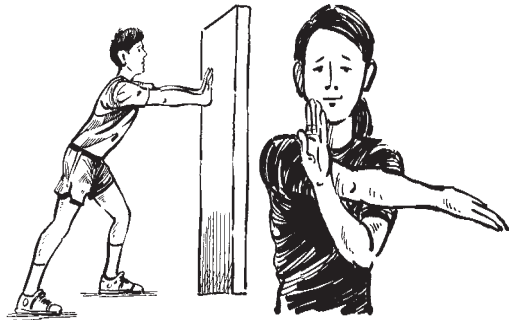
Before learning any skills required for games, the players need to run for a while. Then, stretching exercises of hands, legs, back, abdomen, etc. have to be done in turn. While teaching the students the warm-up exercises, the teachers have to demonstrate them first. Following pictures are the examples.



2. Exercise of Shoulders, Knees and Waste

A. Exercise of Shoulders

Extensive exercise of shoulders is necessary while learning the skills of volleyball, kabbadi, shotput, javelin, etc. To exercise the shoulder, first of all the students should run for a while. Then they have to push wall with their hands. If there is no wall, they can push each other's palms in pairs. The students should make 'V' shape their right hand as shown in the picture, they can put their left hand on the right hand which shapes the letter 'V'. Then, they should slowly pull the left hand towards the right hand. This activity should be repeated with both the hands.

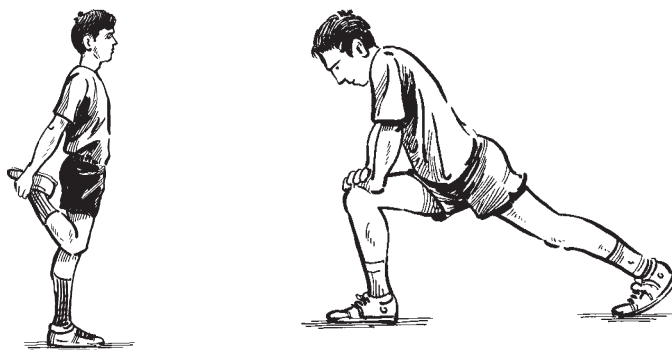


B. Exercise of the Knees

Knees should be exercised well before learning skills for playing football, basketball, high jump, long jump, etc. The teachers should demonstrate the exercises first. The following things should be kept in mind for exercising the knees:

Activity: 1

To exercise the knees, first of all jogging should be done for a while. The legs should be stretched and contracted. Stepping on the left leg, the right leg should be bent slowly towards the hip and the right hand should hold the leg and pull the leg slowly towards the hip. This activity should be repeated with both the legs.

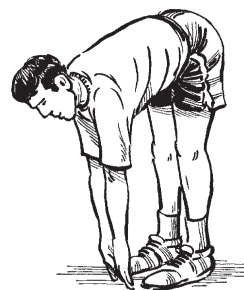


Activity: 2

Students should stand in a queue. With the counting of 1 by the teacher, they should bend the right leg by stepping a bit forward and with 2, put both the hands on the right knee, then with 3, straighten and stretch the left leg and with 4, again they have to come back to the attentive position. This activity should be repeated 3-4 times with both the legs.

C. Exercise of the Waist

Exercise of the waist is also equally important before learning the skills of different games. Exercising the waist lessens the hazards of sprains of waist while playing. Waist can be exercised in the following ways:



Exercise of the Waist

Activity-1: Bending the Body Front and Back

First of all students should stand in an attentive position. When the teacher counts 1, they should touch the floor with both the hands and at 2, they should come back in the attentive position. Similarly, at 3, they should look at the sky, and at 4 they should come back to the former position again. This activity should be repeated 5-6 times.

Activity-2: Bending the Body Right and Left

Students should stand in a queue as, in the first activity. When the teacher counts 1, they should stretch their hands up and by catching the left hand with the right, should bend towards right. While bending thus the right hand should pull the left hand gently. When the teacher counts 2, the students should come back to the former position and with the count of 3 and 4, they should repeat the same activity with the left hand bending towards the left. It should be repeated 5-6 times.



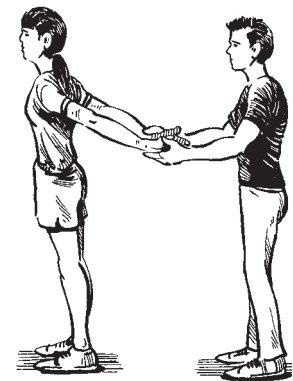
Exercise of the arms

3. Exercise of Arms and Chest

Before playing or learning skills of the games like volleyball, basketball, shotput, javelin, weightlifting, wrestling, etc. students should exercise arms and chest. The ways to exercise arms and chest are given as follows:

Activity- 1: Pulling Hands

To exercise arms and chest the students should stand in pairs facing towards the same direction as shown in the picture. The student standing in the front should take the hands back as shown in the picture and the student standing behind should pull both his/her hands. After pulling the hands for 30-35 seconds, the same activity should be repeated by the next partner.



Activity- 2: Pulling the Elbow

To practice this exercise, the students should stand in a line and as shown in the picture, right hand should be placed at the back of the neck. Then, the left hand has to be raised to hold the right elbow and pull it towards the left. This activity should be repeated by reversing the hands in turn.



4. Exercise of the Back

It reduces the risk of back strain. The following are few ways of exercising the back.

Activity-1: Touching the Toes

First of all, the students should stand in a queue maintaining a distance of at least eighteen inches (one hand) between them. Then, at the count of 1 by the teacher, they should touch the toes of their left foot by their right hand. While doing this, the left hand should be stretched upwards, eyes should be looking at the fingers of the left hand and knees should not be bent. At the count of 2, they should stand with their arms on the waist and at the third count, they should touch the right toes by left hand and at the fourth count, they should resume the original position. It should be repeated three to four times.



Exercise of the back

Activity-2: Bending the Back backwards Facing the sky

Students stand in circular or semi-circular position as needed and with the teacher's instruction and the count of 1, they should jump to spread their legs and put the hands on the waist. With the count of 2, they should bend backward looking at the sky and when the teacher counts 3, they should straighten their back and with the count of 4, they should come to the attentive position again. This activity should be repeated 3-4 times.



Exercise

Give short answer to the following questions.

1. What is meant by physical exercise?
2. Why should warm-up exercise be done before playing games or sports?
3. What are the methods of doing exercise of the shoulders, knees and the waist?

Unit 2

Drill

Activities of drill are practiced at inauguration of sports programme, to present the scouts and students in disciplined manner. Drill is chiefly performed at sports events.

Drill is the physical activity repeatedly performed at the rhythm of drum, counting or team leader's command. Drill makes good exercise of hands and legs which further helps in physical development and controls sense organs. Drill helps to develop the qualities like diligence, obedience, patience, leadership and co-operation.

Fall out

While practicing drill, the students are given a short break by falling them out. When the team leader orders the team standing in the attentive position to fall out, they at once, turn right, take few steps ahead and go to rest in their respective places.

Dismiss

After the drill is over, the team is given a dismissal order. Students must be in the attentive position while giving them dismissal order. This is the last step of drill. At the end of drill when the commander orders for dismissal, the entire team, at once turn right, take a step right, salute and move ahead dismissing the queue. To develop expertise in it, the students should practice it repeatedly for long time.

Exercise


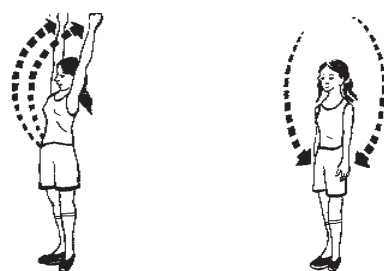

1. What is meant by drill?
2. What are the steps to be followed for drill?
3. Write down the method of dismiss of drill.

Unit 3

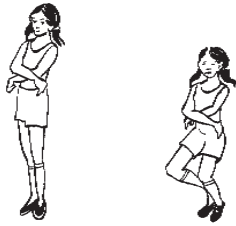
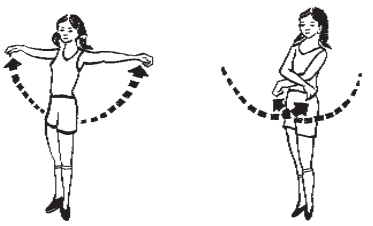

Physical Training

Physical training (PT) refers to those physical activities that help to keep our body healthy, smart and fit. It is performed on the rhythm of drum or Madal in groups. It makes our muscles strong as well as makes our body fit, smart, strong, flexible and attractive. It is performed on counting up to 8 or 16. It is tabulated by combining exercises of different organs. So, exercises should be performed combining different tables, not only of one table. Such practice helps proportional development of the body parts, not only the muscles.


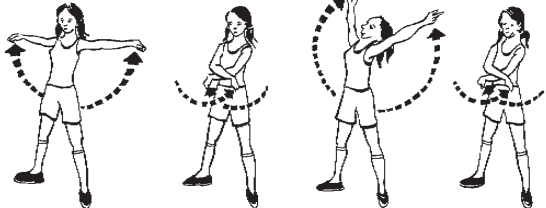
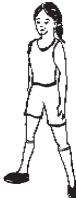
3.1 Exercise for Stretching the body

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in final stage
<p>Beating the drum two times for attention position and immediately with command attention, beat the drum one time</p> 	<p>Beat the drum 1 to 16 continuously and in 15th count, beat the drum two times and finish this PT at 16 counts. Beat the drum one time for each counting. On counting 1 and 2, raise both hands up stretching straight from the front. On counting 3 and 4, come to initial stage bringing the hands from right and left to the sides of the body. Perform the PT regularly and stop at counting up to 16.</p> 	<p>Stand with crossing both wrists gently putting them on abdomen at the front. Beat the drum one more time for attention position.</p> 


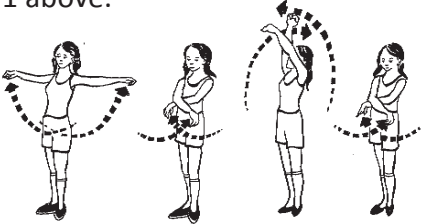

3.2 Exercise of Hands and Feet

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in the final stage
<p>Beat the drum same as PT number 1. Stand with crossing both wrists gently putting them on abdomen at the front.</p>	<p>Beat the drum a bit slowly while performing this PT. Beat the drum while bending on counting one. On counting 2, stretch hands on both sides. Keep continuing the PT until counting 16.</p>	<p>Beat the drum as in PT number 1</p>
		


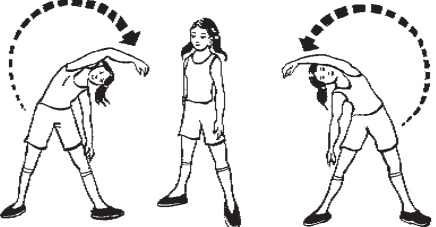
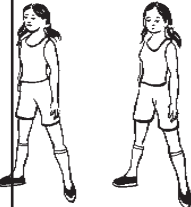
3.3 Exercise of Arms

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in final stage
<p>Beat the drum as in PT number 1.</p>	<p>In this PT, we expand, straighten and rotate our hands. Beat the drum a bit slowly in this PT, too. On counting 1 and 2 stretch both hands on both sides and on counting 3 and 4, bring the hands to the attention position keeping them crossing on the abdomen. Continue the PT and stop at counting 16. As this PT is slow, beat the drum or madal accordingly.</p>	<p>Beat the drum same as in PT number 1.</p>
		


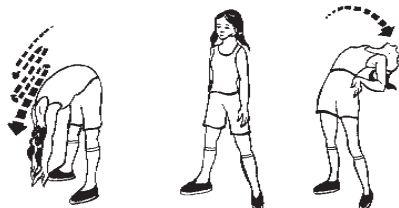
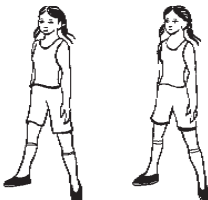
3.4 Exercise of the Chest

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in the final stage
<p>Beat the drum same as PT number 1.</p> 	<p>Beat the drum regularly in this PT. Exercise of the hands is same as others mentioned before. On counting one, move your left leg and then move your right leg. As the body movement is consistent, beat the drum rhythmically as mentioned in PT number 1 above.</p> 	<p>Stand straight with 20 cm legs apart and keeping hands at sides of the body. Beat the drum one more time for attention position.</p> 


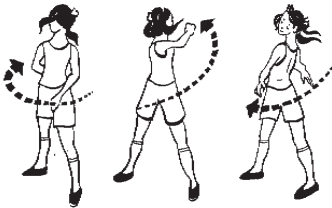

3.5 Exercise of the Waist

Use of drum or madal in Initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in final stage
<p>Stand straight with 20 cm legs apart keeping hands at sides of the body. Beat the drum same as PT number 1.</p> 	<p>Beat the drum once while counting from 1 to 14 continuously and in 15th count, beat the drum two times and finish this PT at 16 counts. On counting 1, bend the body towards left raising right hand from right side. On counting 2, reverse the same hand to bring it at initial stage. On counting 3, bend the body on the right and on counting 4, bring the body in the initial stage. Continue this till you count 16.</p> 	<p>Stand straight with 20 cm legs apart keeping hands at sides of the body. No need to beat the drum for this stage because at the final stage, there is no change in the body position.</p> 


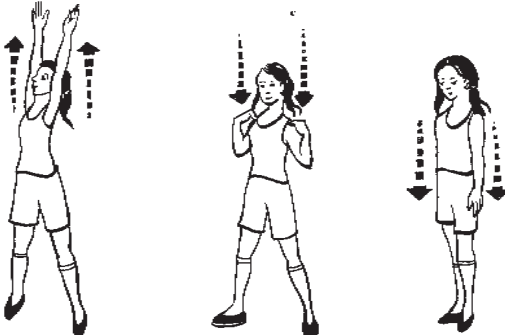

3.6 Exercise of the Trunk

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in final stage
<p>Stand straight with 20 cm legs apart keeping hands at sides of the body.</p> 	<p>On counting 1, 2 and 3, try to touch the floor with fingers bending the body at front. Beat the drum a bit faster for these stages. On counting 4, keep the body straight. Beat the drum a bit slowly for this stage. On counting 5, 6 and 7, body is bent backward supporting behind on the waist with both hands. Beat the drum a bit faster for these stages and beat slowly on stage 8. Continue this PT till you count 16.</p> 	<p>Stand straight with 20 cm legs apart keeping hands at sides of the body. Beat the drum once to bring to the attention position.</p> 


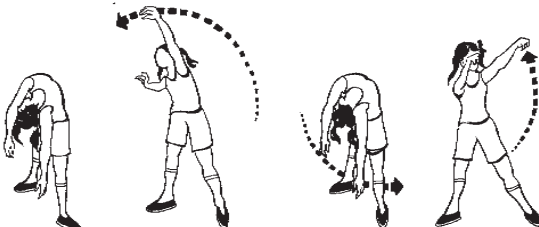

3.7 Exercise of the Chest and Waist

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in the final stage
<p>Stand straight with 20 cm legs apart keeping hands on the sides of the body.</p> 	<p>Beating of the drum and counting proceed simultaneously as in the other exercises. Beat the drum till the count 16 in a normal rhythm.</p> 	<p>Beat the drum one more time to come to attention position keeping left leg together.</p> 


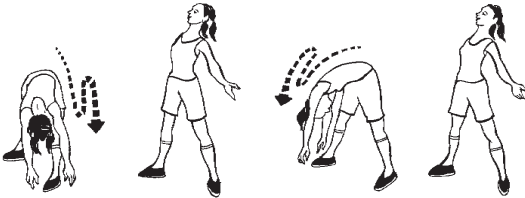

3.8 Exercise of the Shoulder and Neck

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in final stage
<p>Keep yourself in an attention position.</p> 	<p>Beat the drum same as in PT no. 7 before. Continue beating and counting up to 16.</p> 	<p>Attention position keeping hands at sides of the body.</p> 




3.9 Exercise of the Chest

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in final stage
<p>Attention position keeping hands on the sides of the body.</p> 	<p>Beat the drum same as in PT number 6 mentioned above.</p> 	<p>Beat the drum one more time to come to final stage.</p> 


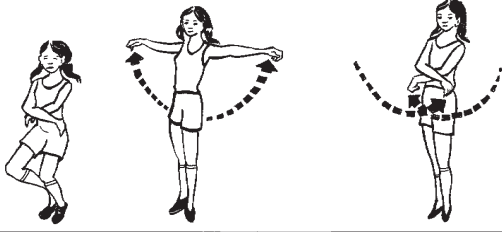

3.10 Exercise of Body Rounding

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in final stage
<p>Keep yourself in an attention position as in PT number 9.</p> 	<p>On counting 1, 2, 3 and 4, both hands pointing right side should be moved round towards left on the front. On counting 5, 6, 7 and 8, the action is repeated in the reverse and both hands are kept pointing towards right. This is continued till counting 16. The drum should be beat slowly and rhythmically according to the movement of the whole group.</p> 	<p>Come to the attention position.</p> 


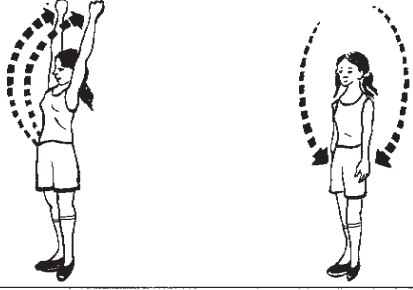

3.11 Exercise of Jumping

Use of drum or madal in Initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in final stage
<p>Stand at the attention position.</p> 	<p>This PT should be performed faster, so beat the drum regularly and fast till counting 16. Jump gently on both feet for four times counting 1, 2, 3 and 4, moving hands up and down on sides. On regular counting 5, 6, 7 and 8, the hands and legs are opened up and closed during jump. Continue the PT till counting 16.</p> 	<p>Beat the drum one more time to come to the final stage.</p> 

3.12 Cool down Exercise (a)

Use of drum or madal in Initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in final stage
<p>Stand straight with both hands crossed on the abdomen at front. No need to beat the drum in this stage.</p> 	<p>Beat the drum same as the PT number 11. On counting 1 and 2, lower down the body with knee bent as well as hands open and stand on toes. On counting 3, the opened hands at right and left should be crossed and stand on the heel. Continue this PT until you count 16.</p> 	<p>Beat the drum one more time to come to an attention position.</p> 

12.13 Cool down Exercise (b)

Use of drum or madal in initial stage	Use of drum or madal during exercise along with counting	Use of drum or madal in the final stage
<p>Stand at attention position. No need to beat the drum in this stage.</p> 	<p>Beat the drum as usual in this PT. On counting 1 and 2, bring both hands up through the front with long breathing in. On counting 3 and 4, bring both hands down to keep on the respective sides with breathing out.</p> 	<p>No need to beat the drum to come to an attention position.</p> 

Unit 4

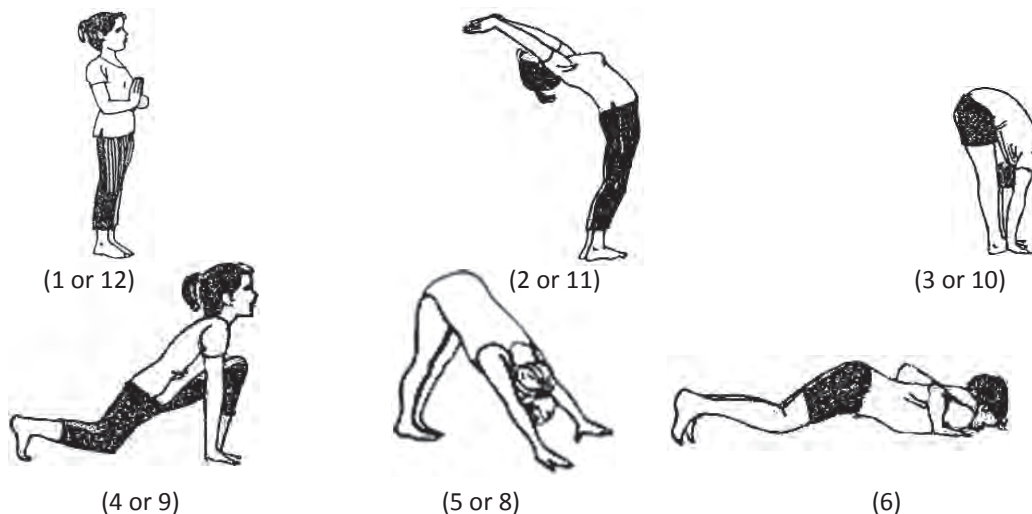
Yoga

Introduction

Yoga is a group of physical, mental and spiritual practices. It is derived from sanskrit word. It is a kind of self-discipline. It is a life style which plays an important role in personality development. It is a kind of medical science that deals with both physical and mental diseases. It is a collection of spiritual knowledge that helps to recognize one's own body and mind. Yoga is a kind of collective pattern aiming to keep body, mind and soul healthy. It plays important role to keep body, mind and soul fresh and pleasurable. Maharsi Patanjali is the first person to bring yoga into practice. Yoga can be practiced individually as well as in group. Regular practice of yoga strengthens internal and external body organs and systems. Similarly, it keeps the body free from diseases and weakness. Yoga plays a vital role in maintaining maximum physical and mental health as well as for developing maximum capacity on the part of students and players. Yoga is necessary to be safe from different accidents, keeping body and mind conscious and well-conditioned. There are eight part of yoga. They are:

- i. Yam
- ii. Niyam(a)
- iii. Asana
- iv. Pranayam(a)
- v. Pratyahar(a)
- vi. Dharana
- vii. Dhyan(a) and
- viii. Samadhi

Among these types, we are practicing some of the asanas and pranayams of yoga in this unit.

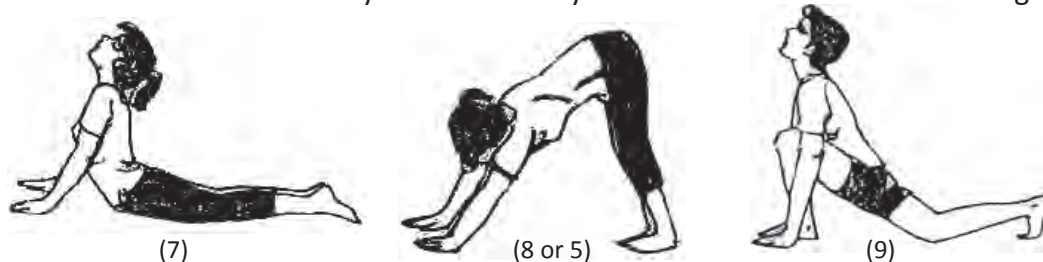


Surya Namaskar (Salutation to the Sun)

Surya refers to the sun and namaskar denotes bowing down. Surya Namaskar (Salutation to the Sun) means a salute to the sun. It helps to improve flexibility, strength, balance, concentration and focus. It also strengthens the abdominal muscles. It is a kind of training as well as a type of pranayam since it is related to respiration.

Steps of Surya Namaskar

- Step 1: Start with standing position, as shown in figure. Keeping palms joined together, in prayer pose, we should exhale air.
- Step 2: With a deep inhalation, raise both arms above your head and tilt slightly backward arching your back.
- Step 3: With a deep exhalation, bend forward and touch the mat, both palms in line with your feet, and touch your knees with forehead.
- Step 4: With a deep inhalation, take your right leg away from your body, in a big backward step. Both your hands should be firmly planted on your mat, your left foot between your hands and your head tilted towards the ceiling.





(10 or 3)



(11 or 2)



(12 or 1)

- Step 5: With a deep exhalation, shove your hips and butt up towards the ceiling, forming an upward arch. Your arms should be straight and aligned with your head as shown in the figure.
- Step 6: With a deep exhalation, lower your body down till your forehead, chest, knees, hands and feet touch the mat, your butt tilted up. Take a normal breath in this pose.
- Step 7: With a deep inhalation, slowly snake forward till your head is up, your back arched concave as much as possible shown in the figure.
- Step 8: Exhaling deeply, again push your butt and hips up towards the ceiling as in position 6 and your arms aligned straight with your head.
- Step 9: Inhaling deeply, bring your right foot towards your body, in a big forward step. Both your hands should be planted firmly on your mat and the right foot between your hands. At the same time, head must be tilted towards the ceiling.
- Step 10: Exhaling deeply, rise up and touch the mat, keeping both your palms in line with your feet and forehead touching your knees.
- Step 11: Inhaling deeply, raise both your arms above your head and tilt slightly backward.
- Steps 12: Return to standing position facing the sun, touch both feet, join palms together in the prayer pose.

Asana

The word asana is usually translated as "pose" or "posture,". But it's more literal meaning is "comfortable seat" for meditation and pranayama. It helps to make all organs and systems in our body active, healthy and flexible in our body. It is very useful in different conditions. Some of the Asanas are described below.

1. Setu Bandhasan (Bridge Pose)

This pose is effective in reducing pain in waist and neck. It strengthens the abdominal muscle and helps to improve digestion. Following are the steps to be practiced:



Step 1: Lie flat on your back on the ground.

Step 2: Keep your arms on your sides. Now lift your hips upwards pressing with your palms and as high as you can as shown in the figure (should not over-stretch).

Step 3: Straighten your feet, keeping waist in stable position. Stay in this position for 7-8 seconds.

Step 4: Now relax by touching your hips to the ground, i.e. your starting position.

Step 5: Relax for few seconds and repeat this cycle for 5-6 times.

2. Makarasan

This asana is done for relaxation of body. While performing different asanas, makarasan is done between those asana for relaxation. This asana is beneficial for people with high blood pressure, mental stress and insomnia. It cures stomach disorders as well. Following steps are to be performed in this asana.



Step 1: Lay in prone position, fold the arms in front of the head and place the head either on the arms or on the floor, turning the head to the side if it is comfortable. Spread the legs apart so the heels touch the corners of your yoga mat, with the toes pointing outwards and heels in. Close your eyes while you maintain the asana.

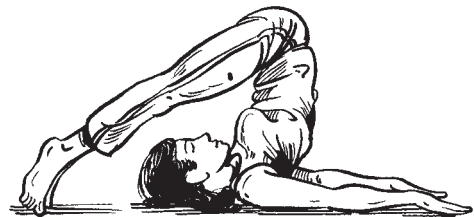
Step 2: Stay relaxed and breathe normally. You should self-concentrate on theological

thought. For example, 'We came to this world empty handed, and have to go empty handed as well. So why to quarrel, I am a part of the god and so on'. Bring such thoughts in your mind and feel yourself being very close to the God and relax.

3. Halasan (plough pose)

The posture that resembles the shape of a plough is known as Halasan. It makes the spine flexible. It keeps thyroid gland healthy and helps in physical and mental development of an individual. It is beneficial for the people having constipation, diabetes and heart diseases. People having problem of liver, uterus and spine must not perform this asana. Following are the steps of halasan.

Step 1: Lie on your back, arms alongside, palms on the ground. Raise legs at 90° (you may take help of hands on the hips) with deep inhalation, then lower them over your head with exhalation.



Step 2: Touch the ground by with feet as shown in the figure, keeping knees straight, ankles stretched and toes pointed. Remain in this position for 5/10 seconds. As you practice this time and again, you can stay in this position for 4/5 minutes.

Step 3: Come back to the initial stage following the steps in a reverse manner.

Pranayam

Respiration is the basis of life. Pranayam is the process of controlling the speed of respiration. The breathing process chiefly involves three activities: inhalation, holding and exhalation. Of these, the first is called "Puraka", the second is called "Kumbhak" and the third is called "Rechaka" in pranayama. Pranayama helps to maintain healthy blood circulation and nervous system. Likewise it improves concentration and is helpful in increasing memory power as well. Pranayamas are of different types. Some of them are given below:

1. Bhastrika

Bhastrika is process of inhaling and exhaling air rhythmically through the nose. Generally, inhalation and exhalation are done within two and half second in bhastrika. People of all ages can perform it. It is the excellent breathing exercise

which we can practice slowly or fast at our convenience. But practising this exercise quickly by unhealthy people could be dangerous. It helps to make nervous system and circulatory system active. It refreshes our mind and improves concentration. It cures diseases such as common cold, cough, asthma, allergy, etc.

Steps for Bhastrika

Step 1: Sit comfortably on flat ground keeping your back straight.

Step 2: Close your eyes, take deep breath through both nostrils (two and half seconds) and fill the lungs with air and then exhale the air taking it at the same time. Generally, one cycle is completed within 5 seconds and 12 cycles are completed in 5 minutes. It is better to perform this exercise daily 2-5 minutes.



Step 3: In the beginning, it can be practiced 3/4 minutes in the morning and in the evening. When you become experienced, it can be practiced daily for 10/12 minutes.

2. Kapalbhati

Kapalbhati is a type of pranayama. Deoxygenated air is exhaled and oxygenated air is inhaled during this exercise. It improves the function of the lungs and other respiratory system. It removes toxins from the body and helps to clean the internal system. It improves the functioning of digestive system and is beneficial for gynecological diseases. It increases memory power too. People with heart diseases, hernia, asthma, dizziness and surgery of stomach and chest in the period of less than 6 months should not practice this exercise.

Steps for Kapalbhati

Step 1: Sit on the flat floor and fold your legs. Keep the trunk straight and close the eyes. Keep the right palm on right knee and left palm on left knee.

Step 2: Take deep breath and exhale with all your force so your stomach will go deep inside and again in hale. This process should be done in each second so that there will be 60 times in a minute. In the beginning, practice it for 2 minutes and then after it can be practiced for 5/10 minutes and can be prolonged up to 20 minutes daily.



Anulom Bilom

Anulom Bilom is one of the best and easiest breathing exercises for entire purification of the body as well as the mind. It is a kind of rhythmic inhalation and exhalation exercise. In this breathing technique, inhale through one nostril in 5 seconds, hold the breath and exhale through the other nostril within 5 seconds. The left nostril is the path of Ida and the right nostril is the path of Pingala. The exercise of the Anulom Bilom produces optimum function to both sides of the brain. That is, optimum creativity and optimum logical verbal activity. This will make both sides of the brain function properly. For example, the left side is responsible for logical thinking and the right side is responsible for creative thinking. This will lead to a balance between a person's creative and logical thinking. It completely cures most of the internal body diseases. It reduces stress of body and mind. There are 4 steps in one cycle of Anulom Bilom. In one minute, we can complete three cycles of it. Generally it can be practiced 5-10 minutes daily. But, for particular diseases, it can be practiced according to the advice of a doctor. People of all ages can practice this pranayam.

Steps of Anulom Bilom

Step 1: Sitting in padmasan position, close your right nostril with your right thumb and inhale slowly through the left nostril counting 1 to 5.

Step 2: Now close left nostril with middle and ring finger and exhale through the right nostril counting 1 to 5.

Step 3: Inhale again through the right nostril.

Step 4: Exhale again through the left nostril. It completes one cycle.



Unit 5

Game

Different physical activities which are played in entertaining and competitive way are called games. It provides entertainment and directly helps children develop their physical mental, social and emotional aspects.

1. Volleyball

Volleyball is an entertaining game which is played in the court sized 9m width and 18m length putting a net across the center line without letting the ball drop/ fall on the ground. This game is played between two teams having 6 players each. This game starts with the service. The serviced ball is volleyed /passed each other three times and tried to drop in the court of the servicing team from over the net. The opposing team gets one point and a turn to service the ball when the ball drops on the ground of any side. Likewise, the opposite team gets one point and the turn for servicing if one team plays foul or sends the ball out. The game ends whenever a team scores 25 points (the winner is determined on the basis of 25 point score). A team need to win three sets out of five sets. We learned fingering, digging under hand service among the basic skills of volleyball game in the previous classes. In this unit, we practise overhead service and the setting of this game.

a. Overhead Service

Overhead service is an important basic skill in volleyball. Overhead service is a process in which a player called service person throws the ball over his/ her head and hits the ball with the palm of his/ her another hand or the same hand and sends the ball to the opposite court from above the net. In order to do this service, the player should stand stretched forward looking at the net with one leg front and another back. Then, the player should throw the ball in the air over his/ her head and hit the ball sending it to opposite court.





Activities

Students should be divided into two groups. One group should stand in a line in one end and the another group should stand in another end of the court. Each student standing in the line should be given one ball each and asked to keep the ball on their left palm/ hand. Then, the students should be asked to throw the ball in the air and hit it with the right palm/ fist sending the ball across the net to the opposite court.

b. Setting

Setting is another important basic skill in volleyball. In this activity, the ball is raised above the net making easier to spike it. On the basis of the raised ball by the setter or raiser, the ball can be smashed forcefully to the opposite court so that the opposing players cannot raise/ lift it easily. It helps score more points. The setter should stand facing his back on the side of the net. The setter should raise the second ball of his/ her side or the ball that comes suddenly from the opposite side above the net keeping his / her physical state in balance. The game becomes more interesting and competitive if the setters and raisers are good in each team.

General Rules of Volleyball Game

- a. The court for volleyball should be 18m in length and 9m in breadth.
- b. Among the 12 players in each team, only six players from each team play at a time and the remaining six stay outside the court as additional or substitute player.

- c. Out of 12 registered players in the team, one player remains in a different jersey as a libero player.
- d. The referee calls the captains from the both teams for toss to choose the court or the turn for service to begin the game.
- e. The height of the net in the volleyball court for men should be 2.43 m and 2.24 m for women.
- f. The length and width of the net should be 9.50 m and 1 m respectively.
- g. The game begins with the signal/ whistle of the referee for service.
- h. No players can cross the center line while playing the game.
- i. The serviced ball or the ball from the opposite court can be volleyed only for three times and it should be sent to the opposite court within this.
- j. At the time of servicing, all the players should stay in their respective places and they can change their places accordingly after the service ball crosses the net.
- k. During the match, the service winning players should rotate/ change their position in the clockwise direction.
- l. The team that first scores 25 points wins the set. If both teams score 24 points equally, the team which scores 2 more points, wins the set. Again, if both teams score 26 points equally, the winner needs to have 2 more points to win the set.

2. Football

Football game is played between two groups having 11 players in each team. In this game, players play with their legs, belly, chest, head, etc. The team which is able to score more goals against the opposite team (sending the ball into the opposite goalpost) utilizing individual or group skills wins the match. This game is also called soccer. Now-a-days, football has been the most popular game in the world. We have already learnt the basic skills of football such as passing, kicking, trapping, heading, etc. in the previous classes. We practise dribbling, throwing and goal keeping in this section.

a. Dribbling

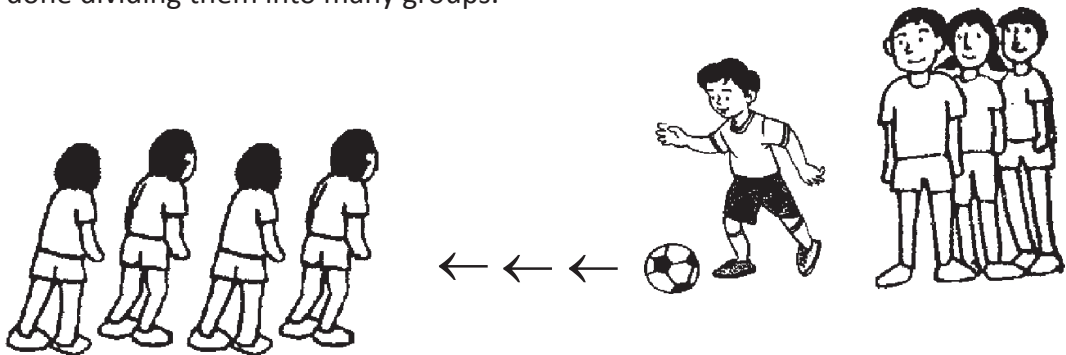
The skill of moving the ball in the desired direction deceiving the opposite players by controlling it using both feet during the game is called dribbling. The players can use different parts of their legs while dribbling the ball. But, the use of upper and inner part of the feet can be beneficial. This skill can be applied when the players need to pass and receive the ball to and from the friends, controlling the ball in risky situations as well as taking an opportunity to score the goal. This skill helps the players to deceive the opposite players, dribble the ball back and forth, and moving the ball in a jig jack way. Both short and long dribble can be applied depending on the situation during the game.



Dribbling

Activity – 1

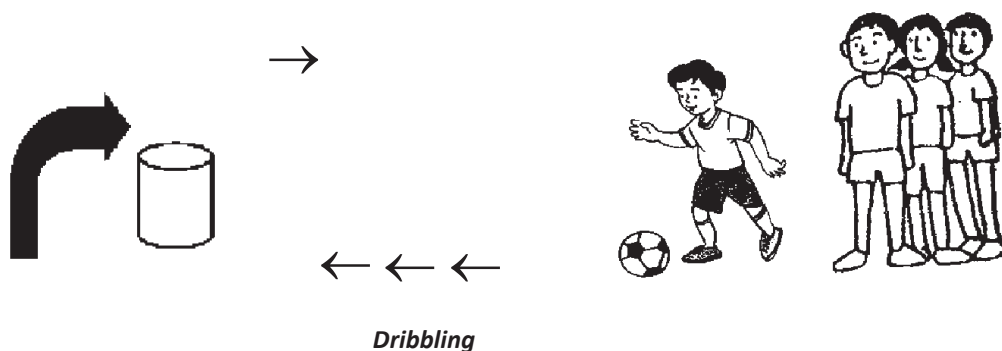
The students should stand in a line face to face being divided into two groups. The distance between these two groups should be about 25- 30 m. Then, the first player of one line moves forward dribbling the ball. He / she passes the ball to the first student of the next group when he/ she reaches near them and stands going at the back of the opposite group. The one who gets the ball dribbles the ball forward again. When he/ she reaches closer to the opposite group, passes the ball to the front player and stands at the back of that group as the former player does. This practice should be done repeatedly. If there are many balls, this practice can be done dividing them into many groups.



Dribbling

Activity- 2

Students should be divided into groups and kept in the lines of six members each. A signal should be kept about 15- 20m far from the lines. Each line of students should be given a ball. The first student of the line goes dribbling the ball around the signal and comes back to the line. When he/ she approaches the line, he/ she passes the ball to the front student and goes to the back of the line and stands there. This practice should be repeated time and again.



b. Throw In

The opposite team gets opportunity to throw the ball in when a team sends the ball out of the sideline. For this, a player of the opposing team goes out of the playground and throws the ball in using his both hands from above his head passing the ball to one of the friends of his own team. The player cannot lift his legs from the ground.



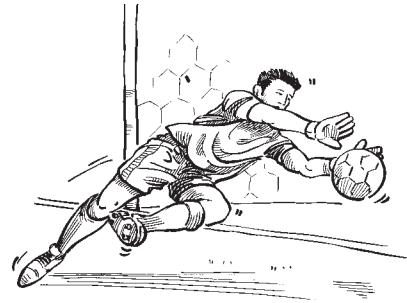
Throw In

Activity

Students should make a line standing outside the side line. Then, they should throw the ball given by the teacher in. The student who throws the ball in should go and stand at the end of the line (of the students) and the teacher should catch the ball and makes the next student throw the ball in. Thus, it should be practiced turn by turn.

c. Goal Keeping

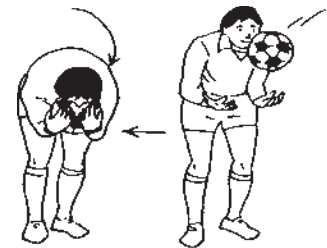
The skill in which the goal keeper tries to catch or block the ball kicked by the opposing team from entering the goal post is called goal keeping. Among the eleven players in each team, the ones who stay at the goal post area at each end of the ground are the goalkeepers.



The goalkeepers can catch the ball with the hands. The goalkeeper tries to catch or block the ball from entering it into the goal post guessing the speed and the direction of the ball. The skills that the goalkeepers can apply/ use to thwart the goal are as follows.

Methods of catching the ball

- i. Holding / Catching the ball
- ii. Punching and changing the direction of the ball
- iii. Catching the ball by diving
- iv. Kicking the ball with the feet



Exercise of goal keeping

Activity- 1

Students should stand in a semi-circular line. The teacher should stand taking a ball in front of the students. The teacher should throw the ball to the height of the knees of the students. The students should catch the ball thrown by the teacher. They should carry the ball up to their chest after catching it. If this exercise is practised continuously, it helps students to develop the skill of catching ball.

Activity- 2

Students should stand in a line being equally divided into two groups. There should be a certain distance between them. First of all, the teacher should give the ball to the student standing in the front of the line. The student who got the ball should put the ball on the ground and kick it to the opposite group. The student standing in the front line of the group B should try to catch, punch or dive the ball thrown by the student of group A. Then, he should give the ball to the friend behind him and go to the back and stand in the line. The student who gets the ball should kick it to



group “A” again. The front student of group “A” also should try to catch, punch it or hold the by diving as the group “B” does. Thus, the goal keeping practice should be done turn by turn.

The General Rules of Football Game

- i. The length and the width of the rectangular ground for the football game should be 90-120m and 45- 90 m respectively. Likewise, the net length of the goal post should be 7.32m long and 2.43m wide.
- ii. In order to play the game, each team should register the names of 11 players and 5 to 12 additional players making a total of 16 to 23 players before the match starts.
- iii. The toss winning team can choose either the field or kick the ball off.
- iv. The total match time will of 90 minutes. There will be 10 minutes break between the two halves of 45 minutes play.
- v. The team which is able to score more goals during the determined 90 minutes time will be the winner but if there is no goal from either side or equal number of goals from both sides, additional time of 30 minutes will be added having 15 minutes on each half to continue the game.
- vi. If the game equals even in the additional time, each team will be given chances for 5 penalty kicks (against the opposite goal posts).
- vii. If the ball passes into the goalpost of any team, it is called goal. After the goal, the ball is kept in the center and is kicked off by the defeated team.
- viii. If the ball touched by one team crosses the touch line during the play, the opposite team gets a chance to throw the ball in from outside the ground.
- ix. The opposite team gets a chance for a corner kick if the ball touched by one of the players of a team goes out from either right, left or above the goalpost.
- x. If the players of any team play foul intentionally, the opposing team gets chance for a free kick. At that moment, the foul playing team should stand 9.19m away from the kicking point.
- xi. During the play, if the players run before the ball while dribbling the ball towards the goalpost of the opposite team in the goal area then this condition is called offside. In this situation, opposite team will be given a chance to kick the ball.

3. Basketball

Basketball is a group game played in a rectangular court between two teams having five players in each team. Both teams try to insert the ball into the basket of the opponent team. It is played in four innings of 10 minutes each. The team which scores high in the forty minutes time will win the match. Among the basic skills of basketball, holding, dribbling, chest pass, underhand pass and overhead pass have been already practised in the previous classes. We will discuss about bounce pass and one hand pass here.



Practice of Basketball

a. Bounce Pass

If direct pass is impossible during the play, bounce pass can be applied. This skill is more useful between two friends when the players of the opponent team come to offend and if opponent player are in front of them. In this skill the ball is bounced on the floor and raised to the height of the hands and the waist of another friend. It will be difficult for the opponent players to seize the ball as the ball is passed from the low height level. The players may pass the ball to the other players of their own group by deceiving the other players from the opposite group.



Activities

The students should stand face to face keeping 5/6 meters distance in the lines in two groups. First of all, the front student in the line should be given the ball. The student who gets the ball should bounce the ball to the front standing friend and goes back and stands at the end of the line. This practice should be done continuously. If the students are unable to use this skill, the teacher needs to demonstrate them.



Bounce pass

b. One Hand Pass

This skill is specially used for passing the ball to a friend who is far from the player and to take the ball to the opposite court as soon as possible. The player should stand in a slant position to apply this skill and the ball should be kept on the right or left palm at the height of the shoulder slightly behind it. The fingers should be widely starched to hold the ball easily. At the time of passing the ball, the ball should be thrown directly to the desired direction with the hand holding the ball. After the ball is thrown, the back foot should be moved to the front and the body weight should be inclined to the front from the back foot.

Activities

The students should be asked to stand at the end line of the basketball court being equally divided into two groups in a line. The front student of the line should try throwing the ball to the other team using one hand pass skill. Then, he / she should go and stand at the end of his or her line. The other group also should practice the skill regularly in the same way. If the students are unable to do one hand throw, the teacher needs to demonstrate them.

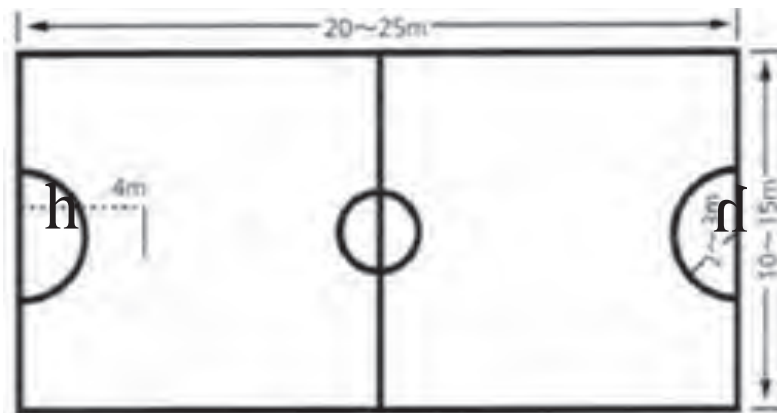
The general Rules of Basketball Game

- i. One team consists of total 12 players including five match players and seven additional players. The height of the basket ring from the ground is 3.05m.
- ii. The game is played in four innings of 10 minutes each. The team which scores highest point during the match will be the winner. If both teams score equal points during the determined time (40minutes), the match time will be extended for another five minutes.
- iii. The toss winning team can choose the side of the playground.
- iv. The players of both teams should wear jerseys(T-shirt, vest and shorts) labeled 4- 15 numbers.
- v. During the play, the players score two points if they insert the ball into the basket from inside the arc, 3 points if they insert the ball from outside the arc and only one point if they score from free throw line.
- vi. If one holds the ball after dribbling, he/ she cannot dribble it again.
- vii. The player should not stay longer than three seconds in the restricted area of the opponent group.

- viii. If a player holds the ball for more than five seconds, five seconds rule will be applied (it will be a foul).
- ix. Each team should cross half court and reach the opponent's court within 8 seconds after it gets the ball.
- x. The ball should be shot into the opponent's basket within 24 seconds after the ball is started.

4. Port Ball

Port ball is another interesting game like basketball. This game is played using the skills like passing, dribbling, pivoting, etc, as in the basketball game. Generally, this game is played to teach small children the basic skills used in basketball game where there is the lack of facilities for playing basketball. Instead of back board and net used in basketball, one player of each team stands on the chair at the end of the opponent team's court in this game. If the player standing on the chair catches the ball, his/ her team can score a point.



Method of Playing Port Ball

It requires six players in each team to play port ball. Among them one player from each team stands on the chair in the middle of end line of the opponent court. The remaining 5 players try to move forward using dribbling, passing and other skills. They try to pass the ball to their team's player who is standing on the chair of the opponent court. If the player standing on the chair catches the ball, the team gets one point. The team which scores more points in the two innings match of 5 minutes each will win the match.

General Rules for Port ball game

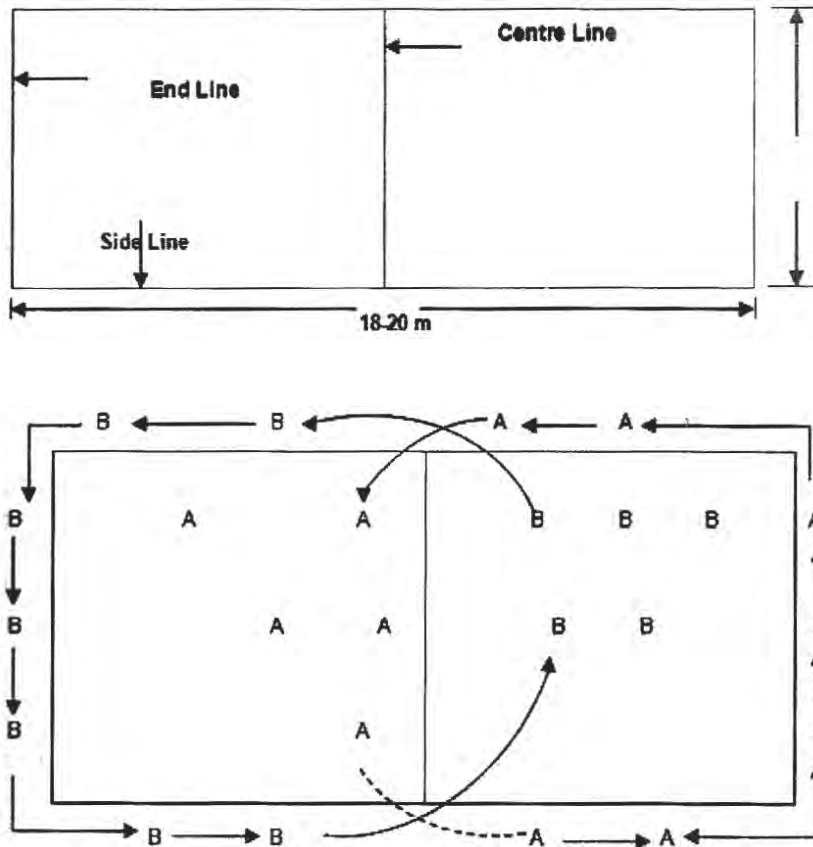
- i. The game begins with the toss.
- ii. The game starts with a jump ball.
- iii. No one is allowed to pull, push or catch the players of the opponent team.
- iv. If one catches the ball after dribbling, s/he cannot dribble it again.
- v. None of the players can go to the goal area.
- vi. If anyone makes a fault during the play, the ball should be passed in from outside the side line by opponent team to continue the game.
- vii. If the player standing on the chair is able to catch the ball passed to him, his/her team will be awarded with a point. But if s/he is unable to catch it or falls down the chair, that team cannot score a point.
- viii. The player standing on the chair can be replaced with the permission of the referee.
- ix. No one should dribble the ball with two hands together at a time.
- x. After a team scores a point, the game is started with the throw in by the opponent player from outside the end line.
- xi. No player is allowed to walk carrying/ holding the ball.

5. Dodge Ball

The game in which the players of one team hit the players of the opponent team under their waist directly or passing the ball with each other is called dodge ball. If the players hit the opponent players under their waist with the ball, they score a point. The team which scores more points during the ten minutes (determined time) play will be the winner. This game is taken as the supporting game of basketball and handball.

The Methods of Playing Dodge Ball

A team requires 9- 12 players to play this game. Five players from each team should remain inside the court. Just opposite to it, other three players should stay in the end line lobby and two others should stay in both sideline lobbies of the opponent team.



The players of one team should hit the players of opponent team under their waist passing the ball with each other as soon as they get the signal from the referee. If the ball hits the opponent players, the hitting team gets one point. The player who is hit with the ball stays in the right hand side lobby of the opponent team. The player staying outside in the lobby enters the court from the anti-clock direction. Then, every player changes his / her position by one step. If the opponent players catch the ball before it falls to the ground while hitting them, that team cannot score a point and the hitting turn also goes to the opponent team.

Some Basic Skills to Play Dodge Ball

Pass

Pass is one of the important skills in dodge ball game. If the players cannot use this skill properly, the team may lose the match. The ball should be passed to the friend in a tricky way.

Team work

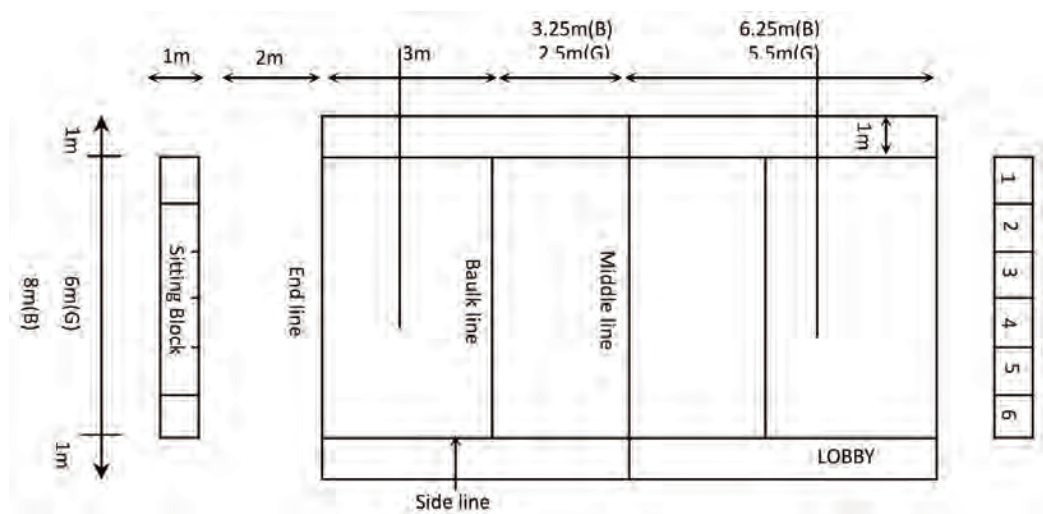
Dodge ball is a group game. It is difficult to succeed in the group game without team work. Therefore, all the team members should have a common goal. In order to get success in dodge ball, the players should pass the ball to their friends and hit the opponents safely and easily. Similarly, the next team also should have the knowledge to aware their friends on how to get the ball in their hands and deceive the opponents. In this game, the players should not hit the player of the opponent team directly; instead, they should pass the ball to their friend pretending that they are hitting them.

General Rules of Dodge Ball Game

- i. The toss determines whom to give the first ball.
- ii. The players should not touch or cross the determined lines while passing the ball, catching and hitting the opponents.
- iii. It is valid if the ball directly touches the opponent players without dropping on the ground while hitting them otherwise the opponent will not be out.
- iv. The opponents should not be hit above the waist.
- v. If the the ball touches the opponents while hitting then that player will be out and another player will replace him/her.
- vi. The team which can hit the opponent players under their waist with the ball will be awarded with one point.
- vii. The hitting team does not get the point if the opponent player can directly catch the ball which fell to the ground touching them before it dropping on the ground again.
- viii. The player touched with the ball goes to the right side lobby of the opponent ground and the other players move one step in anti-clock wise direction.
- ix. The game again starts after the players change their places. The team who gets the ball starts the game again.
- x. The team which scores more points during the ten minutes play will win the match.

6. Kabaddi

Kabaddi is an interesting game played in groups. This game does not require any material. This game is played between raider and anti-raider where the raider goes to the anti-raider's ground chanting kabaddi-kabaddi and chasing the anti-raiders in a certain playground. The size of the court and time for men and women are different in this game. The team which is able to pursue more numbers of players of the opponent team will be the winner. It requires a rectangular court with the measurement of 12.5 × 10 m for men and 11 × 8 m for women on the plain surface. Similarly, on both sides of the end line there should be a sitting block of 8 × 1 m for men and 6 × 1 m for women at a distance of two meters from the end line. This game is played in two innings having 20 minutes for men and 15 minutes for women with five minutes interval between the innings.



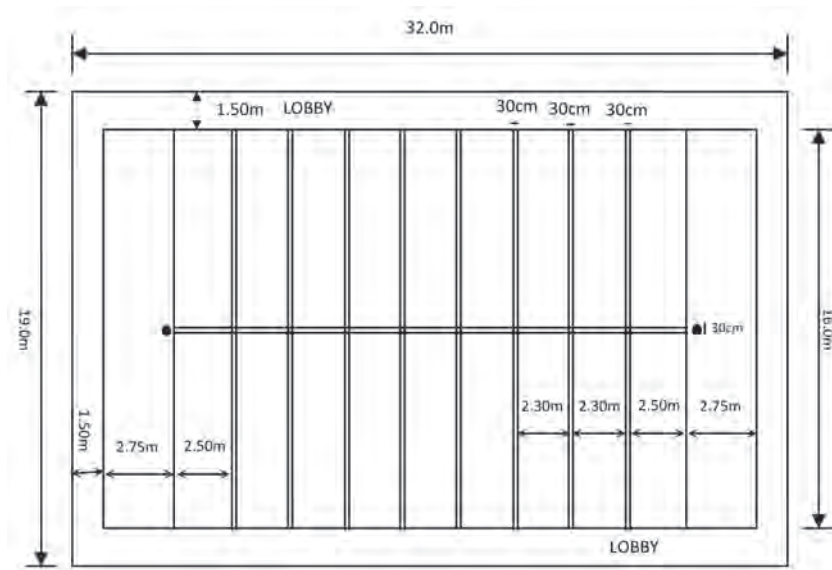
Rules of Kabaddi

- i. The teams with 12/ 12 numbers of players should be registered to play this game. Among them 7/7 players of each team play in the court at a time and the remaining 5/5 players remain outside as substitute players.
- ii. The referee should call the captains of the teams for toss at the center of the court and let them choose the court or the turn to raid.

- iii. The raider should start chanting or kabaddi-kabaddi after five seconds of crossing the center line and continue it until he/ she remains in the opponent's court.
- iv. If the raider stops chanting or cannot cross the baulk line, the raider will be out and the opponent group gets one point.
- v. All the anti-raiders who are touched by the raider while chanting will be out. They will also be out if the raider crosses the march line at the time of trapping him/ her. The raider's team gets the same number of points on the basis of the number of out- players of the opponent team.
- vi. Generally, the lobby area cannot be used during the game, but it can be used after struggle.
- vii. The team can revive the same number of its players on the basis of the number of pursued players of the opponent team during the game.
- viii. The team gets a lona if all the players of the opponent team are made out before the determined time. The team gets two points for lona. All players will be revived and they can enter the court to play the game again after giving a lona.
- ix. The team which scores more points during the determined time will win the match.

7. Kho- kho

Kho- kho is a group game played between two teams of chasers and runners. A specific rectangular sized court and specific time of 9:5:9 minutes is required to play this game. The active chaser should give a 'kho' on the back of a passive chaser looking at the runners. When the passive chaser gets "Kho" he/ she becomes an active chaser and starts chasing the runner intending to touch them. Lime powder (chuna), a whistle, a measuring tape and a pole, etc. are required to play this game.



Basic Skills for Kho-kho

Kho-kho is mainly based on touching, chasing and running skills. The players will be able to develop the habit of playing higher level matches only after they have practised these skills regularly. So, the following practices can be applied to develop chasing and running skills.

a. Chasing Skill

Kho-Kho is played between two teams of runners and chasers having 9/9 players each. Nine runners are divided into three groups consisting of three members each. The first group enters the court. The chasers try to chase and touch the runners and send them out. When the active chaser touches the seated chaser facing to the opposite direction on his / her back with a “Kho”, the seated chaser turns into the active chaser. When the seated chaser gets “Kho”, he/ she becomes an active chaser and starts chasing the runner. As soon as the first group of the runners are out, the next group of runners enters the court. After the runners play for nine minutes, they become chasers. There will be an intermission of 9 minutes between two halves of the 9/9 minutes’ play. Each half consists of two turns of 9/9 minutes with an interval of five minutes. The team which gets more points during the play (specific time), wins the match. The following stages / steps are to be taken to give “Kho”.

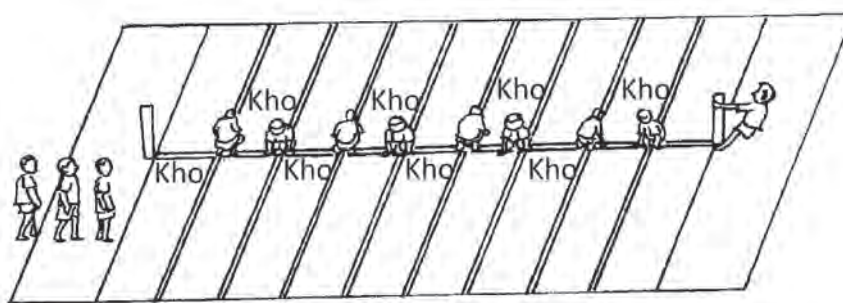
i. Giving Kho

The active chaser gives “Kho” to the seated chaser to touch and out the runner observing the closeness of the runner. Generally, “Kho” can be given in three ways:

simple kho, early kho and late kho. If the chaser pretends to be giving kho but doesn't give kho, this is called "Fake Kho". The active chaser gives kho to the nearest seated chaser from the runner sending him to touch the runner and h/ she sits in the square where the seated chaser was sitting.

Activities

Students should be divided into two groups. One group should stay in the squares as shown in the picture no -18 below. When the teacher says "Go", the student should give "kho" as shown in the picture. The player who gives kho should stay in the square and the one who gets kho goes to give kho to another friend. The student who gets kho at last should run ahead around the pole and should go and stand at the back of the line. If this exercise/ practice is regularly done, the students can develop the arts and skills of giving "Kho".



ii. Taking Direction

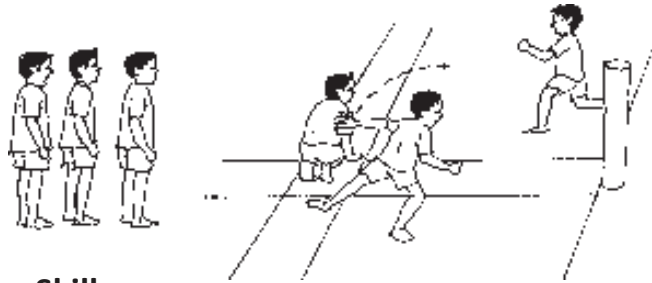
In course of chasing the runner, the active chaser either goes from one post to another post or gives kho to the nearest passive chaser observing the runner. After getting kho the active chaser can move only in one direction. The active chaser should move/ proceed / run to the same direction where he / she is facing. He / she is not allowed to turn back and run changing the body direction.

Activity

Students should stand in the "Kho-Kho" court in a line. Among them one should turn to the opposite direction and the front most student in the line should give "Kho" to his/ her friend. The student who has got kho should run straight ahead of the cross Lane and go back and stand at the back of the line from the facing direction. This practice should be done regularly.

iii. Moving around the Post

The active chaser cannot change the side/ direction on his / her own while chasing the runner. If s/he has to cross the center Lane, either he /she has to give “Kho” to another friend or has to move round the pole if s/he wants to change the direction without giving “Kho”. This skill is called ‘moving round the pole’ in Kho- Kho game. The practice of early kho, late kho and fake kho can be done to develop this skill.

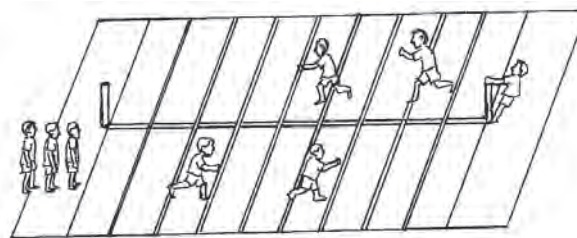


b. Running Skills

The way of running away deceiving the active chaser or not letting him/ her touch when the active chaser comes to touch the runner is called the running skill. The skill of deceiving the chaser can be developed if the runner runs jig-jag (left and right) from the centre line considering the position of the chaser. It requires more practice in order to develop running skill. The runners can run any way they like inside the court while the match is going on. The runners are not allowed to touch or obstruct the chaser during the game. In order to win the game and be safe from the chaser, the runner should practice running in a single chain or active chain deceiving the chaser.

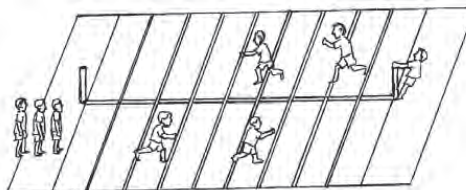
Activity

Students should stand in a line near the post in one side of Kho- Kho court. When the teacher gives the signal, they should run one by one in turn around the post touching it with both hands, then go back and stand at the end of the line. The practice or exercise of this game should be regularly done.



Rules of Kho- Kho Game

- i. Among 12/12 players of the participating teams, 9/9 of them should be present in the court and 3/3 should remain out as extra players before the game starts.
- ii. The referee should declare the runner and the chaser with a toss calling both team captains in order to begin the game.
- iii. The active chaser can't turn back or change the direction from which he/she is facing during the game. But s/he can turn touching the pole or moving round it.
- iv. The active chaser can't cross the center lane.
- v. The chaser's team gets one point if s/he touches the runner or the runner plays foul during the game.
- vi. The active chaser should give kho to the player who is turning his/ her back towards him/her(active chaser).
- vii. After getting kho, the active chaser should move only to the direction where his/ her face or shoulder is facing from the line.
- viii. Each team should play two innings of 18/18 minutes matches as chaser for 9 minutes and runner for nine minutes.
- ix. Only the chaser's group is awarded the points in this game.
- x. If both teams score equal points in full time (full innings), one more inning will be played. If they score equal points again, the team which scores the points in less time will be declared the winner.



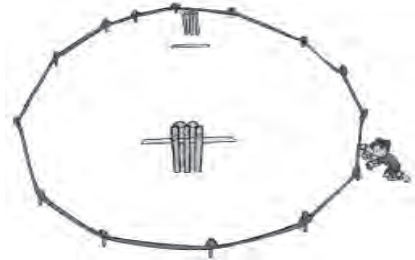
8. Cricket

Cricket is a group game played between two teams having 11/ 11 players in each side. The game is played with a ball and a bat. The ball is made up of leather or other materials. A lengthy rectangular sized, plain and natural green field is required to play this game. In the center of the field, a pitch having 2.64 m width and 20.12 m length is constructed. On the both sides of the pitch, three stick like stumps are placed. Two batsmen from the batting team bat (go for batting). If one of them is out, another player from the same team is substituted to play in his/ her place. One inning will be completed when ten out of eleven players in a team are out or at the completion of determined overs. Then, the turn for batting by the previous fielding

team begins. The team which makes more runs will win the match.

General Rules for Cricket

- i. The toss winning team will be given chance to choose batting or fielding.
- ii. Without the consent of both captains and the umpire, the pitch cannot be changed.



- iii. The batsman can make runs by running on the popping crease while the batted ball is moving.
- iv. If the fielding team catches the batted ball before it drops on the ground, it is called catch out.
- v. If any of two bails fall down from the stump hit by the ball or bat, the batsman will be out.
- vi. If the batted ball crosses the boundary of the field rolling on the surface, the batting team will be awarded with four runs (chauka) and if the flying ball crosses the boundary in the air, they get six runs (chhakka).

Exercise

1. Write the method of doing overhead service in volleyball.
2. What is the importance of setting in volleyball game? Write.
3. What are the skills that a goal keeper uses in order to prevent goal in football? Write.
4. Differentiate between bounce pass and one hand pass in basketball.
5. What are the basic skills of kho-kho? Write.

Unit 6

Athletics

Generally, athletics includes the activities of walking, running, jumping and throwing. It is also called track and field event because running and walking are done in a track and jumping and throwing are done in a field. Athletics includes running, jumping and throwing, it is considered a fundamental activity for all kinds of games. Therefore, children should be involved in different events of athletics.

1. Long Distance Running

Race above 1500 meters is called long distance running. To run a long distance, endurance of blood circulation, respiration and muscular system must be developed. Long distance running includes different distances of running such as 3,000m, 5,000m, 10,000m and marathon 42.195km. Participation in long distance running requires long and consistent training.

2. Relay Race

The race which is run by passing a baton to the member of the team is relay race. Each team has four participants. The first runner runs with the baton in his hand and passes it to the second runner after he has run his distance and the baton is being passed likewise to the third and the fourth runner after the previous runner has finished his distance and the fourth runner completes the race with the baton in his hand.

Generally, relay race is of 4×100m or 4×400m. In 4×100m race each runner runs about 100 meters and hands over the baton to his another teammate and in 4×400m race, each runner hands over the baton to his next teammate in every 400 meters. To handover and receive the baton, an area of 20 meters is maintained.

Size of Baton

Length: 28 to 30 cm

Circumference: 12 to 13 cm

Weight: 50 gram (at least)



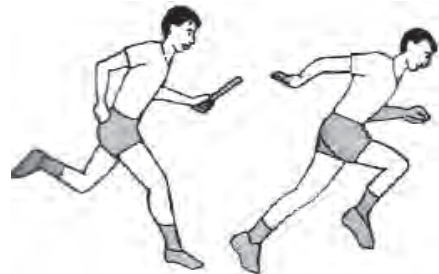
Ways to Hold the Baton before Race

The runner should start the race in the crouching position. The hand should be beyond the start line. But the placement of the baton ahead of the start line does not make mistake.

The baton may be handed over to the fellow teammate in two ways which are discussed below.

A. Upsweep Technique

The technique of handing over the baton to the next runner by keeping his palm up is the upsweep technique. The receiver of the baton should have his thumb separated from the rest of the fingers which should be stuck to one another.



B. Down Sweep Technique

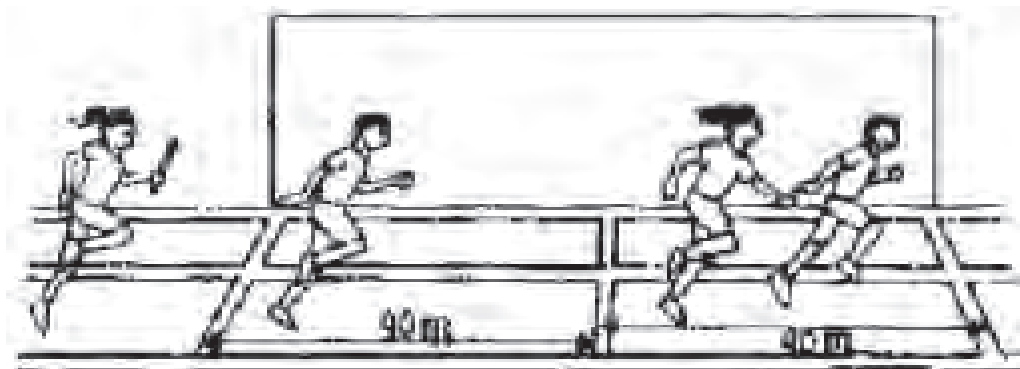
The technique of handing over the baton by the first runner to the next runner by keeping his palm down is the down sweep technique.

Activity

The students should make a pair of runners. One should be handed the baton and make him stand at a distance of 20-25 meters. The baton holder should be made to run and the next runner should be made ready to receive the baton. If A is the first runner, B should stay alert to receive the baton to run his part. When A comes near, B should run to receive the baton. While receiving the baton, the right hand should be stretched back to the first runner. While receiving the baton, the second

runner should be looking ahead. The way of handing over and receiving the baton depends upon the runners themselves.

Takeover zone (20)



Some Important Rules of Relay Race

- Each team should have four runners. The runners are not allowed to change their track in 4×100 race.
- The baton should be handed over in the fixed area only. It should not be handed before the first line of the fixed area and not after the last line of it.
- The baton must not be thrown to the next runner. It must be handed over in the right way. If the baton falls while handing over, the same runner who drops it must pick it up.

6.3 Long jump

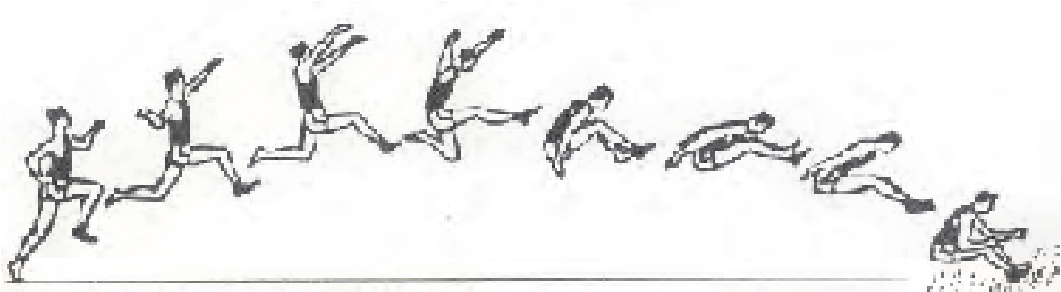
While jumping hurling the body from the 'Take off board' to the maximum distance possible is called long jump. To cover the maximum distance possible, the player should take off by coordinating the position of the hands, legs and body at high speed.

A) Approach Run

The speedy run along the 30/40 meters track before jumping is called approach run. While making an approach run, one should run slowly at first and steadily the speed should be increased.

B) Take Off

After making the approach run, the player should leave the ground by pressing the ground hard by one foot. It is called take off. While learning take off at the beginning stage, the player should measure the distance up to the take off board by counting the number of steps and the approach run should be made on the same basis. The more the practice of taking off, the better will the take off be.



C) Flight

The period since taking off till landing is called flight. Immediately after take-off, the player should coordinate his hands, legs and body as if walking in air to reach the maximum distance possible. In the beginning, the players can practice on a bench or from little high places.

D) Landing

The skill of landing is the ability of the player to land on the landing ground by stepping with both the feet and hurling the body ahead. After landing the distance jumped by the player is measured in meters, feet and centimeters. The one who jumps the furthest is declared the best

6.4. High Jump

The skill of jumping over the highest possible height in a vertical position against the gravity is called high jump. The tall players with strong legs can perform better. Generally, a player has to run from the semi circled runway area of 10m radius and take off when he nears a crossbar. The stages of high jump are as follows.

A) Approach Run

During high jump, a player has to run along a semi-circular runway area and take off when he comes to the check mark by taking few more steps. It is called approach run. It is run to multiply energy. It is done at an angle of 35° - 45° .

B) Take off

The skill of jumping over the crossbar after approach run is called take off. The flight of the body should be at an angle of 45° . Strong legs should be used to take off.

C) Flight

The duration the body remains in the air since take off till landing is flight. The skill of coordination of the hands, legs and body is required during flight. Flight depends on the different techniques of high jump.

D) Clearance

The jumping over the crossbar without touching or disturbing it is called clearance. It is done by considering the position of the body and the crossbar.

E) Landing

The last stage of high jump is landing. While jumping, the player should land without touching the crossbar and without hurting himself. This determines the success of the player.

6.5 Shot-put

Shot put is a kind of game of throwing. Shot is an iron object of the weight of 2.7kg -7kg. It is played by throwing the shot to the furthest distance possible from the shot put ground by holding the shot at the shoulder height. The player must be strong, healthy and active to play this game.

Steps of Shot Put

A) Holding

The shot should be held by balancing it on the little finger and thumb and the middle three fingers should hold it without putting any pressure on the palm. While holding

the shot, the elbow should be positioned as high as the ear and arm should bear the weight. It is the first skill.

B) Stance

In the stance position, the player should remain inside the launching circle, holding the shot in hand and bracing the front leg firmly on the ground. The shot must not be below the height of the chin at this stage.

C) Gliding

Before throwing the shot, to multiply speed in the shot put ring, the body should be balanced on one leg and by slowly dragging another foot; the player should swiftly make a round turn. It is called gliding. The more speed one gets in the shot put ring, the farther the shot can be thrown.

D) Throwing

After gliding, the shot is hurled towards the throwing sector. While throwing, the player may touch or press the frontal part of the stop board but must not step or touch on it.

E) Reverse

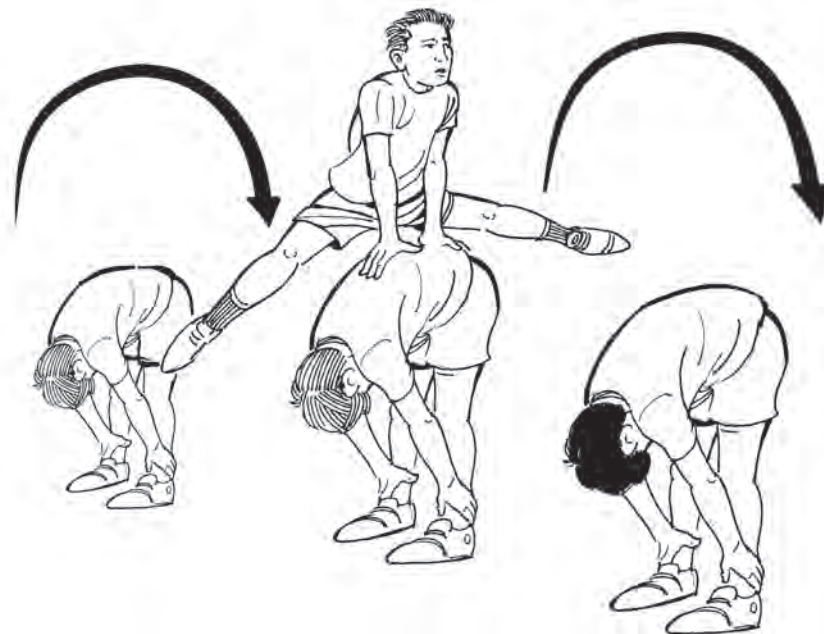
Reverse is the process of turning the body from the direction of throwing towards the opposite direction to maintain balance. It is required to stop the player from stepping on the stop board or going out of it.

6.6 Exercises of Athletics

Athletics is the fundamental activity for an entire physical activity and skills of games. The activities like walking, running, jumping and throwing are included in athletics. Before teaching the activities of athletics, the secondary activities and exercises have to be practiced. Some such activities are as follows.

A. Jumping Exercise

To increase the skill of jumping in athletics, the exercises of jumping should be done. First of all the students should stand in line. Then the group of 10/10 students should be formed. Out of 10, 5 students should sit on all fours maintaining a distance of 2



meters between them and the rest 5 should in turn jump over them. This activity should be repeated with the rest five, too.

B. Exercise of Legs in Pair

In the activities of athletics, the students have to do much running, jumping and throwing. To learn the skill of running and jumping, legs have to be well exercised. The problems of sprain and cramps can occur if the skills of jumping and running are learnt without exercising legs properly. Therefore, to exercise, the students should sit in pairs as shown in the picture. With the call of start of the teacher, the students should push each other with legs. After pushing for 30-35 seconds they should rest for a while. Then, repeat the same activity. It should be practiced for 10-15 minutes in repetition.

Exercise

1. What is meant by athletics?
2. What is meant by baton?
3. What are the steps of long jump?
4. What are the major rules of relay race?