

**HEALTH AND  
PHYSICAL EDUCATION**  
**Activity Book**

**Standard**

**X**



**Government of Kerala**  
**Department of General Education**

**State Council of Educational Research and Training (SCERT)**  
**Kerala**

**2019**

## THE NATIONAL ANTHEM

Jana-gana-mana adhinayaka jaya he  
Bharatha-bhagya-vidhata,  
Punjab-Sindh-Gujarat-Maratha  
Dravida-Utkala-Banga  
Vindhya-Himachala-Yamuna-Ganga  
Uchchala-Jaladhi-taranga  
Tava subha name jage,  
Tava subha asisa mage,  
Gahe tava jaya gatha.  
Jana-gana-mangala-dayaka jaya he  
Bharatha-bhagya-vidhata,  
Jaya he, jaya he, jaya he,  
Jaya jaya jaya jaya he!

## PLEDGE

India is my country. All Indians are my brothers and sisters.

I love my country, and I am proud of its rich and varied heritage. I shall always strive to be worthy of it.

I shall give my parents, teachers and all elders respect, and treat everyone with courtesy.

To my country and my people, I pledge my devotion. In their well-being and prosperity alone lies my happiness.

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*Dear learners,*

*Communication, health care, etc. are the essentials of social life. Fitness and well being is fundamental to human life just as Language, Arts, Science etc. It is for the same reason that health and physical education is given careful consideration in the contemporary education system. Through Sports we gain not only a healthy state of well-being but also the culture to mingle, share and overcome challenges for advancement in life. It is by way of games and physical activities, we learn to take decisions at the right time, and lead a disciplined and healthy life. For that reason, we cannot separate Sport and Education.*

*You are tomorrow's nation builders. A healthy and progressive society is necessary to conserve the unity and integrity of any nation. We are bound to carry out this venture. Work hard to achieve it.*

*The activities of this textbook are designed focusing on such objectives. I hope you would internalise the contents of this textbook with the help of your teachers.*

*With regards,*

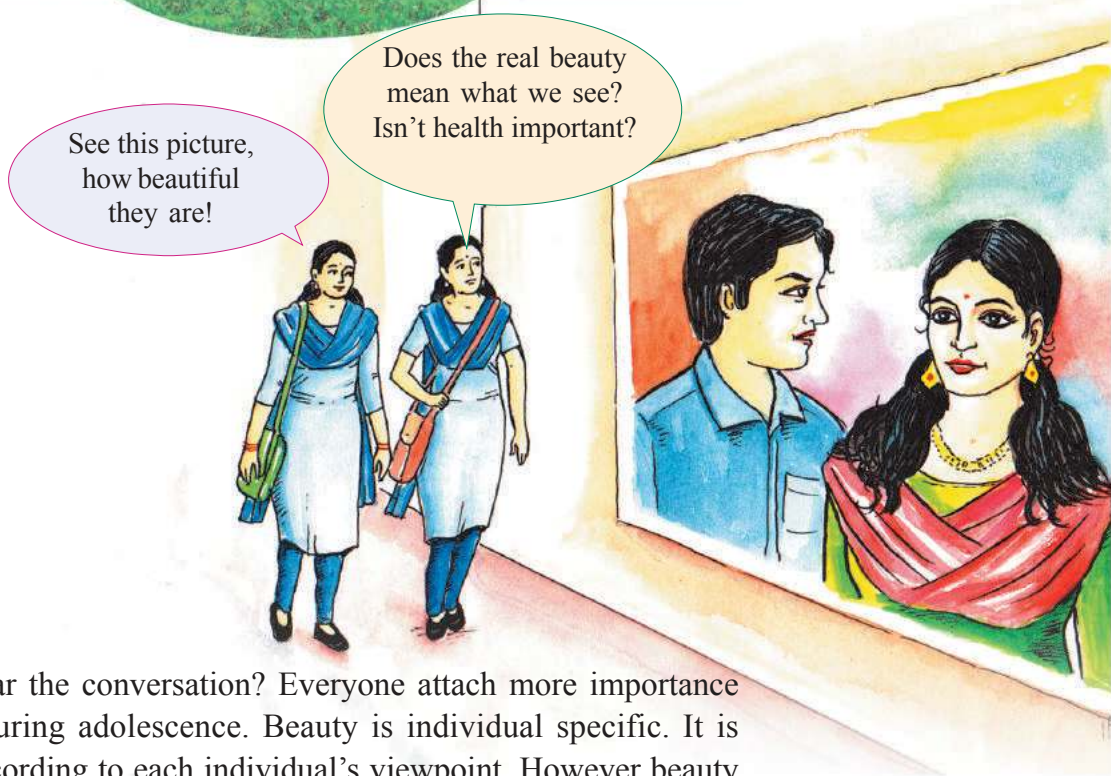
**Dr. J Prasad**  
Director, SCERT

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# 1

## An Aesthetic Body and Health through Exercise



Did you hear the conversation? Everyone attach more importance to beauty during adolescence. Beauty is individual specific. It is different according to each individual's viewpoint. However beauty is there in everyone.

There are certain factors which influence health and beauty. Let us familiarise some of them.

1. Appearance
2. Body Posture
3. Hygiene
4. Proper Nutrition
5. Rest

### 1. Appearance

Strong muscles help to improve appearance. The lack of exercise in day to day life leads to increase in fat and that will result in slight changes in the body structure. Fat is stored mainly in the abdomen,

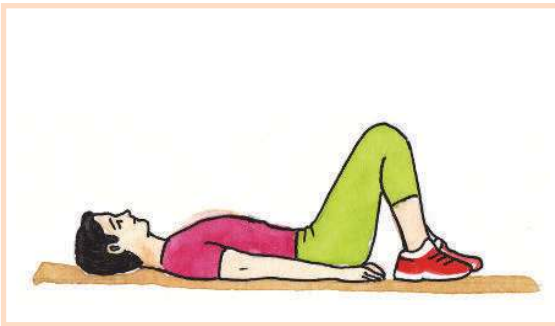
thighs, upper elbow, neck, shoulder etc. Paunch is formed due to the fat that is deposited in the abdomen and it makes one's appearance disfigured. This problem can be solved only through regular exercise. Let's familiarise some exercises.

### Alternate Heel Touch



Lie on the floor in the supine position with the knees bent as shown in the picture. Lift the trunk from the floor as it tightens the abdomen muscles and move leftwards to touch the left heel with the left hand. Do the same activity using the right hand on the right side. Repeat the activity according to your capacity.

### Glute Bridge



Lie on the floor in supine position with the knees bent as shown in the picture. Place the hands on both sides closer to the body. Lift your abdomen to the maximum and hold it for 10 seconds. At this moment the feet should be fixed on the floor and body weight should balance on the shoulder and the foot. Repeat the activity for at least 10 times.

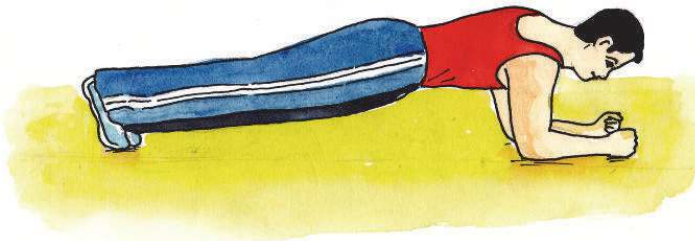
Didn't you familiarise two exercises which help to improve your appearance and abdominal strength? Find some exercises for this purpose with the help of ICT and note it down.

## 2. Body Posture

Body posture is a right proportion of the body parts. Importance should be given to maintain a good body posture during adolescence which is a major stage of growth. Have you ever thought of maintaining a right posture while standing, walking and sitting? Body posture is a major aspect of beauty. You have to follow the primary principles of body posture while standing tall, sitting straight, walking tall etc. When you try to stand tall, sit straight and walk tall the muscles becomes strengthened. Body functions like blood circulation, efficiency of nerves and respiration will become easier. Let's familiarise some exercises which improve body posture.

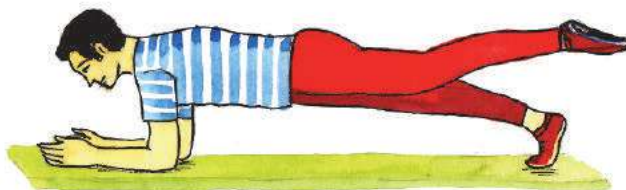
### Basic Plank

As shown in this picture, place the forearms on the floor at a shoulder distance and raise the knees and body thus bringing the body to a straight line. Remain in this position for a maximum of 30 seconds. Repeat this activity according to your capacity.



### Plank with leg lift

As shown in this picture, place the forearms on the floor at a shoulder distance and raise the knees and body thus bringing the body to a straight line. Raise a leg and lower it after 5 seconds. Continue the activity with the other leg. Do this 10 times on each side.



Contract and tighten the abdomen to maintain the position. If the abdominal muscles are weak this exercise could not be continued for a long time. These are important muscles which maintain body posture.

Find and write more plank exercises with the help of ICT.

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### 3. Hygiene

Hygiene is the base factor of health. The clothes used when engaging in sporting activities should be cleaned and dried in sunlight and should not be shared with anyone. Shoes, gloves, cricket pad etc should be dried under sunlight after use. The ultraviolet rays in sunlight will destroy bacteria and fungus in damp clothes.



Oral Hygiene



Bathing Habit



Hair care



Foot care



Toilet Training



Hand care



Coughing and sneezing precautions



Home Hygiene



#### 4. Proper nutrition

Each one needs food containing nutrients in different quantity and quality according to the physical activity and body nature. Drink at least 2 litres of water in a day for maintaining a supple skin. Take 300 ml of water at regular intervals. This helps in the absorption of water and makes the complexion better.

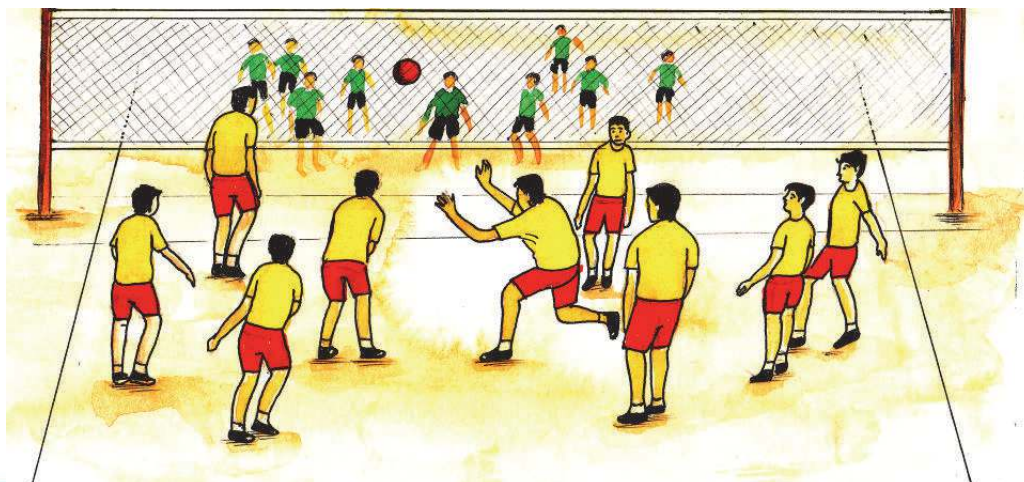
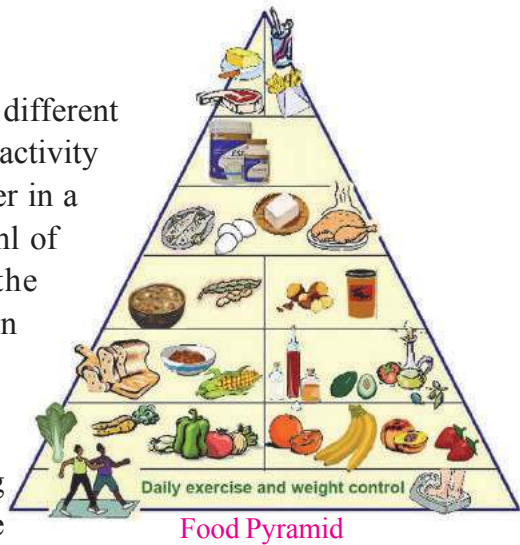
#### 5. Rest

Rest is as important as exercise. The rebuilding of worn out muscles, improvement of immune system, growth and development happens during rest. In its real sense rest is the Rapid Eye Movement that takes place during deep sleep. At this stage, information is consolidated and memory will be sharpened.

Games and exercises help to improve and maintain our body health and body aesthetics. Let's familiarise a game in which everyone can easily participate.

#### Throw ball

Form two teams of 9 students as per the instructions of the teacher. Any of the students can throw the ball to the opposite court and start the game. The opponent will get a point if the ball is thrown outside the court or if the ball falls in the server's own court with or without touching the net. If the ball touches down the opposite court, the serving team will get a



point. The team which get a point will continue the service. The team which gets 15 points will win the game.

Let's familiarise with a similar game named volleyball.

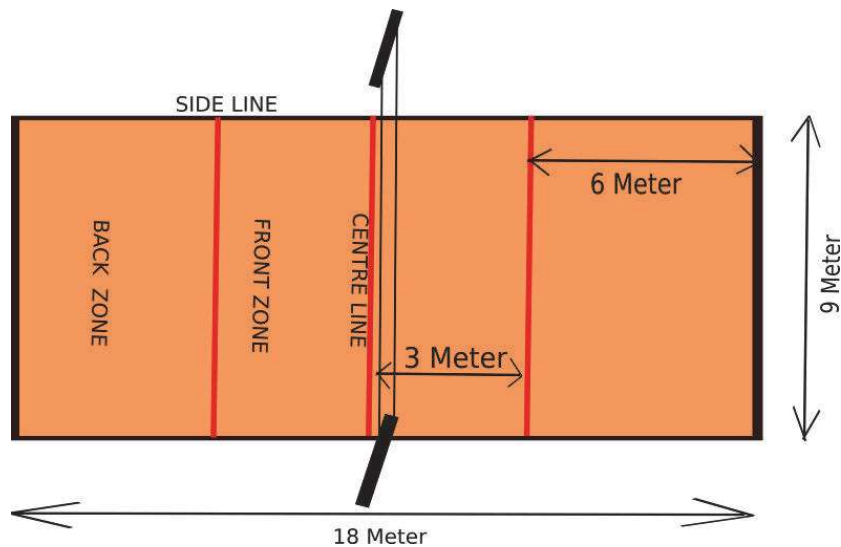
### Volleyball

In 1921, the game volleyball was introduced in India through an organisation named YMCA in Madras. At that time itself volleyball became popular in Kerala. The popularity increased just because it needs only a little space. Players like Jimmy George, KC Elamma, K Udayakumar, Ciril C Velloor, Tom Joseph, and KJ Kapil Dev are some of the best volleyball players in Kerala of all times. The organisation, FIVB controls and encourages this game which is popular around the world. Similarly VFI controls and encourages the game in India.



Jimmy George

A volleyball court is 18 m long and 9 m wide. The height of the net is 2.4 m for men and 2.24 m for women.



### How to play

There are 12 players in a team out of which six players play at a time. The team which gets 25 points will win the set. If both team

gets 24 points, the team which gets two points lead will win the set. In a match of best of 5, the team that gets 3 sets will be the winner. The fifth set is fixed at 15 points. As per rules, in the fifth set a margin of two points lead is needed to win the game and match.

Prepare a note on the activities which you do to maintain healthy aesthetic body.

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There are many training centres in our locality which helps to improve body aesthetics and physical fitness. They provide training for weight lifting, aerobics and zumba dance. There are many job opportunities for the trained people to become a trainer.

### *Assessment activities*

1. Explain the factors which influence health and beauty.
2. Explain some exercises for achieving body aesthetics.
3. What are the benefits of achieving body posture?
4. Explain the importance of hygiene in maintaining health.
5. Explain the importance of proper nutrition and rest for maintaining body aesthetics and health.

There are some people who maintain better health through systematic lifestyle. Let's get introduced to a person who excels in the field of sports.



Leander Paes who excels even in his forties was the first Indian to win an Olympic medal in Tennis (Bronze medal in 1996 Atlanta Olympics).

### *Extended Activity*

1. Collect and prepare a chart explaining the types of exercise for maintaining a good physical appearance and body posture with illustration.
2. Prepare a table listing the achievements of famous Volleyball players from Kerala.

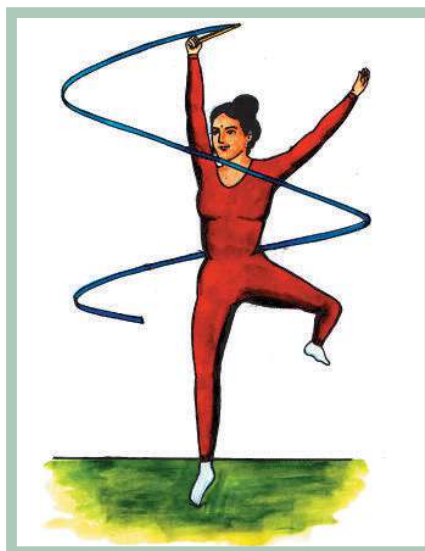
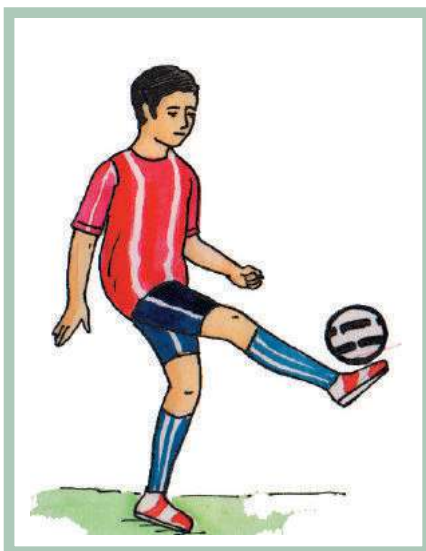
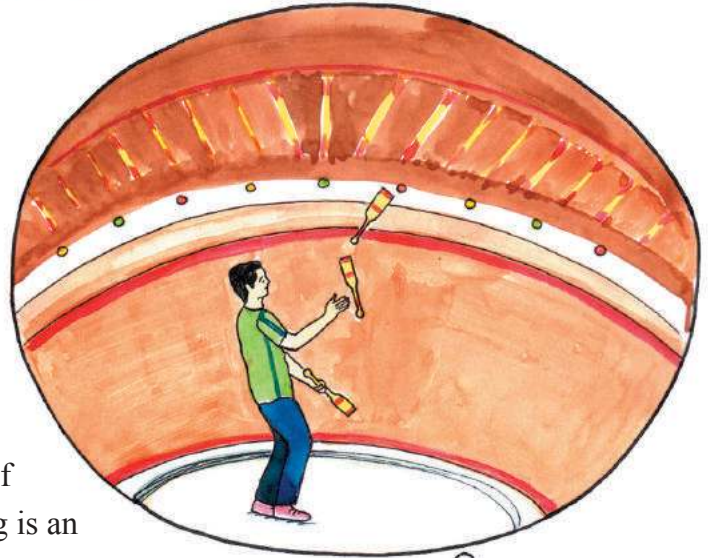
# 2 Sporting Activities and Coordination

"Can I do this?"

Manu shared his thought to his teacher. The teacher explained.

The coordination of different muscles in our body, organs and nerves (neuro-muscular coordination) help us to do these kinds of activities. This is Juggling. Juggling is an activity in which one or two objects are tossed and caught continuously. Manu, you can also do this through systematic training".

The activities like juggling in football rhythm exercise in gymnastic are examples of the activities that require coordination.



If so, what is coordination of muscles?

**Coordination:** Coordination is the ability to combine movements of different muscles in our body.

Coordination happens through the synchronisation between the activities of nervous and muscular systems. Coordination is the combination of seven different abilities.

They are rhythm ability, reaction ability, balance ability, adaptive ability, coupling ability, differentiation ability and orientation ability. Identify and write some sports activities which need coordination.

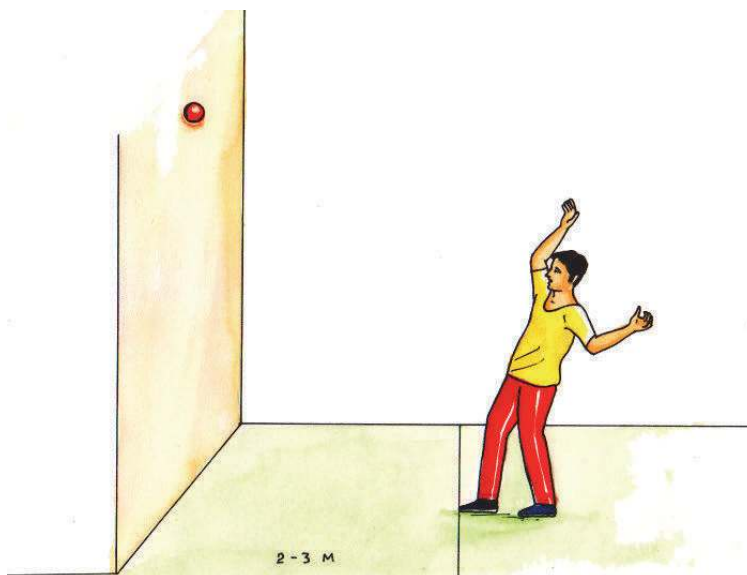
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The measure of coordination will be individual specific. Now we can know more about coordination through an activity given below. This is an approved method for testing our coordination.

#### **Alternate hand wall toss test**



How to do the test?

Stand at a distance of two to three meters facing a straight wall as

shown in the picture. Throw the ball with one hand to the wall and catch it with the other.

**Assessment**

The total number of times this activity is performed in 30 seconds should be noted below. Also find out the rating you got as per the grading method given below and note it down.

Grading method	
Rating	Score
Excellent	above 35
Very Good	30-34
Good	20-29
Average	15-19
Below Average	below 15

The score I got:.....

The grade I got:.....

**Some activities to improve coordination**

1. Take towels in both hands and throw alternatively upward and catch it. This activity is possible with hand and eye coordination

Try to do this activity for 30 seconds continuously.

Try to do this activity using 3 towels and then 4 towels.

Try to do while walking.

Let's familiarise a similar activity.

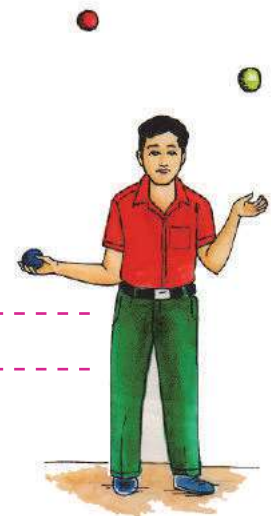
2. Take balls in both hands and throw it alternatively upward and catch it. First do this activity with two balls and continue this activity by increasing the number of balls.

Continue this activity according to one's ability.

Did coordination occur while doing both these activities? Have you practiced similar activities? Write your experience.

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The activities like Aerobics and Zumba dance are done for improving the coordination and physical endurance.

**Aerobics:** This is a sport activity done with or without music for a long duration. This exercise improves the oxygen consumption and distribution in our body. An American named Kenet H Hooper, took the initiative to popularize this activity.



**Zumba dance:** Zumba is a combination of dance and aerobic exercise performed with a background of music. Colombian dancer Alberto Betto Fers took the initiative to popularize this activity.



Watch videos of Aerobics and Zumba dance with the help of ICT and try to practice it for 30 to 40 minutes.



**The following are the benefits of doing Aerobics or Zumba dance daily.**

- Improves the cardio-respiratory capacity.
- Improves the functioning ability of heart muscles.
- Decreases blood pressure.
- The mind and body gets refreshed.

We have learnt about aerobic exercises

Practice 30 to 40 minutes with the help of music and write down the steps followed.

Eg: Lift the right knee upward while raising both the hands over the head.

Step 1 .....

Step 2 .....

Step 3.....

Step 4.....

Step 5.....

Step 6.....

Step 7.....

Step 8.....

Does coordination occur while doing Aerobic or Zumba ? Write your experience.

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Another activities that require hand, eye-coordination is Wushu. Wushu is a game which needs lot more coordination. Though it is a less popular game in our society it is a recognized martial art and many students practice it.

**Wushu**

Wushu was first formed in China in the 19th century. It aims to synchronize various martial arts in China. 'Wu' means military or martial and 'shu' means art. For competition purpose Wushu is



performed in two categories. It was an event in the 35th National Games held in our state. The School Games Federation of India organizes the competition. Two different forms of this martial art are given below.

### 1. Taulu (Performance form)

This is an individual performance form. This is practised with or without weapons which are small and big.



### 2. Shanshu (Fighting form)

This is a modern martial art that includes wrestling, boxing and kickboxing.



We have familiarized some exercises which improves coordination. Likewise let's get familiarised with few yogaasanas which help us to improve coordination to a certain extent.

### Yoga

Yoga is a valuable gift of ancient Indian culture. Yoga is the union of body, mind, thought and action. It also helps to achieve comprehensive health and wellness. Yoga is not only physical exercise but also a routine in which synchronisation of body, senses, mind and intelligence occur. In this class, let's familiarise different yogasanas and a pranayama named Bhramari.

### Garudasana


The name Garudasana is given because sharp focus and concentration like eagle can be achieved through practice.

Various phases are given below to practice Garudasana. Observe each step and practise it with the help of your teacher.




Garudasana

**Stage 1**



Stand erect as shown in the picture.

**Stage 2**




Raise the right leg and bring across it in front of the left leg and lock it behind the left calf muscle above the ankle. Raise both hands sideward in line with the shoulder .

**Stage 3**




Now move the hands forward and intertwine both hands in such a way that the right hand comes above the left hand. The palms of each hand presses one another and is positioned in front of the nose.

**Stage 4**



Gradually bend the knee and lower the body without bending the spine.

**Stage 5**



Slowly return to the normal standing position.

**Benefits of Garudasana**

- Improves the flexibility at the joints and strengthen of the muscles
- Improve body balance.
- Improves concentration.

Explain your experience when you practised Garudasana.

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### Vakrasana

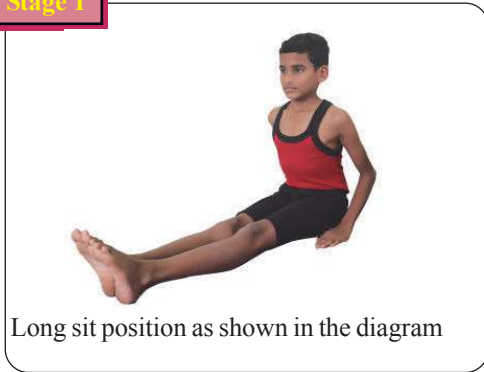
The name Vakrasana is given because the trunk is twisted to the opposite side in a curved manner while sitting.

**The different steps for practising Vakrasana are given below. Closely observe each step and practise it with the help of the teacher.**



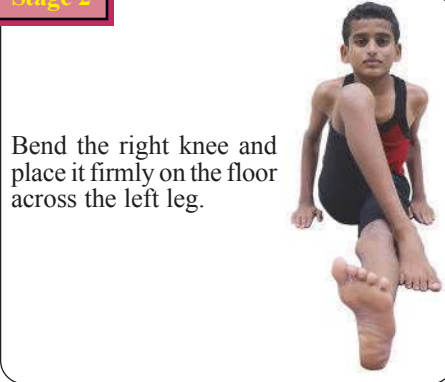
Vakrasana

#### Stage 1



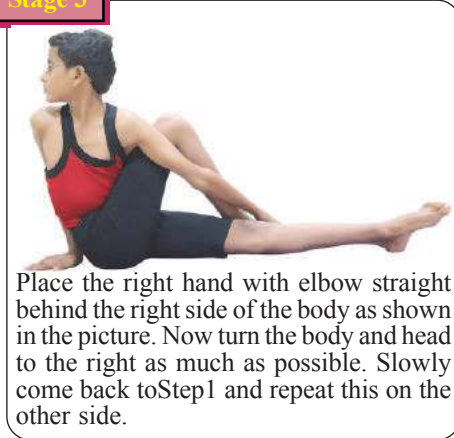
Long sit position as shown in the diagram

#### Stage 2



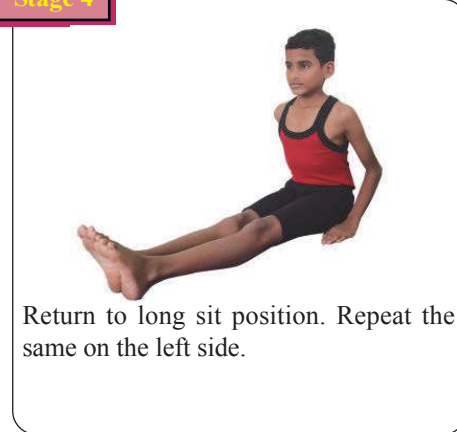
Bend the right knee and place it firmly on the floor across the left leg.

#### Stage 3



Place the right hand with elbow straight behind the right side of the body as shown in the picture. Now turn the body and head to the right as much as possible. Slowly come back to Step 1 and repeat this on the other side.

#### Stage 4



Return to long sit position. Repeat the same on the left side.

### Benefits of Vakrasana

- Helps to turn the spine to either side comfortably.
- Helps to improve chest expansion and gives strength, flexibility to abdominal muscles.

Explain your experience when you practised Vakrasana

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### Sarvangasana

Sarvangasana is an asana which is beneficial to all organs of the body.

**Different steps in practising Sarvangasana are given below. Closely observe each step and practise with the help of your teacher.**



Sarvangasana

#### Stage 1



Lie down in supine position as shown in the picture.

#### Stage 2



Breathe in slowly and lift both the legs vertically upward from the floor.

#### Stage 3



Slowly lift the torso from the floor. Then support the torso using the palms of both hands by placing the elbows firmly on the floor. Position and hold the body perpendicular (90°) to the floor. The jaws should touch the upper part of the chest.

#### Stage 4



Slowly breathe out. Release both hands from the hips and place it on the floor and slowly lower the body back to supine position.

#### Benefits of Sarvangasana

- Improves blood circulation
- Increases the supply of oxygenated blood to the brain.
- Increases the strength of neck and shoulder muscles.
- Helps to control mind.

Explain your experience when practised Sarvangasana.

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Let us familiarise “Bhramari”, an important Pranayama which helps to improve concentration of mind and decreases mental stress.

### Bhramari Pranayama

This is a breathing exercise which imitates the sound of a bee. Different steps in practising Bhramari Pranayama are given below. Closely observe each step and practise with the help of the teacher.



Bhramari Pranayama

#### Stage 1



Sit in sukhasanam with spine straight as shown in the picture.

#### Stage 2



Use the index finger of both hands to close the ears. The elbows of the hands should be held as shown in the picture.

#### Stage 3



Breathe in deeply to fill the lungs.

#### Stage 4



Now slowly and steadily produce a humming sound of the bees from the throat. Breathe out slowly while humming rhythmically.

#### Stage 5



Just two seconds before breathing out completely, stop and again breathe in and continue the process in step-4. Repeat the whole process (step3,4,5) atleast 7 times.

#### Stage 6



After the seventh repetition, continue keeping the ear closed for a while, feel and concentrate the resonance of the humming sound in the brain.

### Benefits of Bhramari Pranayama

- Helps to decrease mental stress.
- Helps to improve concentration and memory.

Explain your experience when you practised Bhramari Pranayama

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### *Assessment activities*

1. Write the name of three games which need more coordination.
2. Explain the benefits of doing regular exercise.
3. What is coordination? Explain some activities which help to improve coordination?
4. Coordination is the combination of which all abilities?

### *Extended Activity*

1. Prepare and exhibit a chart, including pictures, showing different types of Yoga asanas which help to improve coordination.
2. With the help of ICT collect and exhibit various coordination skills in physical activities and present before the class.



# 3

## Sports Free of Drugs



Liju noticed a piece of news while reading the newspaper. The report said that the organisers of 2018 Gold Coast commonwealth games, Australia disqualified two sports-persons. He showed the news to his Physical Education Teacher and sought details of the news.

The Physical Education Teacher told him that those sports persons were disqualified in connection with doping, because they violated the ‘No Needle Policy’ that was implemented by the organisers who found syringes in the camps where they were accommodated.

“What is ‘doping’?” asked Liju. The teacher explained, “Doping refers to the artificial and unfair methods adopted by some sports persons to improve their performance.” Certain medicines for the treatment of diseases and some stimulants are used for this. These are referred to as drugs. “Is there any health issue if we use these?”, continued Liju.

“Sure”, said the teacher. “There are many dangerous side effects to the body because of these drugs. These are not only dangerous to health, but also lethal.

During the Rome Olympics in 1960 Danish cycling star Knud Enemark Jensen collapsed and succumbed to death while participating in the event. Medical examination proved that he had used amphetamines and nicotiny tartrate.





Why do some sportstars resort to this method even though it is dangerous to health?

**What are WADA and NADA?**

In 1999, the International Olympic Committee decided to form a free agency to observe and test drug abuse among sportspersons who participate in international sports meets. In the same year, 'World Anti Doping Agency' was formed under the auspices of the International Olympic Committee and the governments of various countries, with Lousanne as the headquarters. It is this agency which prevents drug abuse in the field of sports and decides the methods to conduct tests. In all the international meets doping tests are conducted under the guidance of WADA. India is a founder member of this organisation. At the national level, National Anti Doping Agency was formed in 2005 with Delhi as the headquarters. At the national level, doping tests are conducted under the auspices of NADA for national level competitions.



“The desire to become winners, celebrities and wealthy through unfair means prompt some sportpersons to follow such methods. Along with the dangerous effects the use of these drugs may lead to severe forms of punishment including a lifetime ban from sports, if exposed. Resorting to treacherous ways to improve performance will tarnish the sportsperson, the society and the country he/she represents. Participants of national and international events are subjected to strict doping examination”, said the teacher. You have read the conversation between Liju and his Physical Education Teacher. List the names of sportspersons who remain a model to all, by performing excellently without using any drugs.

Drug abuse is common among Wrestlers and Weightlifters who require a lot of strength. Moreover some participants in Athletics especially long-distance runners, swimmers,

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cyclists, who need consistency in performance, shooters and archers who demand a lot of concentration use stimulants to improve their performance. The side effects of certain drugs are listed below.

Medicine	Side effects
Steroids	<ul style="list-style-type: none"> <li>• becomes violent</li> <li>• cardiac arrest</li> </ul>
Stimulants	<ul style="list-style-type: none"> <li>• high blood pressure</li> <li>• blocks in blood circulation</li> </ul>
Diuretics	<ul style="list-style-type: none"> <li>• renal damage</li> <li>• dehydration</li> </ul>
Hormones	<ul style="list-style-type: none"> <li>• forms blood clots</li> </ul>

### Blood Doping

‘Blood doping’ is a different mode of drug abuse. This is an attempt to improve the capacity of blood to carry more oxygen by increasing the number of red blood cells. Weeks before the competition, red blood cells from a sportsperson or any donor will be collected and preserved for injecting just before the competition. Erythropoietin is used to increase the number of red blood cells. Participants in competitions like long distance running which demand endurance opt for this method. This is at present banned.

#### Biological Passport

Biological Passport is the process of subjecting professional athletes to medical examination during different stages and recording the presence of various elements and substances in blood and urine (e.g. red blood cells). Instead of testing the presence of stimulants, if a remarkable variation is found in the data of Biological Passport, it can be assumed that the sportsperson is using drugs. If the sportsperson is found guilty, he or she may have to face a lifetime ban.

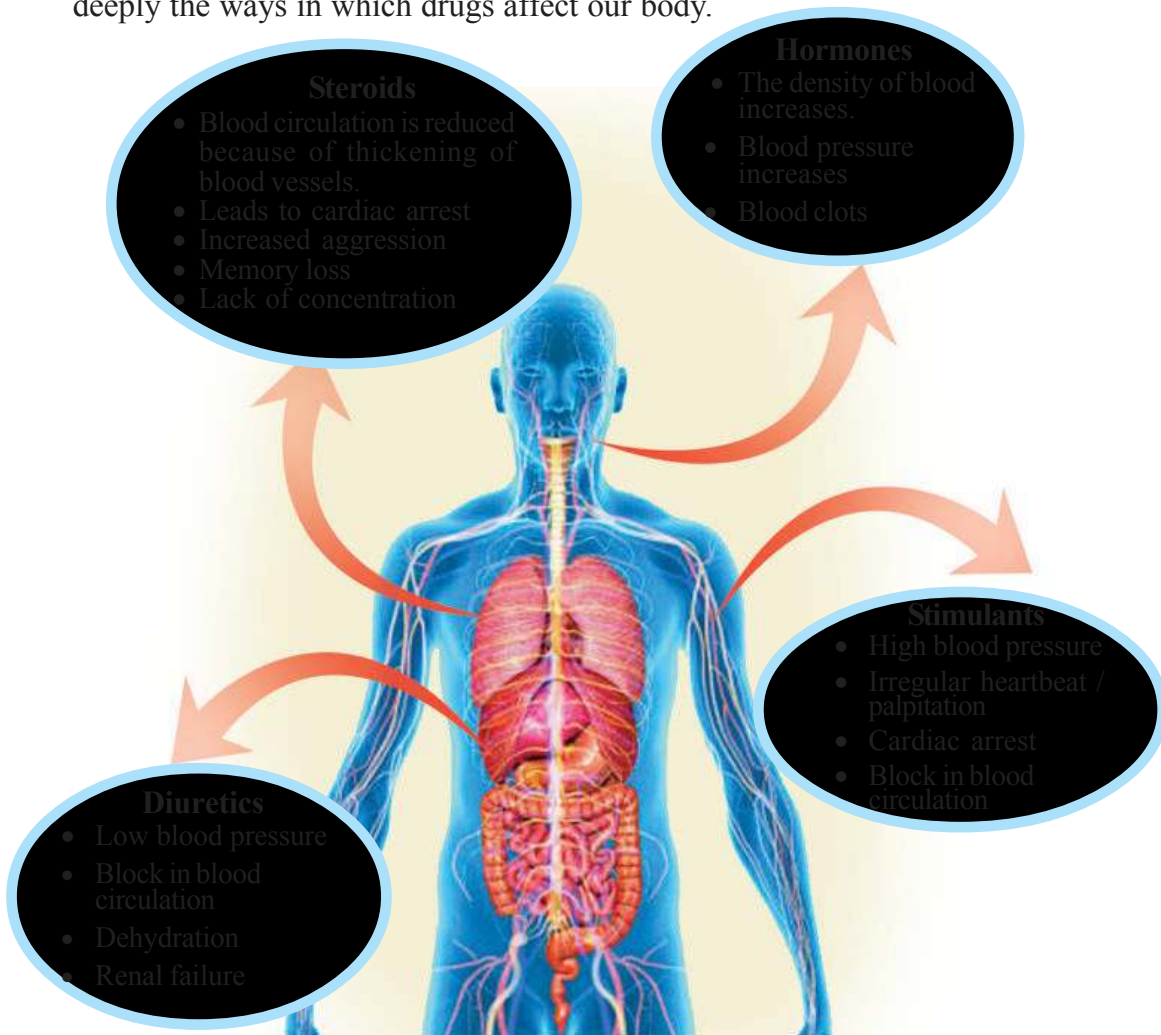
#### Side effects of Blood Doping

- The density of blood increases resulting in reduced blood circulation which leads to cardiac arrest and paralysis.
- Chances of contracting diseases remain high because of blood transfusion

- Leads to liver diseases
- Damages the pituitary gland

Look at the picture

You have understood the dangerous side effects of drugs on the body. By analysing the following diagram we can understand more deeply the ways in which drugs affect our body.



Haven't you understood the ill effects of drug abuse? The general feeling that one can achieve success through unfair means is not suitable for sports culture. Sportspersons, trainers and organisers are bound to conserve the sanctity of sports events. A performance in sport events can be made better through commitment, systematic training and intake of nutritious food. Concepts like 'fair play', which encourage participating in competitions without undue anxiety, with

**What is fair play?**

‘Fair play’ is the concept which upholds the internalisation of different values that are essential in sports just like the values in daily life, and their practical implications. It is the respect accorded to values such as a just competition, mutual respect, friendship, team spirit, equality, games that are devoid of drugs and stimulants, sincerity, solidarity, tolerance, care, excellence, happiness etc. Qualities that can be internalised inside and outside the playground are included among the factors of fair play.

mutual respect and keeping the rules and regulations of the sport, is a message that is given to the society.

Given below is a puzzle from the chapter you have learned. Fill the puzzle with the help of the teachers.

**Puzzle**

1	2		3		4			5		
E	B		D		A			F		
			6							
			S							
						7				
						W				
			10							
			H							
8										
N										
		9								
		A								

**Hints:**

**Downwards**

1. The stimulant used for blood doping.
2. Name the doping method that boosts the oxygen level in blood by increasing the RBC (Red Blood Corpuscles).
3. The stimulant that causes dehydration.
4. Name the stimulant used by Knud Enemark, the cycling star of Denmark in 1960 Rome olympics.
5. A method of playing which incorporate different values in our daily lives as well as in the sports field.

**Across**

6. The stimulant that causes aggressive behaviour in sport persons.
7. An agency which conducts doping tests in International Tournaments.

8. The agency which conducts doping tests in National Games.
9. The country where common wealth games was conducted in 2018.
10. The stimulant that results in blood clots in the body.

### Taekwondo

Taekwondo is a martial art that uses fists and the legs. This sport event existed in Korea almost two thousand years back. No weapon is used for this martial art. In Korean language 'Tae' means 'with the legs' and 'Kwon' means 'with the hands'. Taekwondo was demonstrated in



the Seoul Olympics in 1988. This became a part of the Olympic events since 2000 Sydney Olympics. There are a total of eight categories in the Olympic games. Four categories each for male and female participants.

Taekwondo competitions are held on rubber mats. The rubber mat will be 12m long and 12m wide. It is an official event in the Kerala State school games. Taekwondo is a sports event that requires strength. Let's familiarise a game that tests our strength.

### Pushing Back

- According to height the children are made to stand on the midline of the three lines.
- Divide the class into two teams by taking numbers alternately (1-2, 1-2, 1-2).



- The number ones should turn around and face the number twos and stand on either side of the mid line
- On the signal from the teacher the children try to push the opponent towards the line that is marked behind them. Push only in the straight line. Hands should not move from the shoulders of the opponent. The team that makes the maximum number of participants cross the line behind, wins.

‘Pushing Back’ is a game that requires more strength. Did you get a partner who has the same height as you have? Did you experience any kind of difficulty while engaging in the activity? Note your response.

### *Assessment activities*

1. Write the full form of NADA and WADA. Explain their functions.
2. What are the side effects in the body when stimulants are used?
3. What is blood dopping? Explain.
4. What is Biological Passport? Explain.

### *Extended Activity*

1. Conduct an awareness camp with the help of ICT on the topic ‘Sports Free of Drugs’ including major sportpersons of your school.

# 4

## Down the corridors of Kerala Sports Culture



Did you notice the picture?

What did you understand from the picture?

This is the photograph of *Kalarippayattu* which is a martial art form that existed from the times of royal administration.

Martial art forms like *Kalarippayattu* and archery had existed from ancient times onwards. These martial art forms were practised in gurukulas which were a part of primary education. When India came under the reign of foreign rule, several occurred in the field of sports just like other areas. Along with the local games that are unique to Kerala, martial art forms like *Kalarippayattu* and archery were replaced by foreign games like Cricket, Hockey, Football, Volleyball etc.



Football



Hockey



Cricket



Colonel Godavarma Raja (properly known as) G V Raja was instrumental in popularising the new games among Keralites.

### Kerala Sports Day

October 13, the birthday of G V Raja is observed as Kerala Sports Day.

Lieutenant Colonel Godavarma Raja who is known as the father of sports in Kerala has played a decisive role in the growth of sports in Kerala. He inspired the youth to enter the field of sports. It was because of his efforts that the Kerala Sports Council came into existence in the year 1953.

Considering the contribution he has given to the field of sports, the Govt. of Kerala is honouring sportspersons with excellence with the **G V Raja Award**, which is the greatest award in Kerala in the field of sports.

Prepare a write up on the contributions made by G V Raja to the field of sports, with the help of your teacher.

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After the formation of the Kerala Sports Council several associations for various games came into existence, with a clear plan of action. Because of this, sport events like athletics, football, hockey, volleyball and cricket received more importance and popularity. Let us understand the ways in which these sport events gained popularity in our state.

### Football in Kerala

Football is the most popular game in the world. This game has more importance in Latin American countries and Europe. It has great influence in India, especially Kerala. Our state has contributed many players to the Indian team. Let's learn about some of the major football players from our state.





T M Varghese is the first football player from Kerala who participated in Olympics (1948 – London).



T Abdul Rahman was part of the Indian team that reached the semi-finals in Olympics (1956 – Melbourne).

### Identify the player

This player from Kerala is known as the ‘black pearl’ of the Indian football.

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He is the only Keralite footballer who was honoured with the Arjuna Award.

With the help of your teacher, list the names of football players from Kerala who have made significant contributions to Indian football.



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### The development of hockey in Kerala

Hockey, which is the national game of India is gaining popularity in Kerala now. Manual Frederick from Kerala was part of the Indian team which won the bronze medal in Munich Olympics. He is the only Keralite to win an Olympic medal in Hockey.



Manual Frederick



The photograph of another hockey player who participated in Olympics is given here. Write the name of this player who was the captain of the Indian team.

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### Cricket that reached through Wellesley

It is believed that Lord Arthur Wellesley popularised cricket in Kerala in eighteenth century. The Kerala Cricket Association was formed in 1950 under the leadership of Colonel Godavarma Raja. Tinu Yohannan, S Sreesanth, Sanju V Samson and Aby Kuruvila are cricketers from Kerala who have played for the Indian team.

Write the name of the cricketer from Kerala who has played for India in One Day International (ODI) as well as 20-20.

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### Track and Field - Showcasing Power and Speed

Sanu approached his father with the newspaper.



“Dad, did you see this? It is written that Hima Das is the first Indian star to win a gold medal in 400m race in the World Youth Athletic Meet. Has anyone from Kerala participated in such events?”

Yes. Several stars from Kerala have participated in Olympics and World Athletic Meets. Long Jump star Anju Bobby George has won bronze medal in the World Athletic Meet in 2003.

Kerala has given birth to a number of sport stars who have raised our platform to world standards. Majority of them created wonders

in their field irrespective of the limited opportunities available to them. Let's get introduced to a few important sport stars.



**CK Lakshmanan**

He is the first Keralite who participated in the 110m hurdles in the 1924 Paris Olympics representing British India.



**PT Usha**

Participated in four Olympic events from 1980 to 1996. She is the first Indian female athlete who reached Olympic finals. In the 1984 Los Angeles Olympics she missed the bronze medal by fraction of a second. She is popularly known as 'Payyoli Express'.



**Shiny Wilson**

Participated in four Olympic events from 1984 to 1996. She is the first Indian female athlete to enter the Olympic semi-finals.



**Do you know them?**

Given below are the photographs of sportspersons from Kerala. Write their names and their events.



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There are several sports stars from our state who have participated in various items in Olympics, Asian Games and other international competitions just like the stars about whom you learnt. The role played by Kerala in strengthening the field of sports in India is not minimal.

You have familiarised with the great stars who have gone international. It is essential for a sports star to have excellent physical training, modern facilities and experience in competitions to achieve great heights. In Kerala, children who can participate in different items in sports are identified and are given scientific training. Let's know more about weightlifting and powerlifting which are popular in Kerala.

### Weightlifting

Weightlifting contests are conducted in two stages – ‘Clean and Jerk’ and ‘Snatch’. First the bar should be lifted up to the shoulder. This is called ‘Clean’. Then it is lifted above the head and stands straight. This is called ‘Jerk’. Contestants participate in this event according to their body weight. A contestant can participate in his or her own weight category over his body weight. But the contestant cannot participate in a weight category that is below his or her own weight. If the participant fails in lifting a particular weight, he or she will not be allowed to lift a lesser weight. International



Weightlifting Federation (IWF) is the organisation that governs international competitions.

Karnam Malleswari won the bronze medal for weightlifting in the 2000 Sydney Olympics. She is the first woman to win a medal for India in Olympics.

### **Powerlifting**

Powerlifting which is another event that belongs to the strength sports category originated in the USA and the UK in the 1950s. There are separate events for men and women. Competitions are conducted in different categories based on weight. This includes Bench Press, Squat and Dead Lift. Three chances are given in each item. International Powerlifting Federation (IPF) governs powerlifting competition at the international level.



### ***Assessment activities***

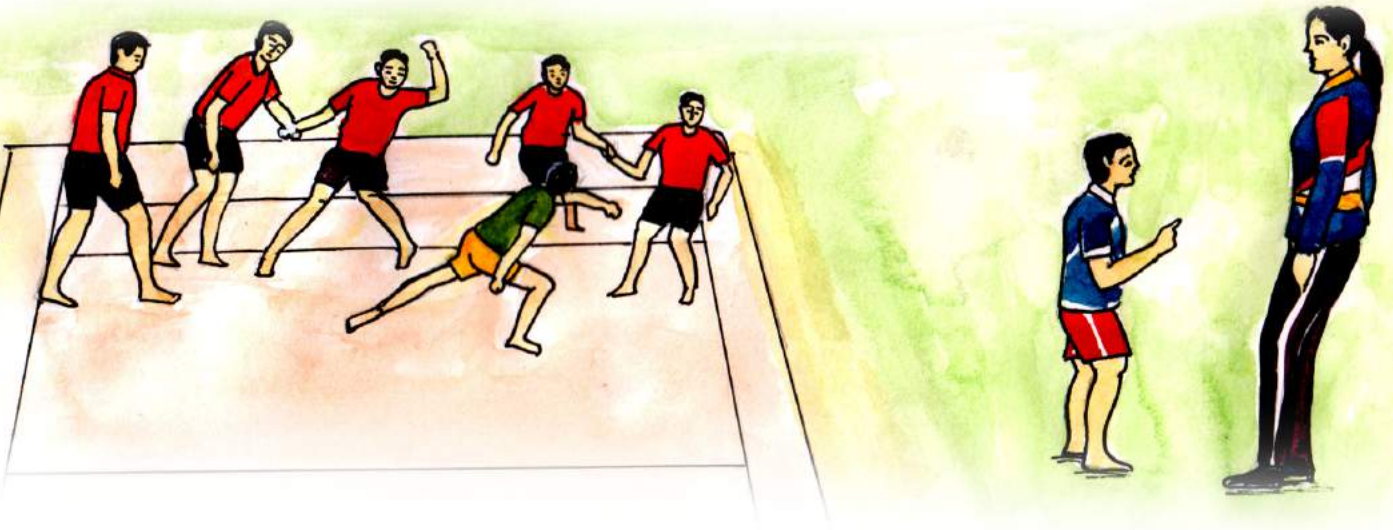
1. Explain in brief, the development of sports in Kerala.
2. Categorise weightlifting contests and list them.
3. Explain the major activities of Kerala State Sports Council.
4. Prepare a note on your favourite sports star.

### ***Extended Activity***

1. Prepare a chart with the photographs of sports stars from Kerala and mark their events.

# 5

## Exercise and control of Body weight



Rohit happened to see the notice which announced the selection of the school Kabaddi team. He went to the court where the selection process was going on. The teacher asked him to check his weight before joining the selection process. Rohit weighed 59 kilos. The teacher told him that he cannot participate in the selection process. He was not eligible because only those who weigh below 54 kilos are allowed to contest in the age group below 17. The teacher consoled Rohit saying that he could participate in the next year if he reduced his bodyweight. Rohit asked the teacher as to how he can reduce his bodyweight. She told that she will explain the methods to reduce bodyweight.

### Various methods to control bodyweight

1. Exercise
2. Diet

## 1. Exercise

This is a method by which one reduces bodyweight by engaging in physical activities. The body needs proper metabolic activity, oxygen distribution, strong muscles, joints and ligaments for the efficient functioning of all the organs.



### How does exercise control bodyweight?

- reduces fat content
- strengthens muscles
- improves metabolism of the body
- increases the distribution of nutrients in the body
- increases physical efficiency

### Do you get proper exercise?

Answer the following questionnaire which was prepared according to the guidelines prescribed by the World Health Organisation. Put a tick (✓) mark against your response.

<i>Do you engage in any activity that accelerates breathing at least for 15 minutes daily? ( e.g. race, cycling, swimming etc)</i>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<i>Do you engage in activities that use the important muscles (muscles of the limbs, back, tummy and chest) well?</i>	Yes <input type="checkbox"/> No <input type="checkbox"/>
<i>Do you lift objects that weigh one-third of your bodyweight?</i>	Yes <input type="checkbox"/> No <input type="checkbox"/>

If you have marked 'Yes' to all the questions above, it means that you are doing minimal amount of exercise.

## 2. Diet

Scientific studies have proven that a proper diet can reduce bodyweight. Diet must be planned in such a way that the body gets carbohydrates, proteins, fat, vitamins and minerals in the required proportions.

As the body needs energy to engage in physical activities, glycogen that are stored are used up for producing energy. When one engages in physical activities for a long time the fat that is stored is used up for producing energy. Through this, excess fat is reduced and bodyweight gets controlled.



The amount of calorie that reaches the body gets reduced when daily food intake is controlled. Here, energy required by the body for day to day activities is produced from glycogen and fat that are stored in the body. Through this, fat content gets reduced and bodyweight gets controlled.

In the modern age, medicines and surgery are used as treatment for controlling bodyweight. But there can be many side effects to this. ***"The body weight can be controlled to a certain extent if diet control and exercise are possible effectively". This is the most desirable way.***

Haven't you understood various methods to control bodyweight? Discuss in groups and write down the different types of physical activities that one should engage in and the things that one should keep in mind while controlling the diet, to reduce obesity.

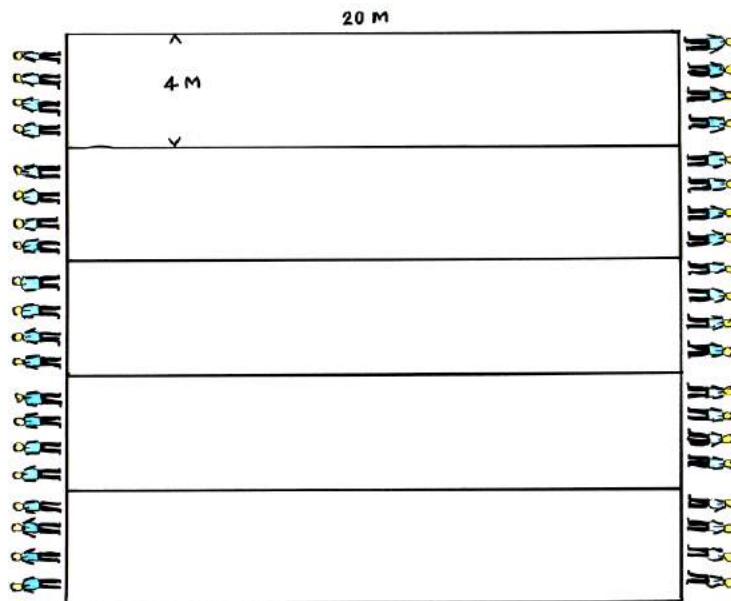
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*As per the National Family Health Survey 19.7% men in cities and 10.6% men in rural areas are obese. Likewise, 23.7% women in cities and 10.7% women in rural areas are obese.*

We have familiarised the different methods to maintain the proportion of the body and regulate body weight. Exercise is one of the methods. We are exercising while playing games. Let's learn an interesting game.

### Modified Yo-Yo Games

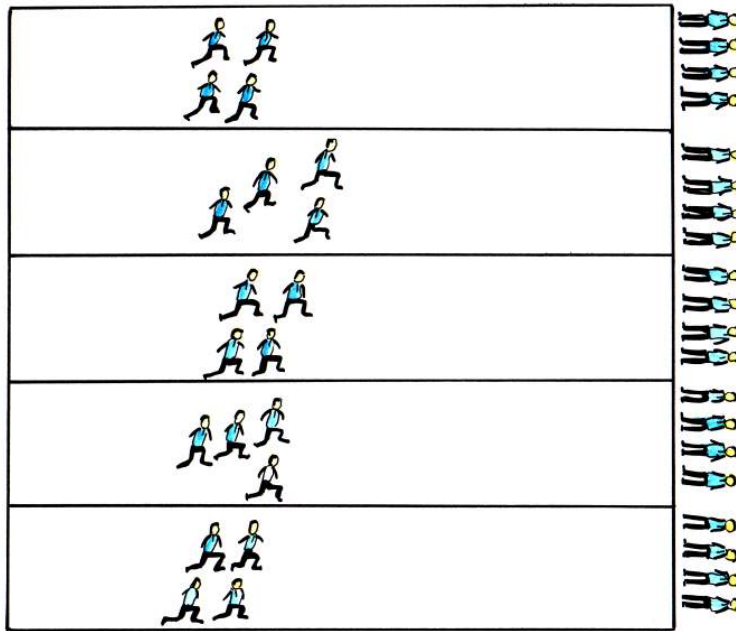


Form 5 teams containing 8 members (the teacher decides the number of team members and the number of teams according to the number of children). Five tracks which are 4m wide are drawn inside two parallel line that are 20m apart. Divide the team members of each team as shown in the picture and make them stand face to face on the tracks allotted to them. When the teacher blows the whistle, all the members of the five teams who stand on one side either walk or run towards the opposite line which is 20m away. 20 seconds is allotted for this. When the teacher blows the next whistle after 20

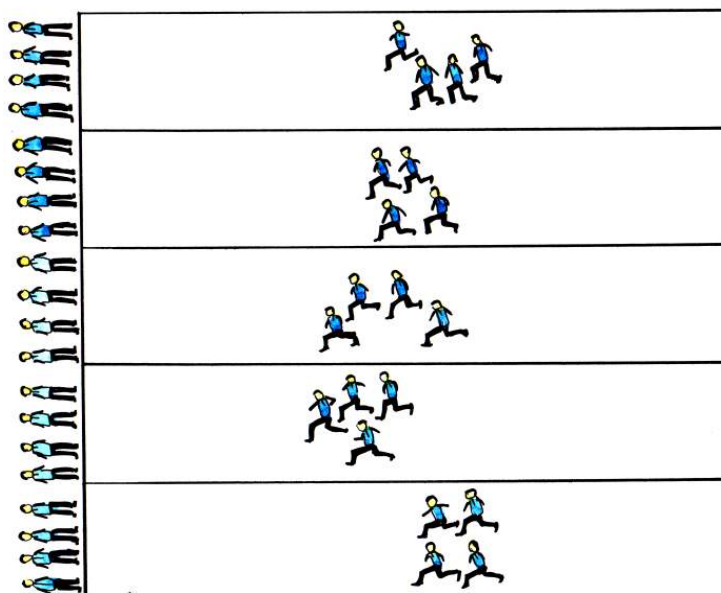
seconds, the players who haven't crossed the opposite line will be declared out. Then the team members on the other side do the same activity. After that, the duration is reduced to 15, 12 and 10 seconds. After a stipulated time, the team which has maximum players remaining will be declared the winners.

**Various stages**

Step 2



Step 3



### Instructions

- Those who shift track will be declared out.
- Those who are 'Out' should assist the teacher.
- The teacher can change the area of the playground according to the availability of the playground.

Write your experience after participating in the game.

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When you participated in this game each one must have had different experiences. Likewise, we have engaged in this activity with added speed and a reduced pace. In each stage our body has had different experiences. We can categorise physical activities according to the method of execution. Let's familiarise them.

### AEROBIC-ANAEROBIC ACTIVITIES

The activities that help in regulating bodyweight can be categorised as aerobic and anaerobic. Aerobic activities demand more oxygen. These activities increase the strength of the heart and lungs.

Anaerobic means 'that which does not require oxygen'. When you engage in physical activities that are more intense in a short duration, energy that is stored in the body is used.

#### 1. Aerobic activities

This is a process by which energy required for physical activities is created in the presence of oxygen. It is from carbohydrate, protein and fat contained in our food that the energy needed for aerobic activities are formed. At the first stage of aerobic activities, carbohydrate is used. As the duration of activity increases fat is used for producing energy. Usually, activities that prolong over two minutes are aerobic activities. Swimming, cycling, slow-continuous running and long distance running are aerobic activities.

## 2. Anaerobic activities

This is a process in which energy required for physical activities is generated in the absence of oxygen. Energy needed for anaerobic activities is generated from glycogen that is stored. Activities which take only less than two minutes come under this category. 100m race, 200m race, weightlifting etc are examples.

Explain how aerobic activities regulate obesity.

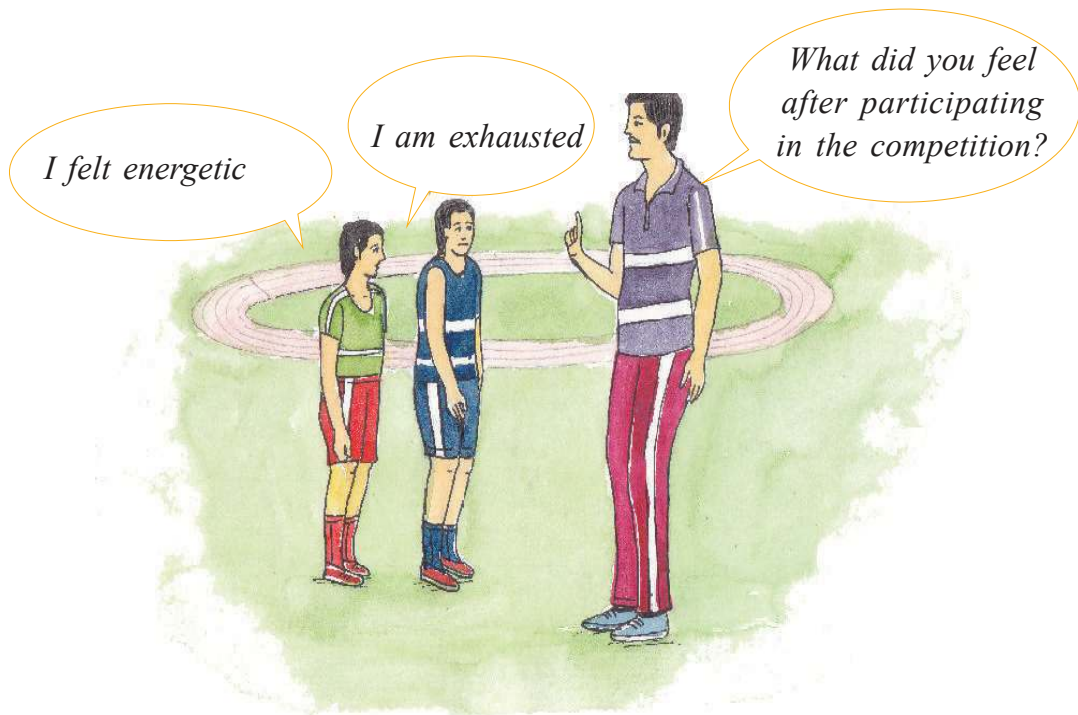


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### During the school level sports meet...



Raghav and James are runners in the school athletic team. Both have similar physique. It was Raghav who won the first prize in middle distance race in the school athletic meet last year. This year both of them underwent training. During training, it was Raghav who always remained the winner. But surprising everyone in the Annual athletic meet, it was James who got the first. Raghav was thoroughly exhausted before the competition. The teacher asked Raghav why he looked worried. It was then that the teacher came to know that Raghav had not eaten anything. James had taken food that contained carbohydrate three hours before the contest. Let's learn more about the dietary habits of sportpersons.

### **Dietary habits to be followed by sportpersons**

Sportpersons who participate in contests should follow a fixed dietary plan. The diet should be prepared in such a way that the person gets enough energy. There can be variations in the diet depending on the event and the duration of the event. We can fix the diet in three ways.

- a. Before the competition
- b. During the competition
- c. After the competition

#### **a. Before the competition**

Before competitions a sportsperson should take food that is rich in carbohydrates. Food that contains fat takes more time to digest. So, such food items should be avoided. Digestion will take place only if food that contains carbohydrates is taken three hours before the competition. If the food is not digested it will affect the performance. Liquid foods help in making digestion easier.

#### **b. During the competition**

Taking liquids that contain carbohydrates during the competition will help in retaining the glycogen stored in the body. The body absorbs around 800ml of water in an hour. Though we lose a lot of water content in the form of sweat while performing physical

activities, drinking water during the activity is not good. Water that fills the stomach may affect the performance. Taking a limited quantity of tender coconut water and liquids that contain electrolytes is advisable.

### c. After the competition

After the competition food that contains all the nutrients should be taken. It is desirable to take food after one hour of the activity. The contestant should take nutrient-rich food after the competition, to restore the level of glucose in the body. If the contestant has to participate in competitions in the following days, he or she should take food that is easily digestible which will help to store glycogen in the muscles and liver. To restore the water level in the body, he should drink water.

Complete the table including locally available food items that should be taken before competitions

<i>To be taken before the competition</i>	<i>To be taken during intervals in the competition</i>	<i>To be taken after the competition</i>



### Rifle Shooting

Look at the picture. The event named Rifle Shooting is seen in the picture. Usually competitions are held in rifle, pistol and shotgun categories. Among these rifle and pistol competitions are held in shooting ranges.

### Rifleshooting event in India

National Rifle Association of India that came into existence in 1951 is organising shooting competitions at the national level. Indian shooter have established their supremacy in Olympics, Commonwealth Games and Asian Games. India started focusing on shooting events after Major Rajyavardhan Singh Rathore won the silver medal for shooting in the 2004 Athens Olympics. Abhinav Bindra created another milestone by winning the first individual gold medal in the 2008 Beijing Olympics. Gagan Narang, Anjali Bhagavath, Dr Karni Singh, Randheer Singh, Samaresh Jung and Jaspal Rana are Indian shooters who have proven their excellence at the international level.



Rajyavardhan Singh Rathore



Abhinav Bindra

While practising shooting accuracy and precision have great importance. It is only those who have concentration and proper attention can achieve great heights in this field. This event is included in the Kerala State School Meet.

### Overcome Natural Disasters - Play Safe

*Play areas that are safe always help to reduce accidents. Play should be avoided in the play ground when there is heavy rain and extreme heat. Likewise avoid playing in open grounds when there is lightning. The following safety measures will help to reduce accidents due to lightning.*

### Safety measures when there is lightning

Lightning that follows unexpected rain is always dangerous. Accidents that occur from these can be avoided by taking certain precautions.

- Avoid contact with metallic objects.
- Either sit or lie on the ground, if on a playground.
- Stay away from tall trees and mobile towers.
- Detach electric connection of electrical instruments and stay away.
- Enter safe shelters as soon as possible.
- Avoid contact with water.
- Avoid direct contact with the ground.
- Take note of weather forecast and follow the instructions
- Do not gather anywhere and stay away from doors and windows.

### Assessment activities

1. Explain different methods to control bodyweight.
2. Citing examples, explain what aerobic and anaerobic activities are?
3. Explain the dietary plan of a sportspersons who participate in competitions.

### Follow up activities

1. Prepare a chart on the dietary plan to be followed by sportspersons who participate in competitions by fixing it in three ways shown below.
  1. Before the competition
  2. During the competition
  3. After the competition
2. Categorise and list the aerobic and anaerobic athletic events.