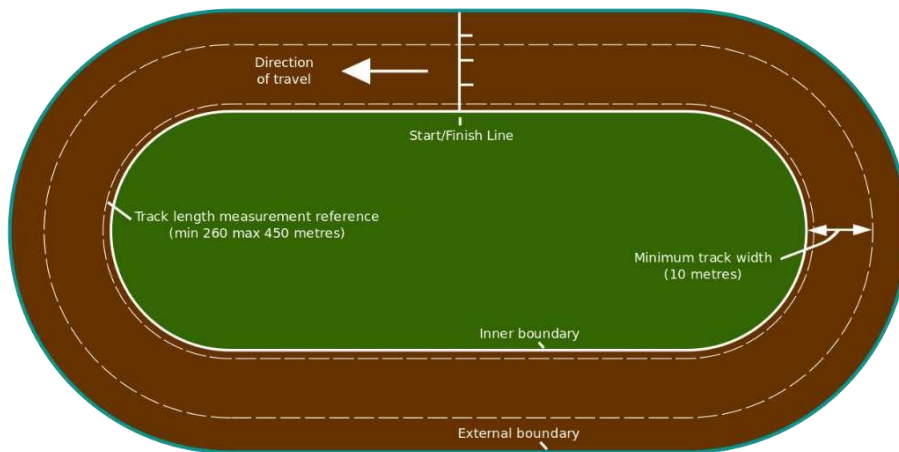


# PHYSICAL HEALTH EDUCATION

## GRADE 4

### ATHLETICS TRACK



- It is a ground or surface that is oval in shape.
- It comprises of two parallel sides joined together by two semi-circular bends.
- An athletics track has a starting and finishing pot for different races .

### Safety tips while using the athletic track

As you participate in running 100m and 200m, you need to observe the following safety measures:

1. Perform warm up activities before running
2. Do not cross in front of each other while running
3. Look out for objects like stones and remove them from the track.
  - The safety precautions assist to avoid injury of self and others while using the athletic track. You are therefore required to observe these rules for your own safety.

# GRADE 4

## STANDING START

*How to Perform a Good Standing Start*



### *"On Your Marks"*

1. Place one foot forward pointing directly ahead
2. Place your other foot back pointing directly ahead
3. Your feet should be about shoulder-width apart
4. Look at the ground ahead
5. Look at the ground in front of your feet

### *"Go"*

1. Drive your arms and legs forward
2. Step through with the back foot first
  - In every game it is good to practice **fair play**: this means fair competition, equality and respect for rules and players.

## STANDING LONG JUMP

*How to perform the standing long jump*

1. You should place Both feet are at a shoulder-width

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2. Then Stand up with the arms and rise up onto the **balls of the feet** with hips extended .

**Ball of the feet**: portion of the sole between the toes and the arch.

3. Then Bring the arms back behind you and bend the knee and hips
4. Drive as powerfully as possible off the ground while throwing the arms forward as forcefully as possible.
5. Once you are airborne, extend the hips up and out and throw the feet forward.
6. Land flat footed slightly forward.
7. Avoid falling backward or forward.

### **Safety tips**

1. Before you jump, ensure you have done warm up activities
2. Make sure the landing area is level, there are no stones, holes and it is not slippery
3. Use the correct technique while doing the standing jump.
  - While undertaking the standing jump, **Team work** is most important for the success of the game it means working together to achieve set goals.

### **Improvising balls**

#### ***Materials needed***

- ✓ Waste polythene bags
- ✓ Waste papers

# PHYSICAL HEALTH EDUCATION

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- ✓ Old mattresses
- ✓ Sisal rope
- ✓ String
- ✓ Scissors

### Procedure for improvising balls

- a. Bring together all the above stated materials ready for improvising.
- b. Fold the old papers into the shape of a ball.
- c. Put the folded papers into a non-woven bag (uhuru bag) then grip and twist to make a round shape.
- d. Continue to wrap it and making as much round as possible, then tie the bag tightly.
- e. Begin to tie it with a string after making a knot, then create lines parallel to each other and close while going to the bottom.
- f. Repeat the process now sides and compact the lines until it is finished.
- g. The ball is ready to play.

### Safety tips

1. Work from a clean space
2. Store all sharp items in a container when not in use.
3. Follow your teacher's instructions carefully and work in turns
4. Should an injury occur, report immediately to the teacher
5. Use sharp items carefully

# PHYSICAL HEALTH EDUCATION

## GRADE 4

- To improvise is to make from what is available in the local environment or immediate surrounding.

### TWO HANDED CATCHING



- This is a technique that involves use of two hands to receive a ball.

#### **How two perform two handed catching**

1. Keep the Eyes on the ball
2. Then Move towards the ball
3. Stretch the arms with fingers spread to meet and snatch the ball towards the body.
4. Lastly Control the ball with fingers and the thumb

#### **Safety tips**

1. Make sure there is enough space between you and other playmates when throwing and catching the ball.
2. Catch the ball with fingers spread out, not closed to avoid injuries.

# PHYSICAL HEALTH EDUCATION

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**Catching:** is the act of grasping or seizing a ball.

- Catching a ball can be done while following different pathways:  
It can be in a line  
In a circle  
Zigzag manner
- It can also be done at different levels: **low, medium and high levels**
- The degree of force used in catching the ball e.g., **soft and hard.**

### **KNEELING OVERHEAD THROW.**

- Kneeling overhead throw is a type of a pass that you perform from a kneeling position.

#### ***How to perform kneeling overhead throw***

1. Begin to Assume a full kneeling position
2. Hold the ball above your head with both hands, fingers well spread behind the ball.
3. Pass the ball above your head accurately to your partner.

#### **Safety tips**

1. Ensure the ground is safe for kneeling.
2. Use the correct techniques for passing using overhead throw.

### **OVERARM PASS**

The overarm pass is a type of pass used to throw the ball to a partner.

#### ***How to perform the overarm pass***

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1. Keep the Eyes focused on the target
2. Stand sideways to the target of the throw
3. The throwing arm moves downwards and upwards
4. Step towards the target as hip and shoulders rotate and release the ball. The force you release it with makes the ball to travel further.

### OVERHEAD PASS

The overhead pass is a type used for making a long pass.

*How to perform overhead pass.*

1. Begin to Assume a **staggered stance** - *it's a standing position in sport in which the feet are spread to the width of the hips and the toe of one foot is on a line behind the heel of the other foot*
2. Hold ball above your head with two hands
3. Spread your fingers well behind the ball
4. Pass the ball over your head with a follow through

### **Safety tips**

- ✓ Make sure you observe the rules when passing the ball for your own and others safety
- ✓ Use the correct technique to pass the ball.

### Underarm pass

- ✓ Underarm pass is one handed pass that is taken from below the waist area. It is used to pass a ball to a team member who is close.

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### *How to perform the underarm pass*

1. With your feet staggered hold the ball with both hands
  2. Withdraw the ball backwards and transfer your weight to the back foot
  3. Give the ball a forward thrust
  4. Transfer weight to the front leg simultaneously
  5. Release the ball in the desired direction with one hand.
- **underarm pass**: is used to pass the ball to a partner over a short distance.

### **CHEST PASS**

- Chest pass is the common pass used in ball games. It is one of the easiest passes to perform.

### *How to perform the chest pass.*

1. Hold the ball to the chest
2. Spread your fingers over the ball
3. Pass the ball at chest level with a follow through

**In all games there is need for Commitment**: this is willingness to give your time and energy to a job, activity or something that you believe in.

### **BOUNCE PASS**

Bounce pass is done by holding the ball close to the chest and passing it to the playmate.



# PHYSICAL HEALTH EDUCATION

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To bounce: means to cause to rebound or be deflected.

### *How to perform the bounce pass*

1. Begin to Assume the staggered stance
2. Hold the ball firmly close to the chest
3. Bounce the ball close to your partner.

### IMPROVING SOCCER BALLS

#### *How to improve soccer balls*

A soccer can be made from locally available materials

Materials for improvising soccer balls includes old socks, rubber bands, used carrier bags, cello tapes strips of old cloth an strings

- a. Bring together all the above stated materials ready for improvising.
- b. Fold the old papers into the shape of a ball.
- c. Put the folded papers into a non-woven bag (uhuru bag) then grip and twist to make a round shape.
- d. Continue to wrap it and making as much round as possible, then tie the bag tightly.
- e. Begin to tie it with a string after making a knot, then create lines parallel to each other and close while going to the bottom.
- f. Repeat the process now sides and compact the lines until it is finished.
- g. The ball is ready to play

# PHYSICAL HEALTH EDUCATION

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### PASSING IN SOCCER

**Instep pass:** the instep kick or pass uses the upper surface of the foot, also called the laces.

Passing is moving the ball among team mates in order to keep it away from opponents and put the ball into a position for a shot on the goal.

*How to make an instep pass.*

1. Place the left foot level with the ball
2. Bend hip and turn kicking foot open
3. Kick the ball with the instep of the foot.

**instep:** the arched middle portion of the human foot in front of the ankle joint especially its upper surface.

**Opponent** a person who is against another person for example in a game

**Surrender:** to give up something to an opponent for example a ball during a match

### HAND JUGGLING

*How to perform hand juggling*

- Juggling is a skill which involves handling or manipulation of objects in an artful way
- It involves tossing objects into the air with one hand and catching them at the same time using the other hand. It is also possible to juggle with the feet.

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## GRADE 4

### Safety tips

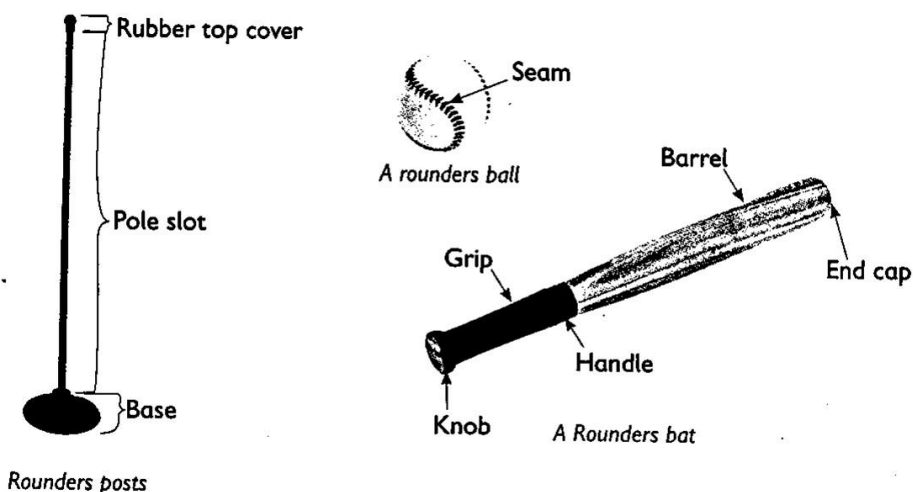
1. Use safe and comfortable objects
2. Play in a safe environment
3. Keep distance when hand juggling in groups

### JUGGLING SCARVES

#### *How to perform scarf juggling*

1. Toss one scarf up with the right hand and catch it with the same hand.
2. Toss with the left hand and catch with the left
3. Toss with the right and catch with the right
4. Toss with the right and catch with the left
5. Toss and catch the toss before catching it
6. Toss the scarf into the air and try to clap your hands

### ROUNDERS EQUIPMENT



# PHYSICAL HEALTH EDUCATION

## GRADE 4

- The rounders game is played by two of nine players by hitting the ball thrown to them and running around four posts.

The equipment used for playing the rounders game is:

- a) Rounders ball
- b) Rounders bat
- c) Rounders posts

### *Making rounders equipment*

Equipment for rounders can also be improvised using the following materials.

**Bat:** can be made from old pieces of cloth (socks), scrapper, clothing material, leather, bamboo sticks.

**Ball:** can be made from non-woven bags, wooden materials or leather

**Posts:** can be made using plastic cones, tins, buckets, wooden stumps, rubber mats, broom, handle, sand.

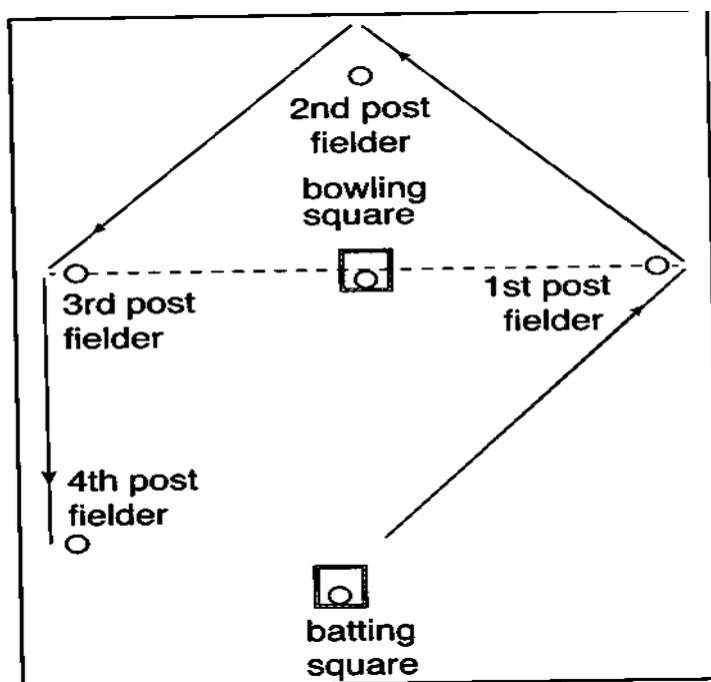
### **Safety tips**

1. Store all sharp equipment in a safe place
2. Use the sharp objects carefully
3. Do not crowd together
4. Report any injury to the teacher

# PHYSICAL HEALTH EDUCATION

## GRADE 4

### PITCH ORIENTATION



- **Batting** is when the batsman or woman strikes the ball with the bat and hits the ball forward into play.
- **Fielding** is catching or picking up the ball after it has been hit
- The **batting team** is the team that tries to catch or intercept the ball in order to stop the batting team from scoring

### Safety tips

# **PHYSICAL HEALTH EDUCATION**

## **GRADE 4**

1. All batsmen should wait for their turn in the backward area 10m behind the 4<sup>th</sup> posts and 15 m away from the batting square
2. Make sure there are no stones or holes in the field of play.
3. When you are playing the game, the equipment should be used under the direct supervision of the teacher.

### **BOWLING IN ROUNDERS**

#### ***Bowling***

- Bowling is the act of sending the ball to the batsman using a continuous smooth under arm action
- For a successful and correct bowling, the bowler must bowl a ball towards the batsman.

#### **The bowling action**

1. The ball is thrown with a smooth underarm action
2. The ball arrives without bouncing within the bats man square
3. The ball is above the batsman knee
4. The bowlers fee should be inside the bowler's square

#### **Things to remember**

- Grip the ball and visualize the rectangular space into which your ball must go
- Bring in the foot work by stepping forward as you bowl.

# PHYSICAL HEALTH EDUCATION

## GRADE 4

- Stand at the back of the bowling square left side towards the batsman while holding the ball in the right hand.
- Point the left hand in the direction in which you are bowling
- Step sideways with the left foot, bend the knees, turn the shoulders and bowl
- Release the ball with a flick of the wrist
- The ball is rolled off the fingers, not the palm
- Get your balance by swinging the left arm backwards as you swing the right arm forward.
- Make the action smooth and rhythmical

### How to grip the ball

First and second fingers are placed over seams of the ball where they come together with the thumb over the seam as shown in the picture below.

### BATTING IN ROUNDERS

- Batting is hitting the ball from front line of the batting square by the player, to the direction he or she chooses.
- It is the main attacking move to give the team a rounder.
- Batting is an attacking technique in rounders. The ball is hit by the batsman towards any direction.
- The fielders go for the ball and return it while attempting to touch the post the batsman is heading for.
- It is important for the batsman to observe the rules otherwise one will be declared a "batsman out" or a "no ball"

# PHYSICAL HEALTH EDUCATION

## GRADE 4

*The bats man is out when:*

- The ball is caught when the bats man hit it
- Their foot is over the front or backline of the batting square before hitting or missing the ball.
- They run inside a post
- The post they are running to is stumped ( a fielder touches it with the ball)
- They lose contact with the post when the bowler has the ball in the bowlers' square
- They overtake another batsman
- They abstract the fielder

**GRIP:** to seize or hold an object firmly

*Rules when playing rounders*

- Run to the outside of the posts
- If you stop at a post, you must keep contact with the posts, with hand on bat
- You can run on to a post even if even if it has been previously stumped (you don't score if the post immediately ahead has been stumped)
- When the bowler has the ball in bowing square you cannot move on, but if you are between posts you can carry on to the next posts.
- You cannot have tow batsman at a post
- At a post you do not have to move on for every ball bowled



# PHYSICAL HEALTH EDUCATION

## GRADE 4

- You can move on as soon as the ball leaves the bowlers hand. You must touch 4<sup>th</sup> post on getting home/completion.

**Fielding:** attempting to catch or stop the ball and return it after it has been hit the batsman, thereby preventing runs being scored or base runner advancing

### IMPROVISING THE SKIPPING ROPE

- A skipping rope is a tool used in the sport of skipping
- improvising: is making something from materials available in the environment.

#### *Safety tips*

1. Use a pair of scissors or knife with the help of a teacher, parent or guardian.
2. Use safe materials that are not rough but friendly to the skin
3. Take turns when using materials as a group
4. Don't litter the floor with materials
5. In case of cuts and blisters alert your teacher, parent or guardian.

### SKIPPING TECHNIQUES

*How to choose the correct rope size or length*

# PHYSICAL HEALTH EDUCATION

## GRADE 4

- Hold the handles of the rope in both hands
- Place both feet on the center of the rope, as you continue to hold the handles with each hand.
- With both feet on the ground, hold the handles up to the sides of the body towards your shoulder.
- The handles should sit just below your shoulders or reach the armpits
- The improvised ropes can be used to play the following games:
  - ✓ **Donut skips** - its about using rope and making circles on the ground, then skipping in and out of the circle.
  - ✓ **Flat rope skipping** - in this skipping two friends hold the rope on the ground, one at each end. Those skipping, skip over the stationary rope.

### Using the correct techniques

1. Minimize the space created between you and the ground.
2. Minimizes the injuries
3. It keeps the toes pointed down instead of pulling the feet backwards
4. It helps you land softly on the balls of your feet at every bounce.
5. It helps to distribute the pressure of jumping throughout the body.

### **Grip**

# **PHYSICAL HEALTH EDUCATION**

## **GRADE 4**

- Grip the handles loosely with the fingers, not the palm which thumbs on top of the rope
- When turning the rope, make small circle with the wrists
- The grip should be comfortable and firm

### ***Body posture, arm and wrists position***

- a) Hold head straight. Look ahead to maintain balance
- b) Shoulders should be level and straight not hunched, weight should be on the balls of the feet
- c) Arms should be held at about 90° angle, held slightly forward and extended sideways
- d) Elbows should be held close to the body
- e) Knees should be close together with slight bend

### ***How to skip a rope***

- Hold head straight
- Look ahead to maintain balance
- Shoulders should be level straight
- Weight should be on the balls of the feet
- Arms should be held at about 90° angle, held slightly forward and extended sideways
- Elbows should be held close to the body
- Knees should be close together with slight bend

### ***Safety tips***

- a) Ensure you are wearing suitable sports shoes

# **PHYSICAL HEALTH EDUCATION**

## **GRADE 4**

- b) Skip the rope on a flat and smooth surface
- c) Keep a safe distance from each other
- d) Warm up and cool down before and after skipping
- e) Skip while maintaining the correct posture

### **SINGLE BOUNCE**

#### ***How to skip the rope using single bounce skill***

- Skip on both feet
- Skip once for each turn of the rope
- Keep feet, ankle and knees together
- Land on the balls of the feet
- Maintain a steady rhythm
- Maintain upright body posture with knees bent slightly

#### **Importance of skipping rope in everyday life**

1. Improves the heart rate
2. Helps in weight loss
3. Improve blood circulation

### **DOUBLE BOUNCING**

Involves jumping twice for each turn of the rope

#### ***How to perform the double bounce skill***

- Jump on both sides
- Jump twice for each turn of the rope

# PHYSICAL HEALTH EDUCATION

## GRADE 4

- Keep feet, ankles and knees together
- Land on the balls of the feet
- Keep knees slightly bent

### *Safety tips*

- Make sure you have the correct rope
- Make sure you skipping in an open, flat and safe space
- Avoid overcrowding
- ✚ Skipping helps us to avoid **lifestyle diseases**- which is a medical condition or disorder viewed as being associated with inactivity especially in physical activities

## ONE FOOT BOUNCE

The one-foot bounce involves jumping on one foot over a turning rope

### *How to perform the one-foot bounce*

- Grip the rope comfortably in the hands
- Hold the rope in front with the hands together and elbows close to the body.
- Place the rope behind the body and turn the jump rope over the head.
- Jump with only one foot, left or right

### *Safety tips*

1. Choose a suitable rope

# PHYSICAL HEALTH EDUCATION

## GRADE 4

2. Do warm exercise before starting to skip and cool down exercise after skipping
3. Maintain proper posture while skipping.

### FORWARD ROLL

- ✚ Is performed by moving from standing position to a crouch with the chin tucked in.
- ✚ this starting position transforms into a roll and back to the feet in one motion without the support of the hands while standing.

#### *How to perform the forward roll*

- Squat (*to position yourself closer to the ground balancing on the front part of your feet with your legs bent under your body. )* down and place the hands shoulder-width apart
- Tuck the chin and head towards the chest
- Roll forward, push over onto the upper back so that the body rolls forward and the hips are pushed over the head.
- Straighten the legs and point the toes throughout the roll
- Stand without using your hands for support

#### *Safety tips*

- a) Warm up before performing the forward roll
- b) Perform the activity in an open flat and safe place
- c) Have proper attire, loose fitting and comfortable clothing
- d) Make contact with the floor using back of the head and shoulders and never the top of the head.

# PHYSICAL HEALTH EDUCATION

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### BACKWARD ROLL

- ✚ Is similar to the forward roll but is performed in reverse, going backwards

#### *How to perform the backward roll*

- Squat into a tuck position (*a body position where the knees and hips are bent and drawn into the chest*)
- Place hands on your ears with open palms, facing upwards
- Bring the chin to the chest
- Sit while still tucked and push backwards to begin the roll
- Extend the arms and push with the arms to complete the roll
- Land on your feet and extend the legs to stand

### Headstand balance

Is an inverted balance. The performer balances his or her body with the forehead.

#### *How to perform*

- Kneel or squat on the mat or grass
- Place hands about shoulder width or slightly wider with fingers pointing forward.
- Hands and the top of the head should form a triangle shape
- Tuck the chin downward and bring forehead down to the mat
- Lift up the knees to straighten out the legs

# PHYSICAL HEALTH EDUCATION

## GRADE 4

- Bring the knees close to arm pits and the into the chest
- Raise the knees and extend the legs straight up out f the tuck
- Hold the headstand for a few minutes
- To release the headstand, bend at the knees and bring both legs down back to Tucked position in front of the chest.

### HANDSTAND BALANCE

Is the act of supporting the body in a stable, inverted position by balancing on the hands.

#### *How to perform the headstand balance*

- Start in an upright standing position. Hands stretched straight over the head.
- Place one foot in front on the ground or mat. Place both hands in front on the ground or mat, shoulder width apart, with fingers spread out slightly and facing forward.
- Using the momentum (***force that keeps the body moving.*** ) from placing one foot in front of the other, kick one lag up the follow with the other leg.
- Keep the rms straight and hold the balance.
- To release the handstand, bring legs down one after the other, finish in a lunge upright position

### TWO ACTION SEQUENCE

- ✚ A sequence is a gymnastic activity where two or more skills are performed together creating a different combination skill.



# PHYSICAL HEALTH EDUCATION

## GRADE 4

- ✚ A two action sequence involves the performance of two action gymnastic skills which may involve travelling, jumping, rolling and balance.
- ✚ This is similar to playing ball games where different skills such as passing, catching, running and jumping are put together.
- ✚ The purpose of a sequence is to connect movements into smooth and flowing sequence without hesitations or stops.

### THREE ACTION SEQUENCE

Involves the performance of three action gymnastic skills which may involve travelling, jumping, rolling and balance

**squat:** to crouch or sit with one's knee bent and one's heels close to or touching one's behind.

### FOUR ACTION SEQUENCE

#### *How to perform the four-action sequence*

- ✚ A four-action sequence involves four gymnastic skills
- ✚ The sequence has four skills such as handstand. T-balance a handstand into T-balance or single leg balance forward roll. T-balance backward roll.

### FLOATING DEVICES

# PHYSICAL HEALTH EDUCATION

## GRADE 4

**Front crawl**: the front crawl is stroke where the arms are moved alternately overhead accompanied by a **flutter kick** to propel a swimmer forward.

### ***Body position while swimming.***

- ✚ Keep your body flat, lie facing down in the water with your body kept in line with the water surface
- ✚ Keeping the body straight makes swimming easier.

### **Arm movement**

**Arm pull**: practice it with your palms facing down, pull in line with your body with a slightly bent elbow all the way to the side of your upper thigh.

**Arm recovery**: with your hand close to your upper thigh, lift the arm out of the water with bent elbow. Reach forward over the water with a bent elbow and enter the water with your fingertips.

### **Leg action.**

- Involves straightening the legs with pointed toes
- Ankles remain relaxed and flexible
- Kick the legs up and down in a continuous motion
- Do not bend the legs

### **Safety tips**

1. Swimming in proper costume

# PHYSICAL HEALTH EDUCATION

## GRADE 4

2. Leave your shoes in the changing room
3. Take a shower before entering the pool
4. Tuck long hair or hold it tightly
5. Visit the toilet before getting into the pool
6. No pushing each other into the water or play around the pool.
7. Do not dive in the shallow end of the pool.
8. Have an adult who knows how to swim with you when around the pool and during the swimming
9. No eating or chewing gum during the swimming lessons
10. If you have an open wound or bruises, do not get in the pool
11. Do not swim immediately after taking meals
12. Ensure there is a life saver on alert

**Futter kick:** a basic skill in swimming used to stabilize and propel your body forward in the water with your legs.

### **CROUCH SURFACE DIVE**

*How to perform the crouch surface dive*

- start from a crouch position
- Curl the toes of the front around the edge of the pool with the other foot slightly behind.
- The arms and hands are pointed at the entry point with the head tucked in

# PHYSICAL HEALTH EDUCATION

## GRADE 4

- Push off from the feet and straighten at the knees to dive.

### *Safety tips*

1. Do not dive when not accompanied by a swimming teachers or instructor
2. Diving should be performed in pools with adequate water
3. Do not dive when there are swimmers in the diving area
4. Always observe and safety rules when swimming.

**Deck: a raised flat surface**

### **STANDING SURFACE DIVE**

Standing surface dive is a shallow dive performed from a standing position.

### **Practicing standing surface dive**

1. Stand with the feet together, toes curled over the edge of the pool.
2. Place arms straight above the head touching the ears with the arms.
3. Bend the kneed slightly
4. Tuck chin, bend at the waist pointing fingers towards the water

# PHYSICAL HEALTH EDUCATION

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5. Tilt towards push off from the feet, through the hips and dive into the water fingers first.
6. As the leg follows, the upper body straightens and then out then out and the point toe out

### FRISBEE GAME

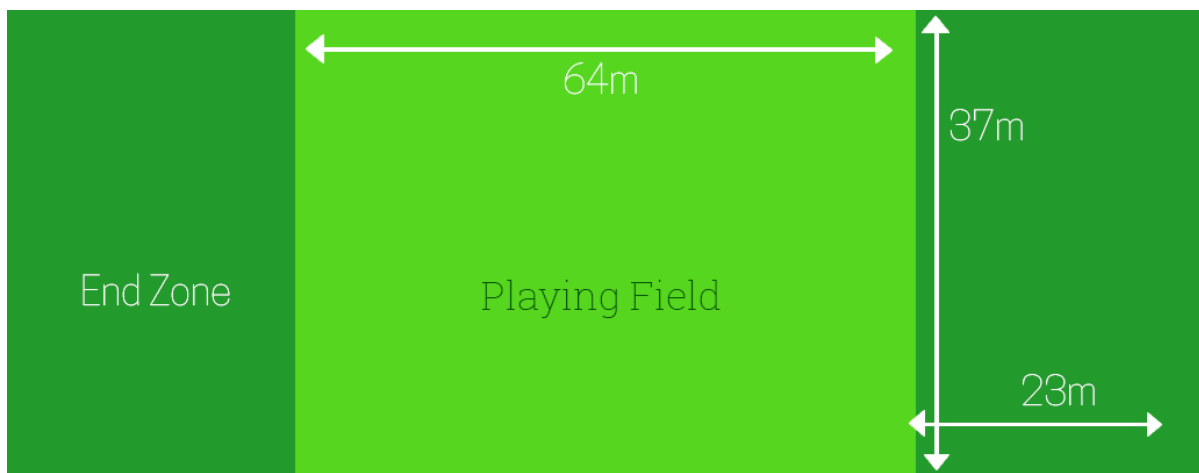
✚ Frisbee game is played by throwing a disc.



*Frisbee disk*

**Thrower**: the player who has h disc and propels or throws it to the opponent.

**Court**: an enclosure or field marked out for playing games like Frisbee



*Frisbee field*

# PHYSICAL HEALTH EDUCATION

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### ONE HANDED RIM CATCH

#### *How to perform one handed rim catch*

- Watch and time the oncoming disc carefully as it flies towards you.
- Stand with your feet shoulder-width apart with knees slightly bent
- Aim to catch the disc with one hand
- Catch the disc between your thumb and fingers

### FOREHAND THROW

The forehand throw in Frisbee is also known as the flick. It is one of the two common ways to throw a Frisbee.

### BACK HAND THROW

It is one of the easiest and common throws in the game of frisbee. It is inspired by the backhand in lawn tennis. Backhand throws can be used for short, medium and long-range passing.

#### *How to perform back hand throw*

- Grip the disc with one hand
- Swing the non-throwing hand backwards
- Stand sideways to the direction you want to throw.
- With knees slightly bent and legs shoulder-width apart
- Take the disc back around the body
- Bend your elbow slightly as shown below
- Bring the arm around quickly

# PHYSICAL HEALTH EDUCATION

## GRADE 4

- At the same time step, onto your target, let go of the disc by flicking the wrist with power
- Begin by throwing the disc using the wrist only. Don't use your arm yet

### WARM UP AND COOL DOWN ACTIVITIES

Warm up: activities that are done to prepare the muscles for vigorous activities

#### *Importance of warm ups*

1. They prepare the body for the game of the day
2. Muscles become warm
3. The blood begins to warm up
4. The joints become more flexible, they can move easily
5. Helps to prevent injuries
6. The brain becomes prepared for the activities

**Cool down activities** are activities that are slow and easy.

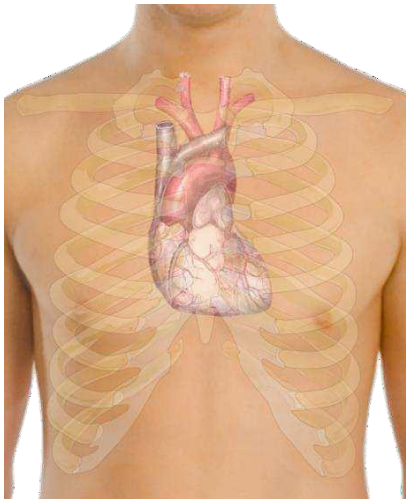
#### *Importance*

1. The heart beat goes back to normal gradually
2. The muscles stretch easily without being injured
3. Helps to take blood back to the heart and the rest of the body gradually

### THE HUMAN HEART

# PHYSICAL HEALTH EDUCATION

## GRADE 4



- The human heart is located between the lungs.
- It is protected by the ribs in the rib cage. It helps to pump blood throughout the body
- The heart pumps blood to the lungs to get oxygen and to remove carbon dioxide
- This pumping gives the heartbeat. The normal heart beat of an adult is 60-100 beats per minute

Heart beat: on complete pulsation of the heart.

### Functions of the heart

- ✚ Pumping oxygenated blood to the other body parts.
- ✚ Pumping hormones and other vital substances to different parts of the body.
- ✚ Receiving deoxygenated blood and carrying metabolic waste products from the body and pumping it to the lungs for oxygenation.
- ✚ Maintaining blood pressure.

### What happens to the body during exercise?



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- ✚ The heart beats faster
- ✚ The person sweats a lot
- ✚ The person gets thirsty
- ✚ The body temperature increases
- ✚ The person breathes harder
- ✚ Blood flow inside the body increases to the brain and muscles
- ✚ The bones become stronger
- ✚ One gets tired and hence gets difficult to talk.

### CARDIORESPIRATORY ENDURANCE

- The system is composed of the lungs, the heart, the blood and the blood vessels.
- Cardiorespiratory endurance is the ability of the heart and lungs to work together when you are doing an exercise for an extended period of time. We can develop the endurance by:
  - ✓ Running
  - ✓ Brisk walking
  - ✓ Jogging
  - ✓ Cycling
  - ✓ Swimming
  - ✓ Dancing

### MUSCULAR STRENGTH

- Muscular strength refers to the maximum force produced by a muscle or group of muscles in a single muscular contraction.

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- Muscular strength can be achieved by using weights.

### *We need strong muscles because:*

1. They reduce the chances of getting injuries while doing your daily activities
2. They reduce body fat and increase lean (*containing little or no fat*) muscles in the body.
3. Helps to maintain correct posture
4. Helps in carrying out the day-to-day activities
5. Helps in maintaining strong bones that have high bone density.

**Muscular contraction:** changes in the length of muscle

### **MUSCULAR ENDURANCE**

- Refers to the ability of a muscle group to perform a repeated action without getting tired.

### **Importance of muscular endurance**

- ✚ Helps increase our stamina for performing daily chores for example cleaning the classroom and gardening
- ✚ Helps us in preventing injuries that would be caused overuse of our active muscles throughout the day.
- ✚ Increasing your muscular endurance will make everyday chores and tasks easier. Training muscular endurance will increase your stamina — you'll have more energy to go from your job to playing with your kids, for example.

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- ✚ You will find that performing repetitious physical activity — such as gardening, raking leaves and washing your car — will become less fatiguing, too. Emphasizing the importance of endurance in your training will also limit injuries sustained from physical exertion and from the overuse of active muscles throughout the day.
- ✚ Helps us improve our posture by strengthening our major muscles that are necessary for activities such as sitting in class for long hours.
- ✚ Helps avoid lower back pain by strengthening the endurance of the abdominal and lower back muscles.

### **MUSCULAR AND JOINT FLEXIBILITY**

- ✚ Flexibility refers to the capacity of a joint or muscle to move through its full range of motion.

#### **The benefits of taking part flexibility**

- The body gets more freedom of movement
- Body posture is improved
- Tearing of muscle is reduced
- Helps to relieve muscle tension
- Increases our mental and physical relaxation

### **NUTRITION AND SPORTS PERFORMANCE**

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- ✚ **Nutrition** refers to the process of obtaining nutrients that are necessary for the proper functioning and growth of the body.
- ✚ **Hydration** refers to the state of the body having enough water while dehydration is lack of the required amount in the body.
- ✚ The human body is composed of about 75% water

### *How to know when my body needs water.*

- The darker your urine, the more likely it is that you are not drinking enough water to maintain health.
- *Apart from physical activities, the following could also lead to dehydration:*
  - ✓ Hot weather causing you to sweat a lot
  - ✓ Not drinking enough water
  - ✓ Drinking too much sugary drinks
  - ✓ Fevers and other illnesses
  - ✓ Lack of access to safe drinking water

### *Ways of taking clean water:*

1. By boiling it
2. By adding water guard
3. By using simple water purifiers

**Hydration:** The process of making your body absorb water or other liquid

**Dehydration:** A harmful reduction in the amount of water in the body.

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### HEALTHY EATING HABITS

- A balanced diet is a meal that has all the nutrient necessary for the proper growth of the body.

#### *Benefits of making healthy food choices during games and sports*

1. Provide us with nutrients we need for good muscle development
2. It helps us fight diseases easily if we get sick
3. It helps our muscle recover quickly after an exercise activity
4. Give us energy to take part in the physical activities

**Nutrients:** a substance or ingredient that promotes growth, provides energy and maintains life.

**Balanced diet:** a meal with all the required nutrients in proportions.

### **FOOD INTAKE DURING PHYSICAL ACITIVITY**

- When growing the body needs a lot of energy.
- Children need a plate that is one-third ratio division. This means that one-third has proteins, the other carbohydrates and the last third vegetables and fruits.
- One needs to eat a meal rich in complex or whole starch before an exercise.
- Eating should be done at least 2 hrs. before you go for sports. This will allow the food to be digested and release energy the body needs.

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- The major food groups that make up a balanced diet include:
  1. **Carbohydrates** - they are energy giving foods. E.g. ugali, bread, chapati, rice.
  2. **Proteins** - they are body building foods which include: meat, grains, eggs, nuts
  3. **Fats and oils** - they provide protective shield around major organs like heart, kidney and liver. They include: oily fishes, nuts, avocado.
  4. **Vitamins and mineral salts.** - they are protective elements and are needed in small quantity. They are found in vegetables and fruits.

### ***Dealing with emotions***

- They are also called feelings. They include joy, pain, sadness, love and anger.
- Sporting requires a state of **wellness**: which is a state of complete physical, mental, emotion and social well.

The immediate effects of negative emotions like anxiety are:

- Lightheadedness
- Muscle tension
- Elevated heart and breathing rates
- Increased blood flow to the brain and away from other organs
- Nausea
- Frequent urination and diarrhea

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Positive emotions, on the other hand, can have the opposite effect. Laughter, for example, can:

- Relieve tension throughout the body and within organs
- Relieve the subsequent side effects of depression and anxiety
- Lower blood pressure

The Longer-term physiological effects of emotions include:

- Insomnia
- Damage to kidneys
- Digestive and gastrointestinal problems
- Chronic respiratory disorders
- Damage to cardiovascular system

### ***Alcohol and drug abuse in sports performance***

Drug abuse: is the use of drugs for a purpose it was not intended for

### **Athletes and drug abuse**

- Athletes should be clean from abuse of alcohol and drugs
- Doping is the use of some drugs in order to improve sport performance.
- Doping is illegal and athletes have been disqualified because of the same.
- Athletes should therefore abstain from abuse of drugs because it could lead to:
  - ✓ Addiction
  - ✓ Organ failure
  - ✓ Severe mood swings
  - ✓ Inability to perform properly in the sporting activity
  - ✓ An increased risk of suffering from a heart attack or stroke.

How to tell when someone is abusing drugs (tell tell signs)

- a. Lose of interest in school
- b. Changing friends

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- c. Becoming moody, negative, cranky or worried all the time.
- d. Ask to be left alone a lot
- e. Having trouble concentrating
- f. Sleeping a lot
- g. Getting into fights
- h. Having red or puffy eyes
- i. Loss or gain of weight
- j. Coughing a lot
- k. Having a running nose all of the time

### Side effects of drug abuse

#### Effects of Drug Abuse in Athletes

Drug abuse among athletes may lead to negative effects such as:

- **Suspensions and bans.** Many professional athletic organizations have strict rules against using performance-enhancing and recreational drugs. Athletes who violate these rules may face serious consequences, such as suspensions or bans. In some cases, prior titles, medals, or prizes may be revoked. Professional athletes such as Lance Armstrong, Steve Howe, and Brett Favre have suffered these consequences.
- **Job loss and early retirement.** Drug abuse can impair an athlete's ability to focus and otherwise negatively affect an athlete's performance. Certain drugs will give rise to a number of side effects and may be associated with performance-hindering withdrawal symptoms. Some athletes may be forced into early retirement because of the negative effects of their drug use.
- **Health problems.** Taking anabolic steroids can result in liver and kidney damage, hypertension, and heart problems. Mental



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effects can include depression, anger, and violence. Men may also experience impotence, infertility, and development of certain female sexual characteristics (e.g., enlargement of breast tissue), while women may experience menstruation changes and development of masculine features. Andro use can lead to side effects such as decreased sperm production, shrinking of the testicles, and increased breast size in men. In women, it can lead to the development of certain masculine qualities, such as deeper voice and male-pattern hair loss. For both men and women, taking the drug may increase the risk of heart attack and stroke.

- Human growth hormone use is associated with joint pain, fluid retention, muscle weakness, and vision problems. It can also lead to carpal tunnel syndrome, high cholesterol, hypertension, enlarged heart, and diabetes.
- Excessive diuretic use can cause dehydration, muscle cramps, dizziness, rash, gout, potassium deficiency, poor balance and coordination, low blood pressure, and even death.
- The risks of using erythropoietin include heart attack, stroke, and pulmonary embolism.
- Alcohol use may impair problem-solving ability, memory, learning, and coordination and can lead to liver and neurological damage.
- Marijuana can negatively impact short-term memory, learning, balance, coordination, and ability to focus.

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- Short-term effects of amphetamine use include headaches, convulsions, hallucinations, and paranoia. Long-term effects may include permanent nerve damage and death.
- Cocaine can cause damage to the heart and respiratory, nervous, and digestive systems.<sup>1</sup>

Opioids such as heroin and prescription painkillers have a high risk of overdose. When these drugs are injected, the user's risk for contracting infectious diseases increases significantly.

Addiction. The abuse of certain drugs, such as opioids and stimulants, can lead to addiction.<sup>1,6</sup> Addiction is a brain disease that involves compulsive drug use despite negative consequences.<sup>1</sup> Athletes who are addicted to drugs or alcohol may have a difficult time quitting without professional treatment.

Death. Amphetamine use may lead to fatal hemorrhagic stroke or heart attack. Abusing opioids like heroin or prescription drugs also carries a high risk of lethal overdose. College basketball player Len Bias and professional hockey player Derek Boogaard both died of fatal drug overdoses

### Stereotypes and drug abuse

- A stereotype is an untrue belief of a particular type of person or thing. Some of the common stereotypes associated with drugs include:
  - ✓ An athlete will become a better performer
  - ✓ A learner will become better in academics
  - ✓ They make a person become popular

### Common injuries in games and sports

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- **First aid** - refers to help given to an injured person until medical assistance is available.
- the injured person is referred to as **casualty** while the other person giving first aid is referred to as the **first responder**.
- The most common injuries that happen in a playground include falls and cuts leading to bruises, bleeding and fractures.

### ABC Of First Aid

**A** - Airs

**B** - Breathing

**C** - Circulation

### Checking for breathing

- Begin by checking if the casualty is conscious by calling out their name or saying something to them.
- If they do not answer, shout out something to them, but if still unresponsive, check whether the casualty is breathing by putting you face close to their face and looking at the rise and fall of the chest.

### Performing a head tilt

- In case the casualty is not breathing; the first responder needs to find out the reason by performing the head-tilt Chin-lift to observe the airways

### Steps in performing head tilt Chin lift

1. Kneel next to the casualty's head.
2. Place one hand on the patient's forehead and tilt the head gently backward
3. Place two fingers under the bony part of their chin and lift the chin vertically upwards.
4. Take care not to place any pressure on the soft part of the neck as this could obstruct the airway.
5. Once the airway is opened, you can check for normal breathing.

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6. Place the casualty in a recovery position. It involves casualty being rolled onto the side in order to maintain the airways open.

### Checking for circulation

- It involves checking if the casualty has a pulse or beat. It is done by gently placing the index and middle finger on the chin under the jaw.
- If there is circulation, there will be pulse. You can also check the pulse on the wrist of the casualty.

### Calming an injured person

- Speak calmly to the casualty, ask their name, what day it is, where they are and what happened to them.

### Signaling for help

- When a person is hurt, the first responder should signal for help as fast as possible. This is because it may not be possible for one individual to give the required help.

### First Aid Box

- It's a box that contains essential medical items that can be used to give care to a casualty before medical assistance arrives.
- Some injuries maybe treated with the contents of a first aid box or kit. These include: bruises, sprains, nose bleeding and minor cuts.
- It is important to have a first aid kit both at home and at school as the contents can help in attending to minor ailments and injuries that occur at home or in school.

### Items found in a first aid box

- a. Bandages
- b. Elastoplast (adhesive strip dressing)
- c. Disposable latex gloves

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- d. Eye wash
- e. Iodine
- f. Alcohol swabs or antiseptic wipes.
- g. Sterile gauze
- h. Pressure pad
- i. Cotton wool or cotton balls
- j. Tweezers
- k. Scissors

### Use of the items in the first aid kit

1. **Adhesive strip dressings** - it is used for minor cuts and skin injuries
2. **Non-adhesive dressings** - used for covering burnt or abraded skin.
3. **Wound dressings** - they are thick pads used to help control bleeding and reduce the risk of infection.
4. **Crepe or conforming bandages** - they are elastic bandages used to create pressure, hold dressings in place, reduce swelling and provide some support.
5. **Triangular bandages** - they are non-elastic bandages used for slings to hold splints in place and to restrict movement.
6. **Sterile eyewash solution** - used to flush eye lashes, insects, dust, sand or similar particles from the eye.

### Bruise

- Its an injury appearing as are of discoloured skin on the body, caused by a blow or impact rupturing underlying blood vessels.

### Signs and symptoms of bruises

- Initially, a fresh bruise may actually be reddish. It will then turn blue or dark purple within a few hours, then yellow or green after a few days as it heals. A bruise is commonly tender, and sometimes even painful for the first few days, but the pain usually goes away as the color fades

### Treating a bruise

Rest and elevate the injured area to prevent swelling and relieve pain.

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Apply ice packs for the first 24 to 48 hours after injury. Wrap the ice pack in a towel and apply ice for no more than 15 minutes at a time. Repeat throughout the day. (*ice packs should not be placed directly on the skin*)

Apply a heating pad or warm compress to the injured area after two days. You can apply heat several times throughout the day.

### Nose bleeding

#### Causes of Nose bleeding

- Nose picking.
- Colds (upper respiratory infections) and sinusitis, especially episodes that cause repeated sneezing, coughing and nose blowing.
- Blowing your nose with force.
- Inserting an object into your nose.
- Injury to the nose and/or face.
- Blood-thinning drugs (aspirin, non-steroidal anti-inflammatory drugs, warfarin, and others).
- Cocaine and other drugs inhaled through the nose.
- Chemical irritants (chemicals in cleaning supplies, chemical fumes at the workplace, other strong odors).
- High altitudes. The air is thinner (lack of oxygen) and drier as the altitude increases.
- Frequent use of nasal sprays and medications to treat itchy, runny or stuffy nose. These medications - antihistamines and decongestants - can dry out the nasal membranes.
- Alcohol use.
- Bleeding disorders, such as hemophilia or von Willebrand disease or leukemia.
- High blood pressure.

#### **Safety Tips**

- Do not touch blood of the casualty with your bare hands

#### Types of wounds: Clean -cut wounds

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- Open wounds can be caused by falls in the playground or by sharp objects.

### Managing Open Wounds

- The first step is to clean the wounds
- Use antiseptic from the first aid box
- If the cut is small and, on the surface, use alcohol swab *(a wad of absorbent material usually wound around one end of a small stick and used especially for applying medication or for removing material from an area)*, then cover with an adhesive strip dressing (Elastoplast)
- If it is slightly deep, clean with running water from a tap or poured from a clean cup then apply a band aid.
- if the cut is deep and there is a lot of bleeding, apply pressure on the wound with the pressure pad from the first aid box.
- Keep the pressure on the wound until the bleeding stops, but do not remove the pad.
- Secure the wound after bleeding stops with a bandage. In the absence of a bandage, tie the wound with a clean piece of cloth.

### Transporting an injured victim

#### Single human crutch method

- is a method used to support a casualty, and can only be used when the casualty is conscious and capable of assisting the first respondent.
- It can only be used when one has hurt only one leg. The first respondent is used as a crutch by the casualty.

#### How to do it

- a. Assist the casualty to stand by leaning on you
- b. He or she then puts the arm across your shoulder
- c. This should be the side with the hurt leg.
- d. Grab the wrist of the hand across your shoulder and grab the waist from across the back of the casualty.

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- e. Let the casualty place the hurt leg on your foot so that his/her weight is mainly on you.

### NOTE:

This method only works if both the first aider and the casualty are approximately of the same height.

## Leisure Activities

### *Active and passive leisure activities*

- Leisure activities are performed for fun
- There are mainly two types of leisure:
  - a. **Passive leisure activities** - are activities that someone is not participating in the activity
  - b. **Active leisure activities** - are those that someone is fully a participant.
- Leisure activities give us the opportunities to be ourselves and get creative.

## Disadvantages of passive activities

- They lead to development of lifestyle problems and diseases.
- It reduces our creativity and lead to health problems due to long hours spent in sedentary positions.

## **Leisure and time management**

- Time management - is the ability to organize activities one has to perform in a given amount of time
- Leisure time is the free time.



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- It is good to take time off from studies and from watching television to engage in a leisure activity individually or with friends
- Leisure activities include:
  - ✓ Reading a story book
  - ✓ Taking nature walks
  - ✓ Volunteering at the local children's home
  - ✓ Taking part in artistic activities such as painting.
  - ✓ Listening to music
  - ✓ Attending a sporting activity as a spectator.

### Care for community recreation facilities

- These are sometimes referred to as public facilities and are services offered by the state to its citizens
- There are various ways of taking care of these facilities
  - ✚ By avoiding littering these areas
  - ✚ Planting trees in these areas
  - ✚ Finding an alternative source of fuel
  - ✚ Drawing graffiti (**unauthorized writing or drawing on a public surface**) on the walls of these areas should be discouraged to preserve their beauty.