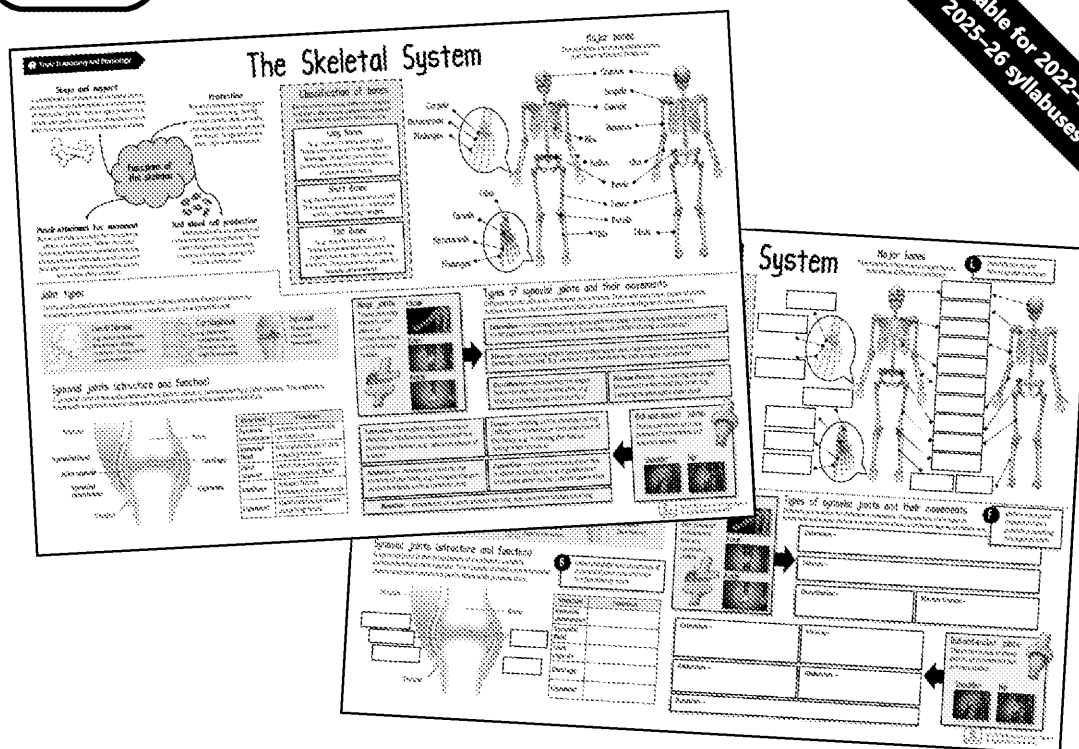




Topic on a Page

for Cambridge IGCSE (9–1) PE

Paper 1: Theory

Folder A: Completed Mind Maps

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All mind maps are provided in A3 and A4

Teacher's Introduction

This resource is intended to be used as a revision tool to support students in their preparation for the **Cambridge IGCSE (9–1) Paper 1 Theory** exam for PE (2022–24 and 2025–26 syllabus). It covers the entire theory specification across the four subject content areas:

1. Anatomy and physiology
2. Health, fitness and training
3. Skill acquisition and psychology
4. Social, cultural and ethical influences

Remember!

Always check the exam board website for new information, including changes to the specification and sample assessment material.

The aim of the resource is to summarise the different topics covered within each of these content areas into manageable sheets of A3 paper, providing students with an engaging visual overview of each topic.

The resource comes with partially completed mind maps which form activity pages, giving students the opportunity to test their knowledge of the content by completing questions set out on each page. It can be used by students of all abilities, as high-achieving students could illustrate each topic with additional applied examples, whereas lower-ability students may wish to annotate each page to enhance their comprehension of topic areas.

In total, there are:

- 27 completed mind maps, which summarise each topic area, labelled: 
- 27 partially completed activity mind maps, which students can use to test their knowledge, labelled: 

How to use the resource:

- The sheets can be handed out at the end of each topic for revision purposes. This can help students recap knowledge of each topic at the end of teaching that area.
- Each page can be printed out in poster size and displayed on your classroom walls as the topic is being taught, so that students have a visual reminder of what they have been covering in their lessons.
- Students should be encouraged to complete the partially completed mind maps to test their knowledge as part of revision after all content has been taught, or after each topic.

August 2023

The Skeletal System

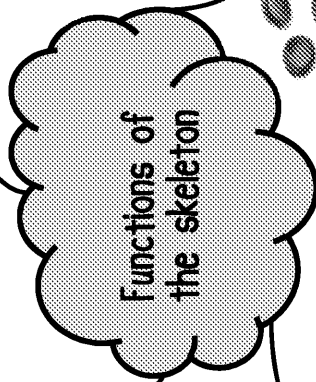
Shape and support

A combination of fused and unfused bones allows the body to be stable while also moving at particular joints, e.g. a rugby player in a scrum can push using their shoulders while also moving their arms to maintain balance.



Protection

Bones protect internal organs from injury, e.g. during contact sports, such as rugby, the ribs and cranium protect the heart, lungs and brain from injury in the tackle.



Muscle attachment for movement

Bones provide a surface for muscles to attach via tendons. When muscles contract, they cause movement, e.g. the biceps attach to the radius and ulna and pull the lower arm towards the upper arm when they contract.



Red blood cell production

Red blood cells are produced in the marrow of long bones. They carry oxygen to our working muscles to release energy for muscle contraction.

Classification of bones

Bones come in many different shapes and sizes. Below are common types of bones and an outline of their role.

Long Bones

(e.g. bones of arms and legs)
These bones are primarily used for **leverage**. Muscles pull on these bones when they contract, allowing movement to occur.

Short Bones

(e.g. bones of the ankles and wrists)
These bones support us in physical activity, by **bearing weight**.

Flat Bones

(e.g. the ribs and cranium)
These bones **protect** our internal organs, such as the ribs and the cranium. They also provide a site for **muscle attachment**.

Carpals

Metacarpals

Phalanges

Metatarsals

Phalanges

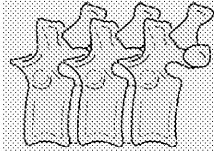
Joint types

Joints are formed where two bones meet. Some joints are fixed and allow no movement, while others are freely moveable, such as a synovial joint.



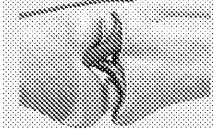
Fixed/fibrous

e.g. sutures between the bones of the cranium. These joints are immovable.



Cartilaginous

e.g. between vertebral discs. These joints are slightly movable.

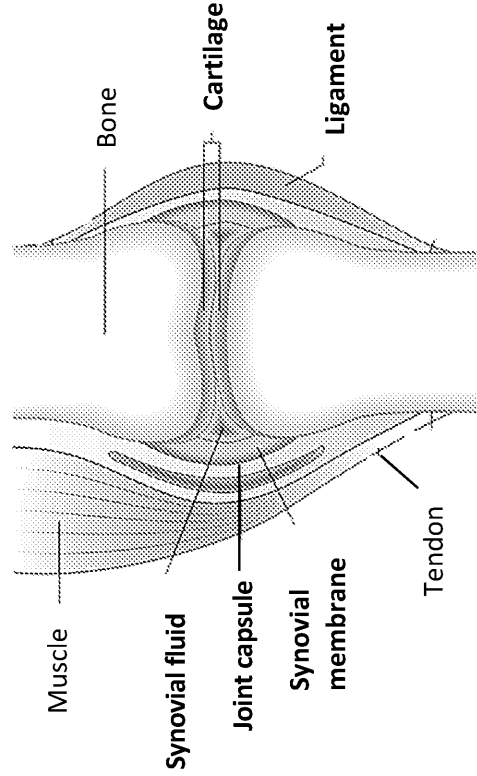


Synovial

These are freely movable (see below).

Synovial joints (structure and function)

A synovial joint is the articulation of two bones which is surrounded by a joint capsule. The capsule is lined with a synovial membrane and contains a cavity filled with synovial fluid.



Structure	Function
Synovial membrane	secretes synovial fluid for lubrication
Synovial fluid	lubricates the joint and reducing friction
Joint capsule	seals the joint space to keep in synovial fluid
Cartilage	reduces friction between two bone ends
Ligament	stabilises the joint and absorbing shock

Hinge joints

These can only move in one plane of movement but are relatively stable.

Elbow:

Knee:

Ankle:

Extension – straightening at the shoulder / backwards movement of humerus or femur, e.g. upwards a squat

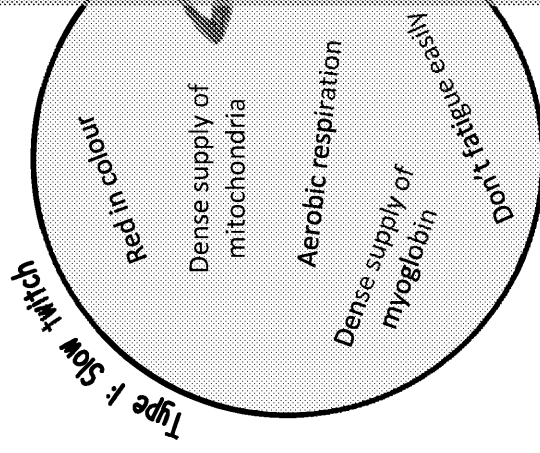
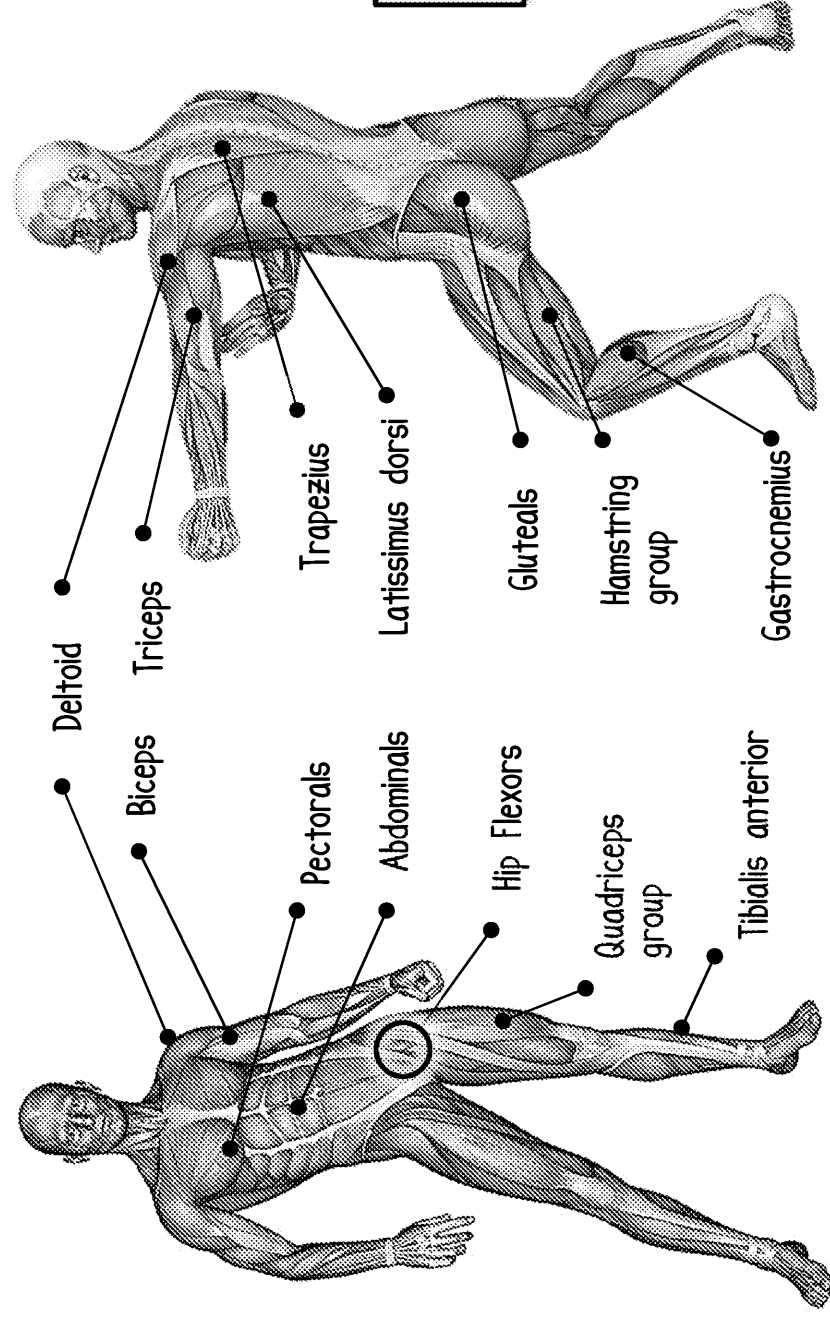
Adduction – movement towards midline of the body, e.g. bringing across the body with a forearm s

Rotation – movement of a

The Muscular System

Major Muscles of the Human Body

The main role of skeletal muscle is to allow movement by working with the skeleton. Muscles attach to bones via **tendons** and contract to pull on the bones to cause movement.

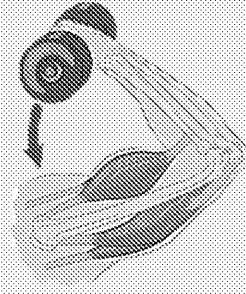


Importance in sport:

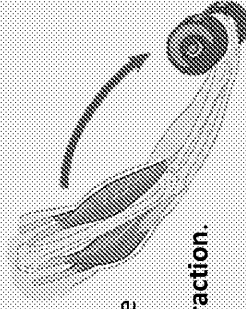
Type I: Useful for long-distance performance such as marathon runners

Muscles work

- Muscles contract in two ways:**
- Isotonic contractions:** when muscles change length as they contract.
These can be either:
 - ★ **Concentric** – shorten as they contract OR
 - ★ **Eccentric** – lengthen as they contract
 - Isometric contractions:** when muscles stay the same length as they contract.



The biceps contracts and shortens to cause flexion of the elbow. This is **isotonic concentric contraction**.



The biceps is still contracting to lower the weight, but this time is lengthening as it contracts. This is **isotonic eccentric contraction**.

Isometric contraction would occur if the dumbbell was held at a midway point. The biceps would be contracting but not changing length.

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Antagonist

Also known as the **antagonist** contracts (and pulling)

The **biceps** is the **agonist** to cause **flexion** of the elbow as the **antagonist** and **relaxes** the movement

The Respiratory System

Pathway of air

Mouth and nose



Trachea



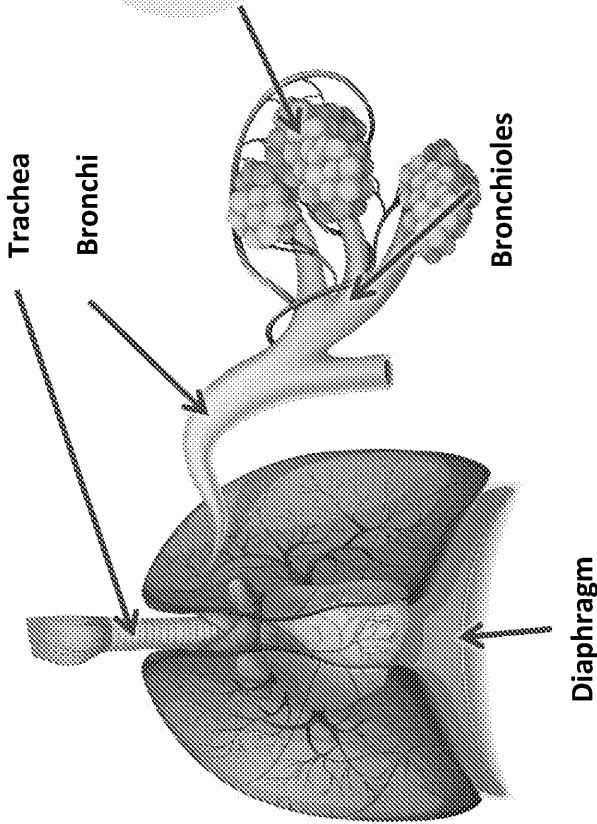
Bronchi



Bronchioles



Alveoli



Alveoli

Features that assist gaseous exchange at the alveoli when supporting aerobic exercise:

- ❖ **Large surface area** provides a greater area for diffusion to occur over
- ❖ **Moist, thin walls** (one cell thick) reduce the diffusion distance
- ❖ **Short distance for diffusion** reduces the times it takes for diffusion to occur
- ❖ **Vast number of capillaries** increases the blood supply and oxygen supply
- ❖ **Large blood supply** increases the supply of gases and, therefore, increases the diffusion gradient
- ❖ Movement of gas from high concentration to low concentration

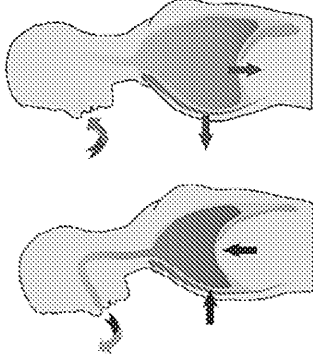
Breathing

A spirometer:

Ch	TV	VC	RV	VE
	Tidal Volume: normal amount of air inspired/expired	Vital Capacity: largest volume of air that can be forcibly expired following largest inspiration	Residual Volume: the air left in the lungs prior to maximal expiration	Minute ventilation (VE): the amount of air a person inspires or expires in a minute

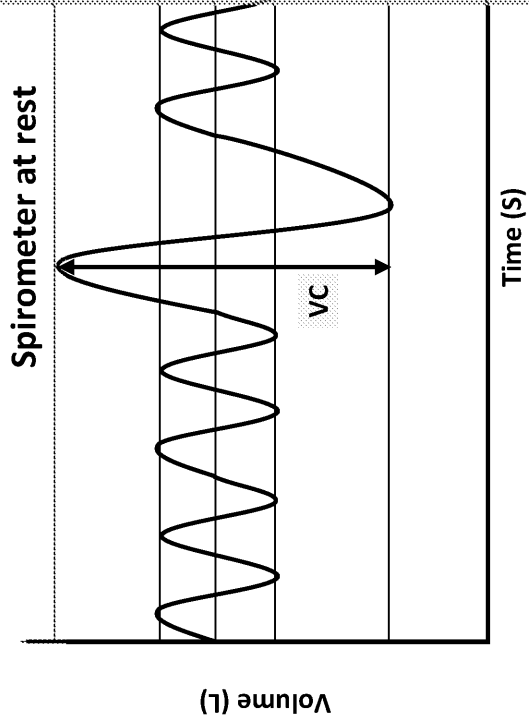
The Mechanics of Breathing

In order for us to get oxygen into our bodies, we have to breathe. Outlined below is the mechanics of how we breathe:



Changes to our mechanics of breathing lead to changes in our Tidal Volume.

		Expiration	Inspiration	Changes during exercise
Intercostal muscles	External	Relax	Contract	More forceful contraction of intercostal muscles
	Internal	Contract	Relax	
Ribs		Lower	Rise	More forceful contraction of the diaphragm
Diaphragm		Relaxes into dome shape	Contracts and flattens	
Lung volume		↓	↑	Greater pressure difference between the lungs and environment
Air pressure in lungs		↑	↓	
Air pressure is relatively high in...		The lungs	The environment	



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The Structure of the Heart Pathway of Blood

Heart Rate
(HR)

The number of heartbeats per minute

Plasma

- ★ All of the blood cells are suspended in the plasma
- ★ It allows blood cells to move around the body
- ★ It plays a role in temperature regulation

Platelets

- ★ Responsible for clotting open wounds
- ★ Prevent major blood loss when wounds occur as a result of accidents in sport and physical activity

Plasma

- ★ All of the blood cells are suspended in the plasma
- ★ It allows blood cells to move around the body
- ★ It plays a role in temperature regulation

- ★ Responsible for clotting open wounds
- ★ Prevent major blood loss when wounds occur as a result of accidents in sport and physical activity

Red Blood Cells

- ★ Form part of the immune response
- ★ Respond when foreign cells such as viruses enter the body
- ★ Help to maintain health

- ★ These contain haemoglobin
- ★ Oxygen combines with haemoglobin in order to be transported to working muscles
- ★ Carbon dioxide combines with haemoglobin in order to be removed from the body

The blood fills the heart during **diastole** and is pumped out of it. The flow of blood between different structures is controlled by blood under high pressure to flow through them, but prevent it in the opposite direction.

Deoxygenated blood flows into the **right atrium** via the

The blood passes into the **right ventricle** (as the valve and ventricle opens).

The right ventricle contracts to force blood out of the **lungs** via the **pulmonary artery** (the valve in this artery

At the lungs, gaseous exchange occurs and **oxygen** is taken up by the blood. The blood becomes **oxygenated**.

The **oxygenated blood** is transported to the **left atrium** via the **pulmonary vein**.

Blood then flows into the **left ventricle** (the valve between the left atrium opens and then closes).

Blood is pumped out of the heart and transported to the rest of the body via the **aorta** (the valve in this artery opens and then closes to prevent backflow).

The valves of the heart open due to the pressure of the blood to prevent backflow of blood.

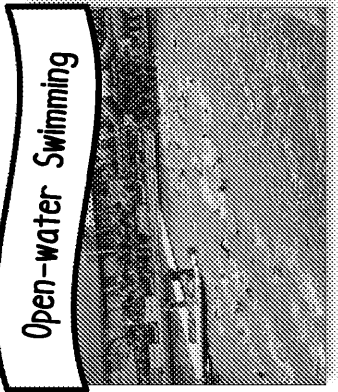
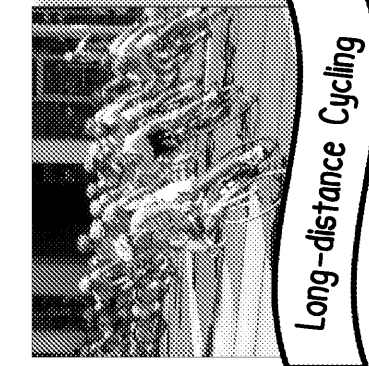
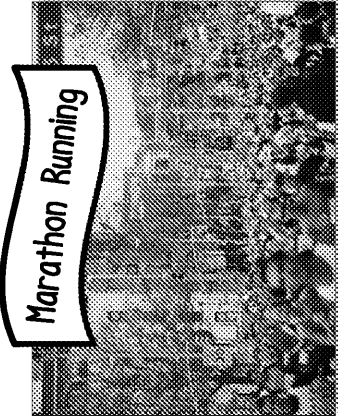
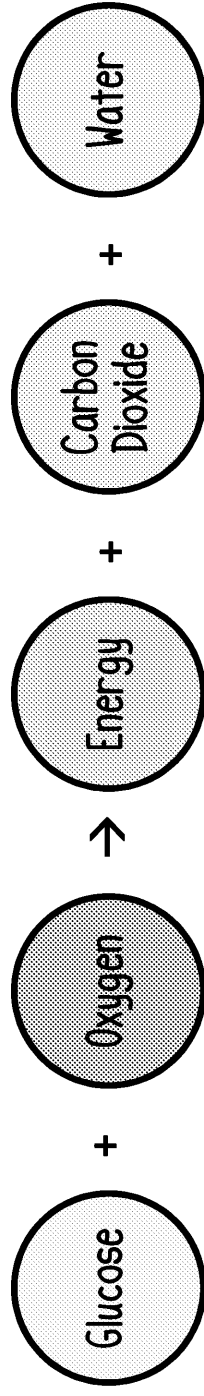


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Aerobic Exercise

Aerobic exercise is any form of exercise which is completed at an intensity that allows a plentiful supply of oxygen to be taken in by the lungs and used by the body.

Below is a summary equation and sporting examples of **aerobic** exercise:



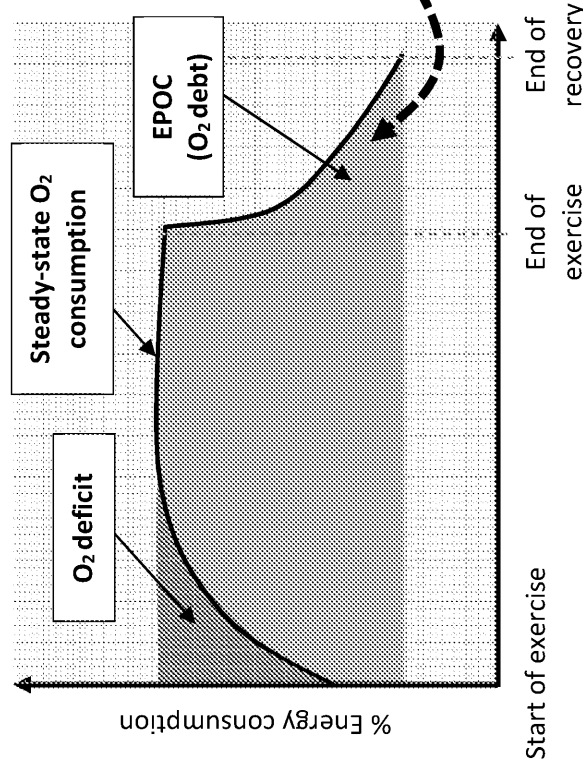
These sports are all performed at a relatively **low intensity** and for a **prolonged period of time**.

Aerobic and Anaerobic R

Excessive post-exercise oxygen consumption (EPOC)

is the process which ensures that lactic acid is removed from the body by keeping an elevated breathing rate after exercise has stopped.

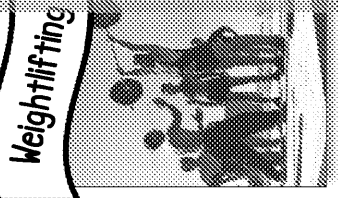
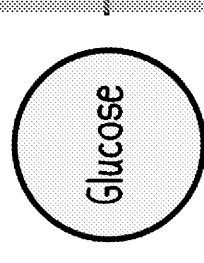
- EPOC occurs following **anaerobic exercise**, such as performing a 100 m sprint.
- The graph below outlines the breathing rate of an athlete during and after **anaerobic exercise**:



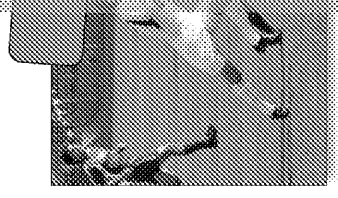
Factors affecting recovery time

- Intensity and duration of exercise:** The higher the intensity of exercise and the longer duration, the longer the recovery time needed
- Age:** An older individual will take longer to recover
- Fitness levels:** Fitter athletes recover from exercise more quickly
- Hydration:** Being dehydrated increases recovery time as blood travels more slowly
- Nutritional supplements** taken during activity, such as glucose, can increase the rate of recovery
- Sleep:** inadequate amount or quality of sleep can prolong recovery time
- Environment:** Environments, such as high altitude or hot, humid conditions, can affect recovery time
- Injury and illness:** previous injuries or illnesses can impact recovery time
- Type of exercise:** Strength or endurance training may need more recovery time

Anaerobic exercise is a form of exercise that does not require taking in enough oxygen to produce energy. Below is a summary equation:



Often, sports require a mix of aerobic and anaerobic energy systems.



Middle-distance and long-distance running are primarily aerobic, but they also require anaerobic energy in order to produce the final burst of speed.

However, sprint running is primarily anaerobic, as it requires a rapid burst of energy to produce the final burst of speed.

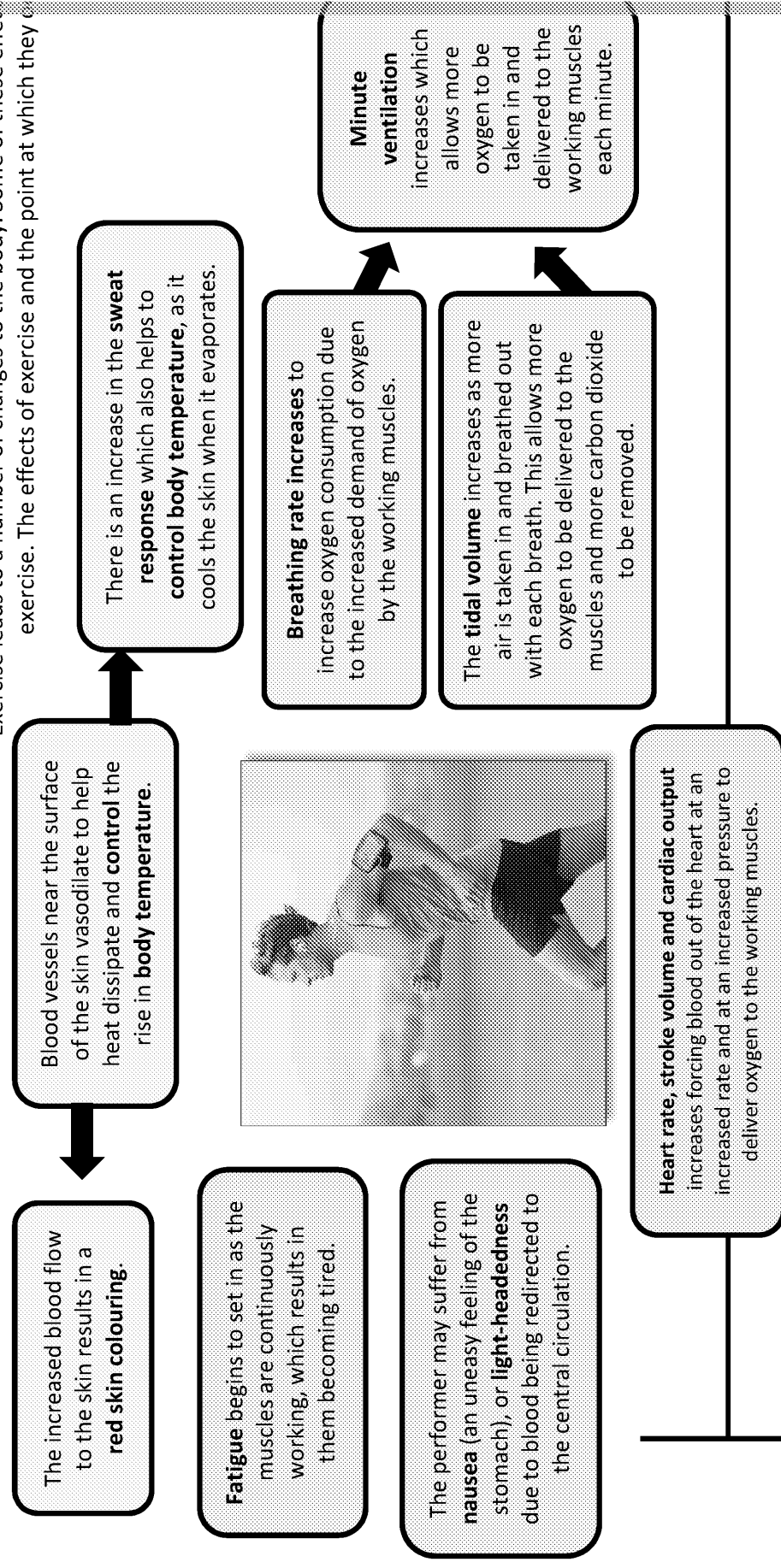
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Short- and Long-term Effects of Exercise

Exercise leads to a number of changes to the body. Some of these effects are shown in the diagram below. The effects of exercise and the point at which they occur are shown in the diagram below.

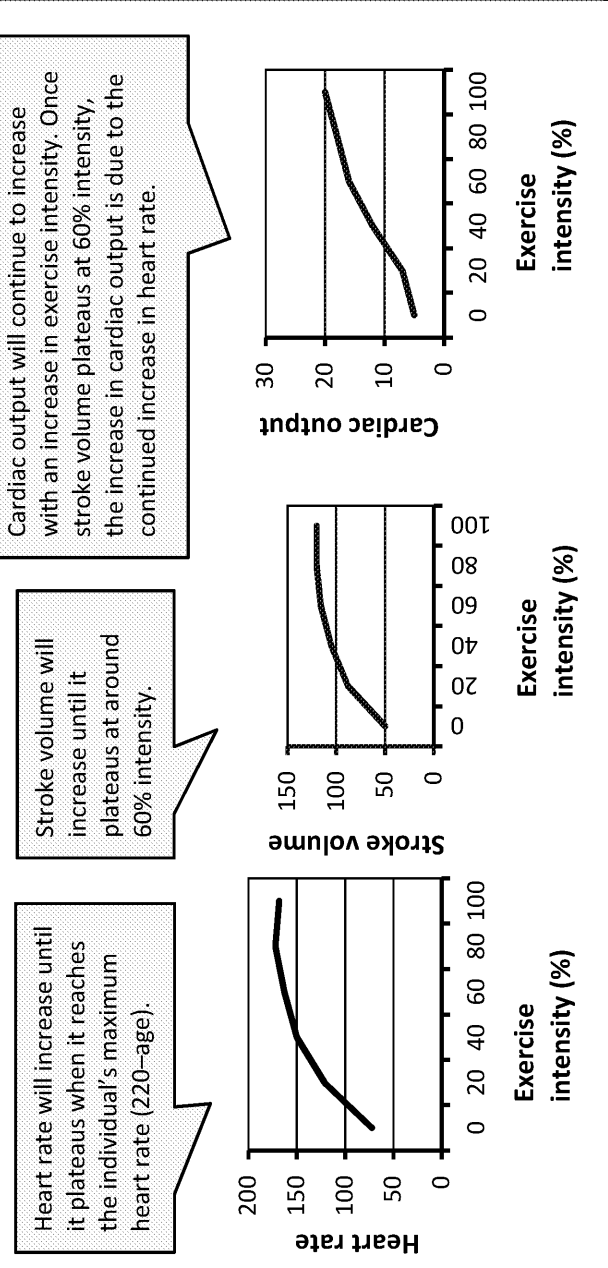


Short-term Effects of Exercise

Heart rate, stroke volume and cardiac output during exercise

During exercise, the heart rate and stroke volume increase in proportion to the increase in the intensity of exercise until a plateau is reached. This results in a greater cardiac output which provides the body with greater levels of oxygen during exercise.

The changes to cardiac function during exercise are displayed in the graphs below:



You will be able to **exercise for longer** as the body is able to tolerate higher levels of **lactic acid** and be more **resistant to fatigue**.

A reduction in resting heart rate called **bradycardia** occurs, which reduces the strain placed upon the heart.

Remember...

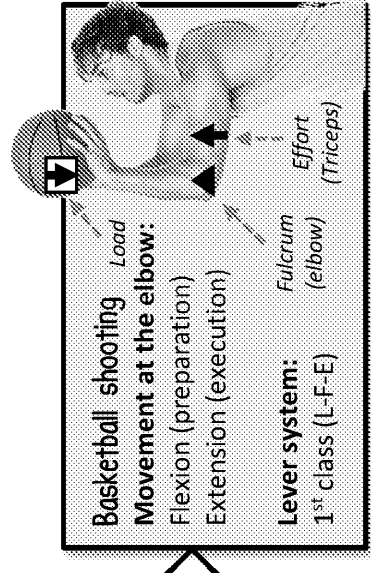
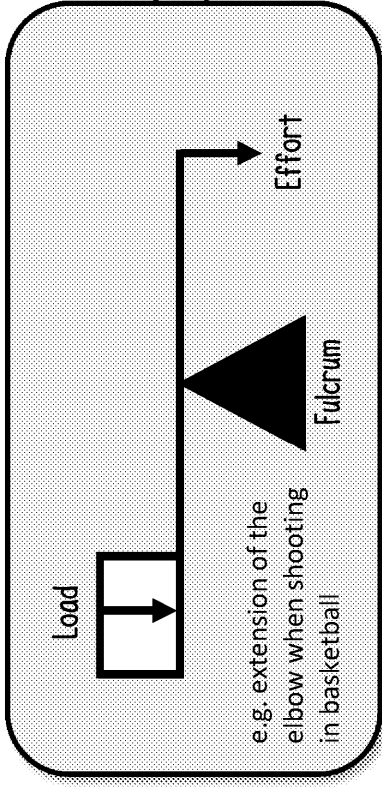
$$\text{Cardiac Output } Q = \text{Heart Rate} \times \text{Stroke Volume}$$

Simple Biomechanics

Lever Systems

Movement at the joints occurs by one of the three classes of levers.

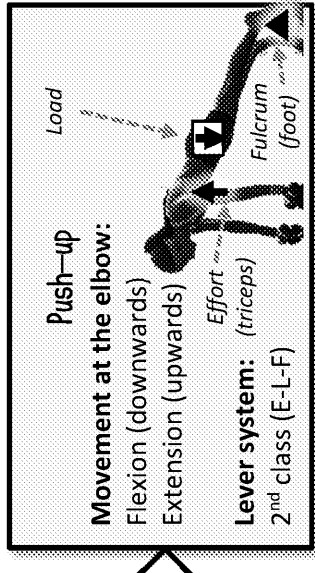
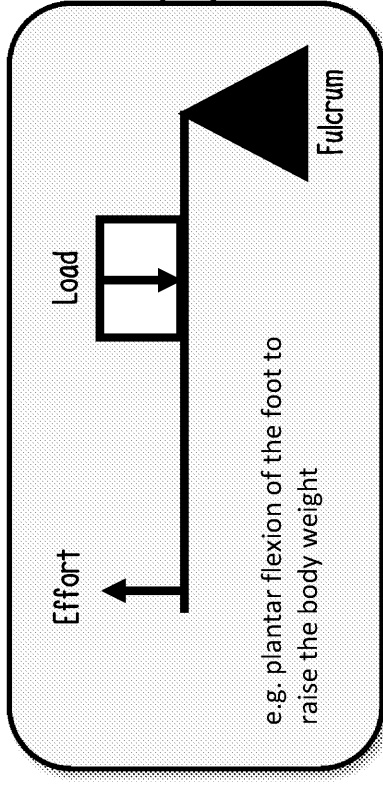
1st Class



Basketball shooting
Movement at the elbow:
Flexion (preparation)
Extension (execution)
Lever system:
1st class (L-F-E)
Fulcrum (elbow)
Load (ball)
Effort (Triceps)

Javelin throw
Movement at the Elbow:
Extension (pull-back)
Flexion (throwing phase)
Lever system:
1st class (E-F-L)
Effort (triceps/biceps)

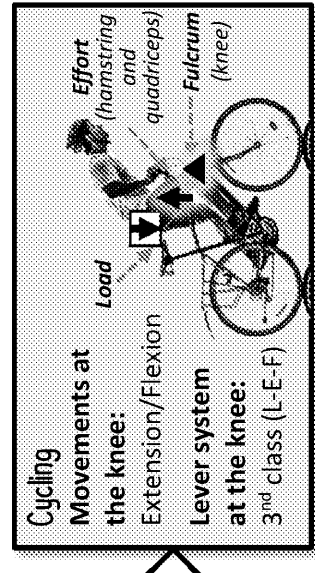
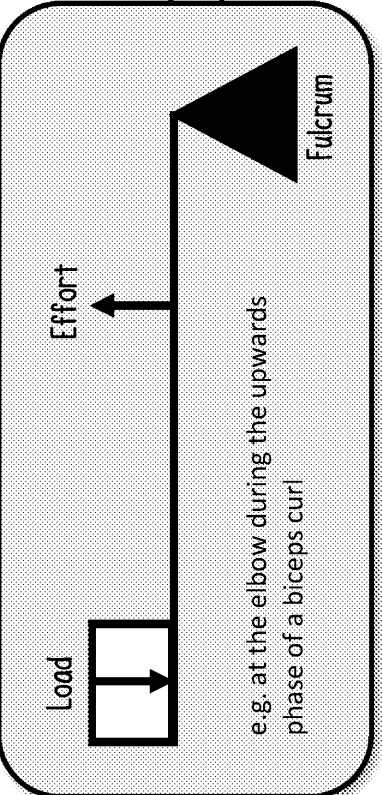
2nd Class



Push-up
Movement at the elbow:
Flexion (downwards)
Extension (upwards)
Lever system:
2nd class (E-L-F)
Effort (triceps)
Load (body weight)
Fulcrum (foot)

Jumping
Movement at the ankle:
Plantar flexion* (take-off)
Dorsiflexion* (landing)
Lever system at the ankle:
2nd class (E-L-F) Effort (gastrocnemius)

3rd Class



Cycling
Movements at the knee:
Extension/Flexion
Lever system at the knee:
3rd class (L-E-F)
Load (resistance from hamstrings)
Effort (quadriceps)
Fulcrum (knee)

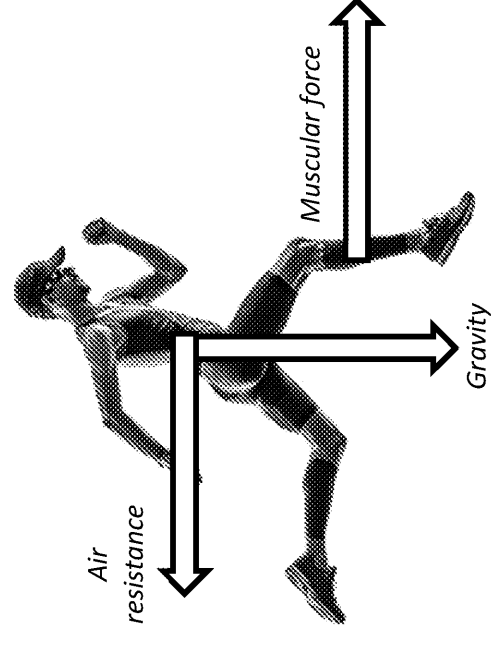
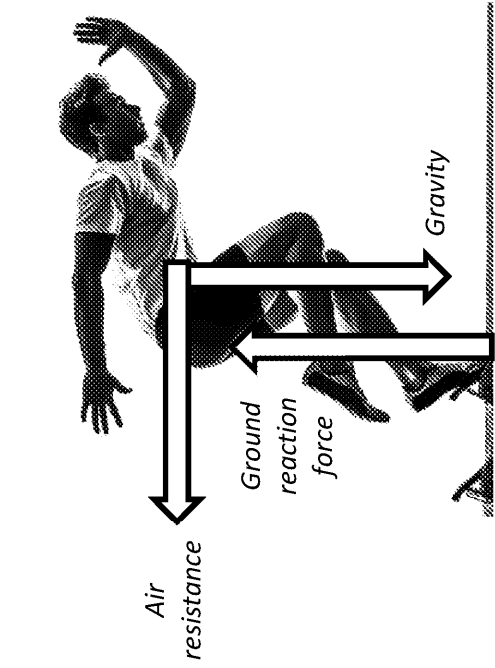
Biceps curl
Movement at the Elbow:
Extension (downwards)
Flexion (upwards)
Lever system:
3rd class (F-E-L)
Effort (biceps)
Fulcrum (elbow)

Revision Success Tip!

Remember...

1 2 3
F L E

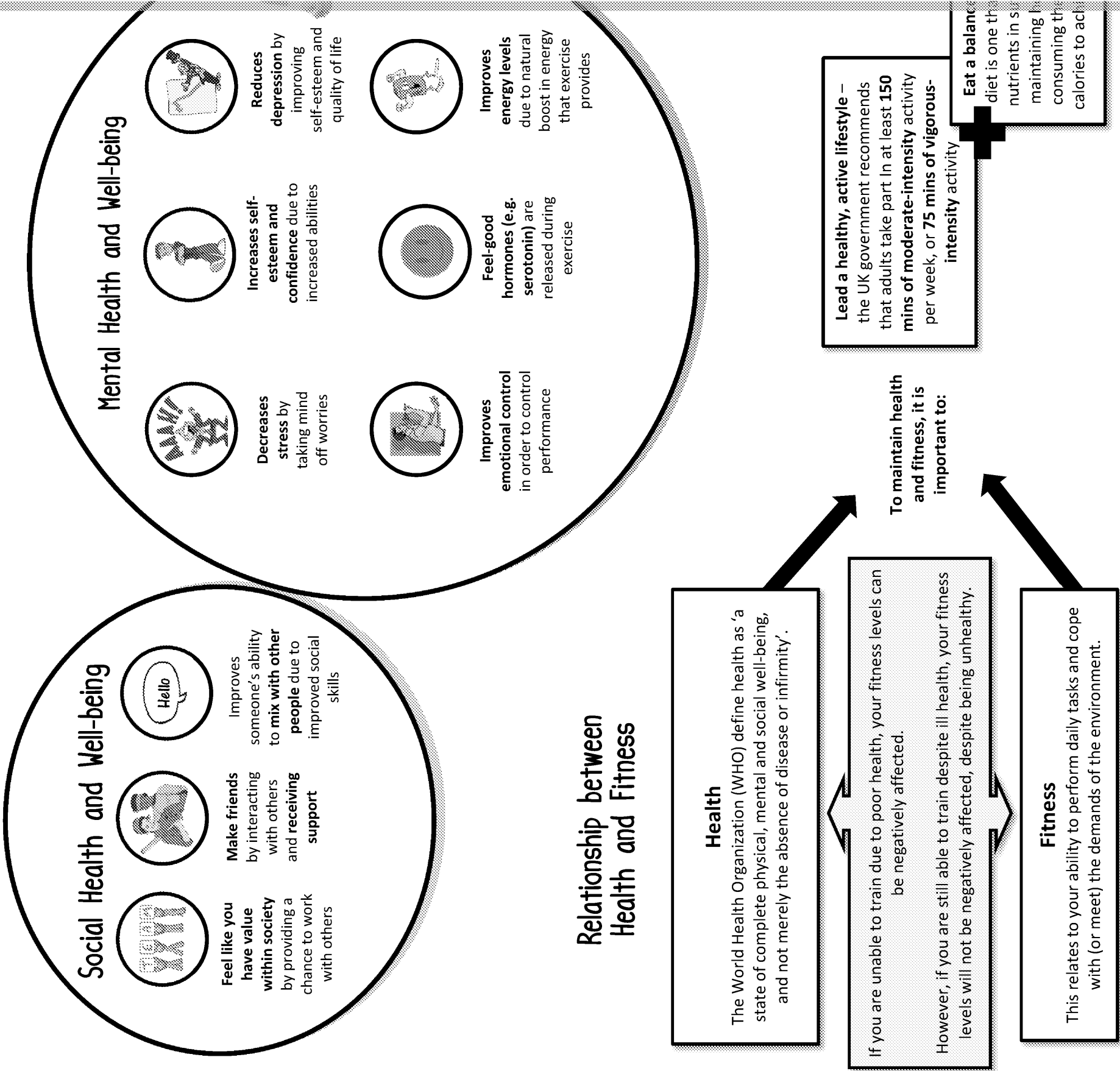
The letter is the middle part of the lever system



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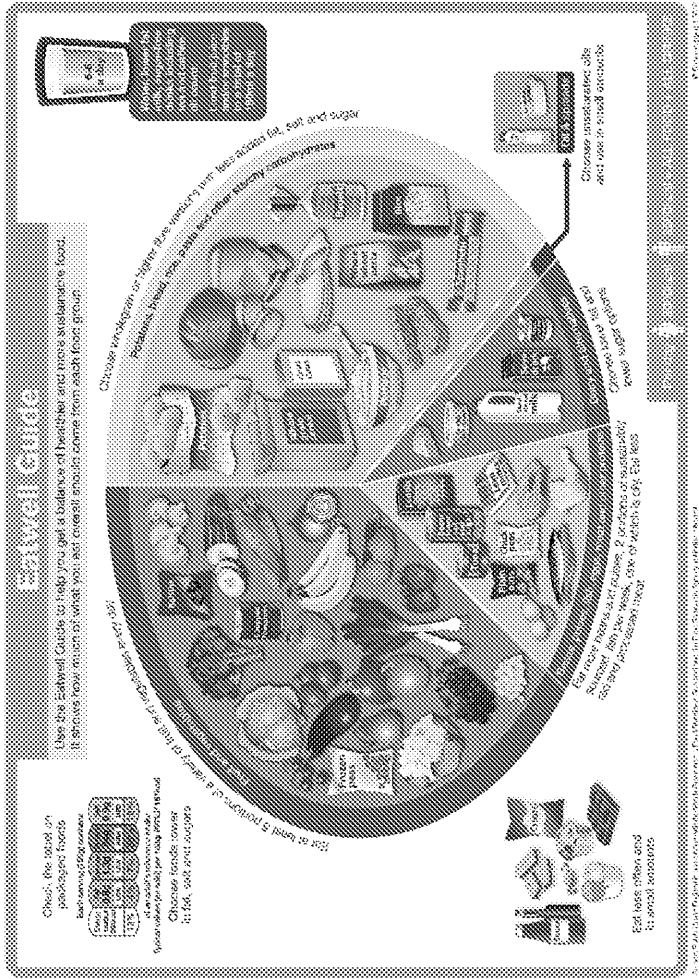
Diet and Energy Sources

Balanced Diet

There is no single food which fulfils the needs of the body; therefore, it is important that a balanced diet is consumed. A balanced diet is needed to:

- ensure enough nutrients, vitamins and minerals are consumed
- limit the storage of unused energy as fat
- reduce the likelihood of a person developing obesity
- ensure energy is available for physical activity
- ensure nutrients are available for energy, growth and hydration

The Eatwell Guide is a useful tool for following a healthy balanced diet...



Fibre is a type of carbohydrate that is important for digestive health and aids the uptake of other nutrients. Examples include dried fruits, nuts and wholegrains.

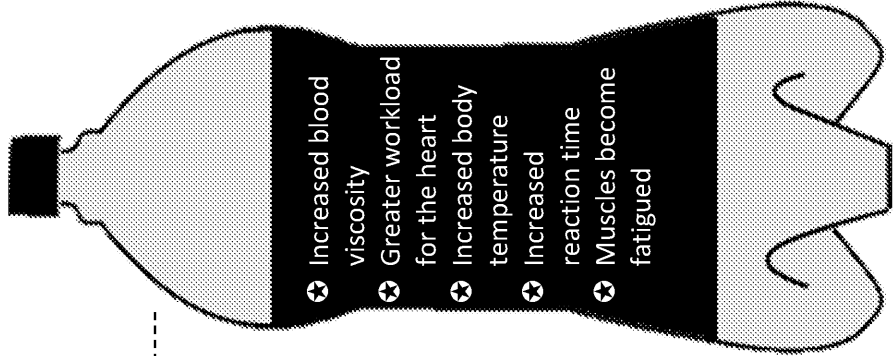
Macronutrients needed by the body in large amounts	
Carbohydrate	- Should make up 50% of the diet - Main source of energy for the body - Provides fuel for aerobic and anaerobic exercise - Can be found in foods such as pasta, rice, bread, etc. - Complex carbohydrates, e.g. pasta, release energy, whereas simple carbohydrates, e.g. sugar, provide quick-release energy
Fat	- Should make up 30–35% of the diet - Provides energy for aerobic exercise - Important energy source during rest, such as walking - Provides insulation for the body - Provides protection for the vital organs - Excessive intake should be avoided to prevent obesity and obesity-related health problems
Protein	- Should make up 15–20% of the diet - Building blocks of the body - Required for muscle growth and repair - Required during recovery from exercise to repair tissue - Complete proteins: red meat, chicken, fish, etc. - Incomplete proteins: vegetables, etc.

Macronutrients needed by the body in small amounts

Minerals and vitamins ensure body systems are functioning effectively. Examples include vitamins C and D improve immune function and so reduce the risk of becoming ill

Water and dehydration

- ❖ Dehydration occurs when there is an imbalance between the amount of water taken in through food and drink and the amount of water lost.
- ❖ In order to avoid dehydration it is important that enough water is drunk.
- ❖ Drinking water is particularly important when exercising, as more water will be lost as sweat.
- ❖ In some sports such as long-distance running and cycling, the athletes can consume water as they compete. However, in team sports such as hockey, the athletes usually need to wait for a break in play, e.g. during an injury or at half-time.



Long-distance running

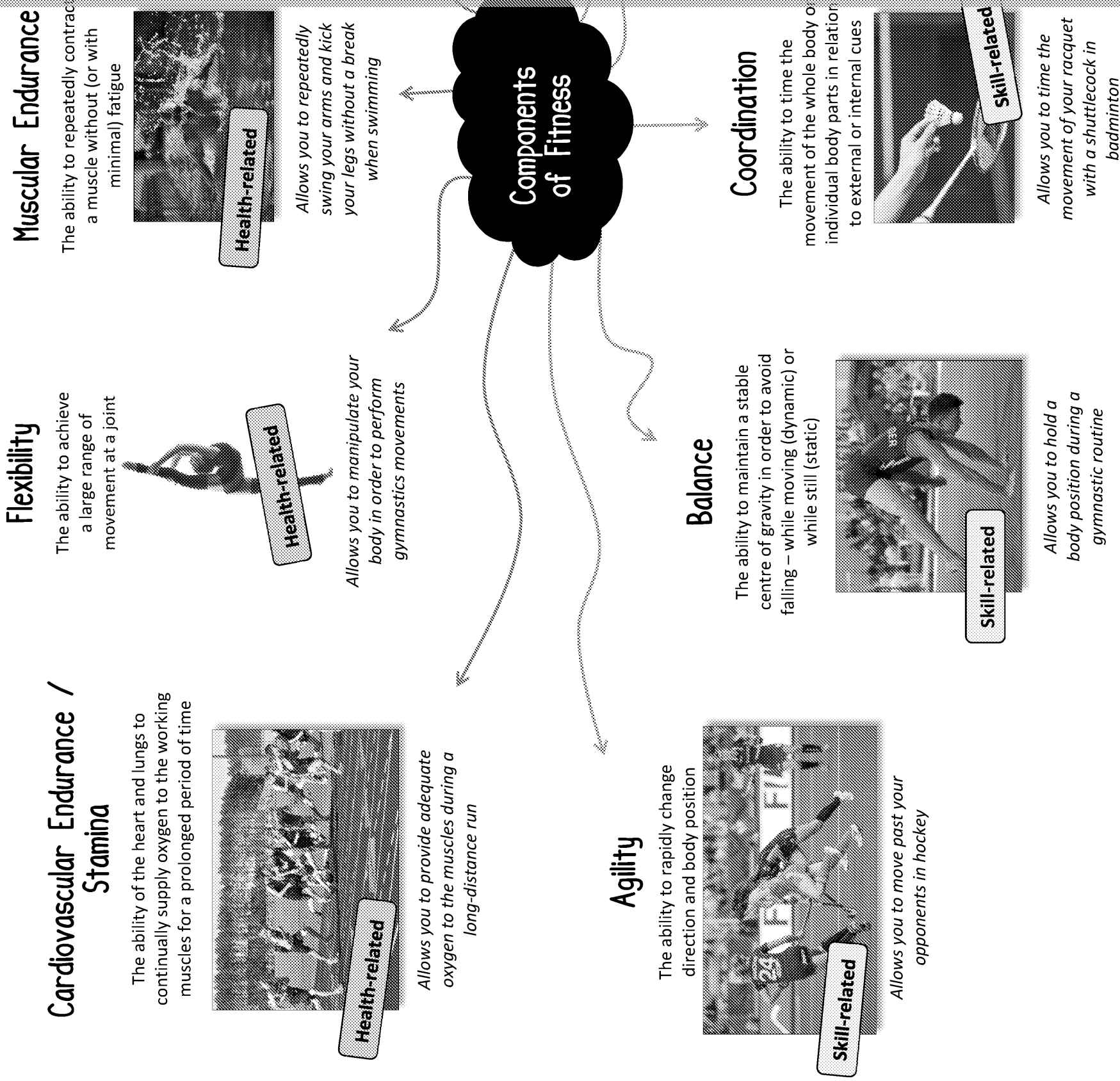
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Components of Fitness

The different components of health and fitness that can be improved through training are outlined below. Different sports require different components of fitness. Components can be classed as health-related or skill-related.



Fitness Testing

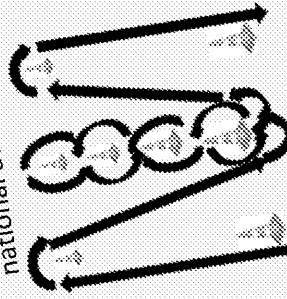
There is a range of different fitness tests which can be used to evaluate the different components of fitness. These are outlined below and the advantages and limitations of fitness testing are provided to the side.

Reasons For Fitness Testing

- ❖ Can determine someone's potential suitability to different sports and activities
- ❖ You are able to identify any progress, e.g. improvements in speed
- ❖ Goals can be based on the outcomes of tests to provide motivation
- ❖ Comparisons can be made between athletes
- ❖ It can help inform the design of training programmes, i.e. train the components of fitness which are important for this sport but which they scored poorly in
- ❖ You are able to identify the strengths and weaknesses of an athlete/programme

Agility → Illinois Agility Test

A multidirectional course which must be completed in the quickest time possible. The participant's time is compared to the national average.



(Static) Balance → Stork Stand Test

Requires the participant to stand on the ball of one foot for as long as possible. The time that they manage is compared to the national average.



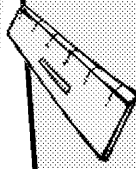
Power → Vertical Jump Test

Requires the participant to reach as high as they can on a wall and then perform a standing vertical jump. The distance (cm) between their jump height and standing reach is measured and compared to the national average.



Reaction Time → Ruler Drop Test

Requires a tester to place a ruler between the fingers of the participant. The ruler is then dropped and the participant should grab the ruler as quickly as possible by closing their fingers. The distance (cm) the ruler travels is compared to the national average.



Flexibility → Sit-and-reach Test

Requires the participant to sit with their legs outstretched against a box and attempt to reach as far forward as possible. The distance (cm) onto the box that they reach is compared to the national average.



Speed → 30 m Sprint Test

Requires participant to run 30 metres in the shortest possible time. Usually an average of three attempts is taken.

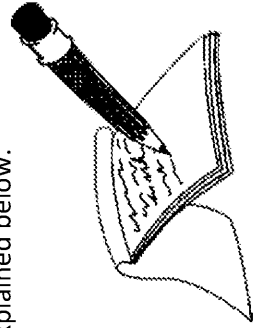
Coordination → Anderson Wall Toss Coordination Test

The participant must throw a ball against a wall and catch it in their opposite hand as many times as possible in 30 seconds. The number of completed catches is compared to the national average.



Fitness Data Collection

There are two types of data that can be collected from fitness testing: 'quantitative' and 'qualitative' data, explained below.



- ❖ Quantitative data is a measurement that involves numerical data
- ❖ Qualitative data is a measurement that involves observational data

Due to the nature of the two types of data, quantitative data can be compared to national averages while qualitative data cannot.

Qualitative data can be collected by an athlete making notes about how tired they feel during training sessions and competitions.

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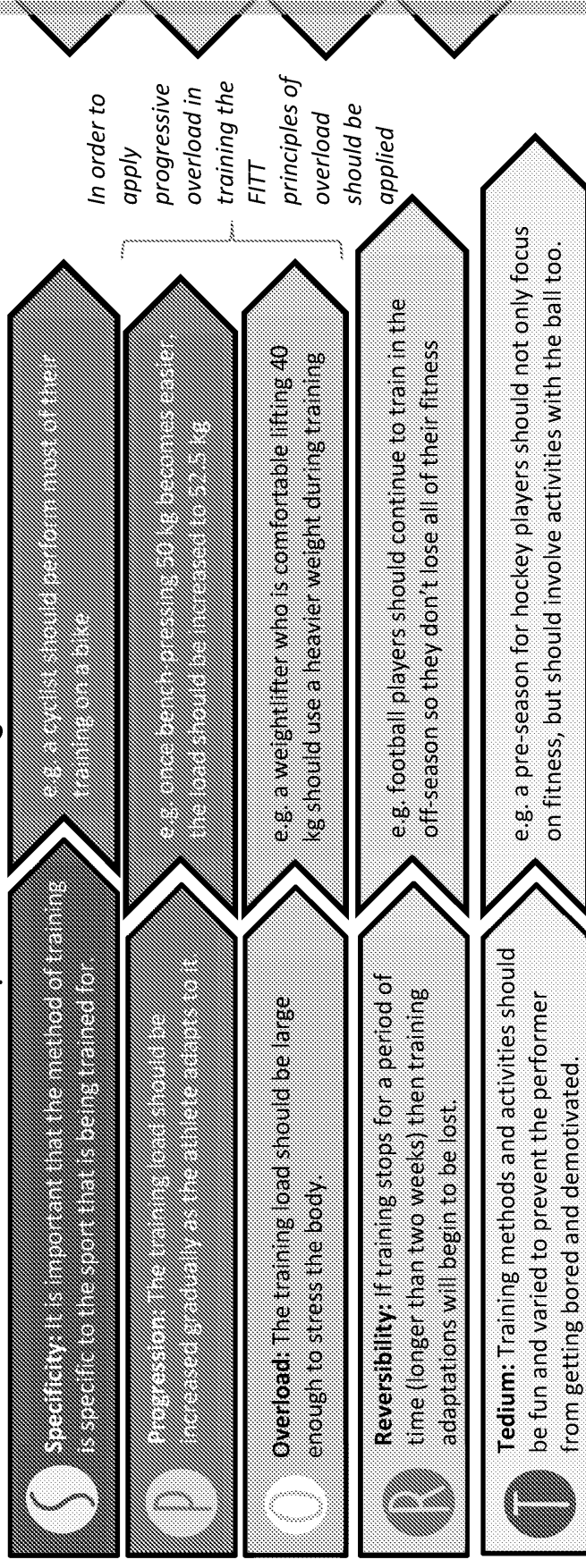
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Principles of Training and their Application

There are two key principles which should be applied when creating and delivering any training program

Principles of training: SPORT



The method of training that is performed by athletes depends on the sport for which they are training. The

Continuous Training	Fartlek Training	High-intensity Interval Training	Circuit Training	What?
What? Physical activity which involves prolonged periods of aerobic exercise, such as running, cycling, swimming or rowing	What? Activities such as running or cycling on different terrains, at different speeds and/or with different periods of work and recovery	What? Intermittent periods of high-intensity exercise with periods of recovery or low-intensity exercise that can be manipulated	What? A number of activities at stations designed to improve different components of fitness, with short periods of rest between each	What? Involves muscle weights
Advantages - Requires little equipment - Easy to perform - Requires little assistance	Advantages - Can be made appropriate for different sports - Can prevent boredom due to changing terrain	Advantages - Can be performed with little equipment - Not time-consuming	Advantages - It can be made appropriate for all sports - Can work on all components of fitness	Advantages - Easy - Requires
Disadvantages - Can become boring - Takes up a lot of time - Doesn't improve anaerobic performance	Disadvantages - Can become boring - Hard to track progress - Easy to not put effort it	Disadvantages - Not appropriate for all participants - Can become boring - Requires high levels of motivation	Disadvantages - Requires a lot of equipment and space - Takes time to set up	Disadvantages - Requires - Requires avoid
Useful for Endurance performers, e.g. marathon runners and cyclists	Useful for Intermittent sports, e.g. football, or multi-terrain sports, e.g. cycling	Useful for Appropriate for those who work anaerobically, e.g. 400 m sprinters	Useful for All athletes due to the manipulation of stations	Useful for Strength weightlifting
Considerations Important to monitor heart rate to stay in the aerobic zone (60–80% HR max). Comfortable footwear should be worn to prevent blisters.	Considerations RPE (Borg's 6–20 scale) can be used to monitor intensity. It is important to check equipment beforehand, such as the tyre pressure of a bike.	Considerations Rest periods should be long enough to allow for removal of waste products (e.g. lactate) and to reduce the risk of overexertion.	Considerations Manipulating work and rest periods to target different components. Equipment checks and inductions should be performed for safety.	Considerations One-rep calculate Spotters should be

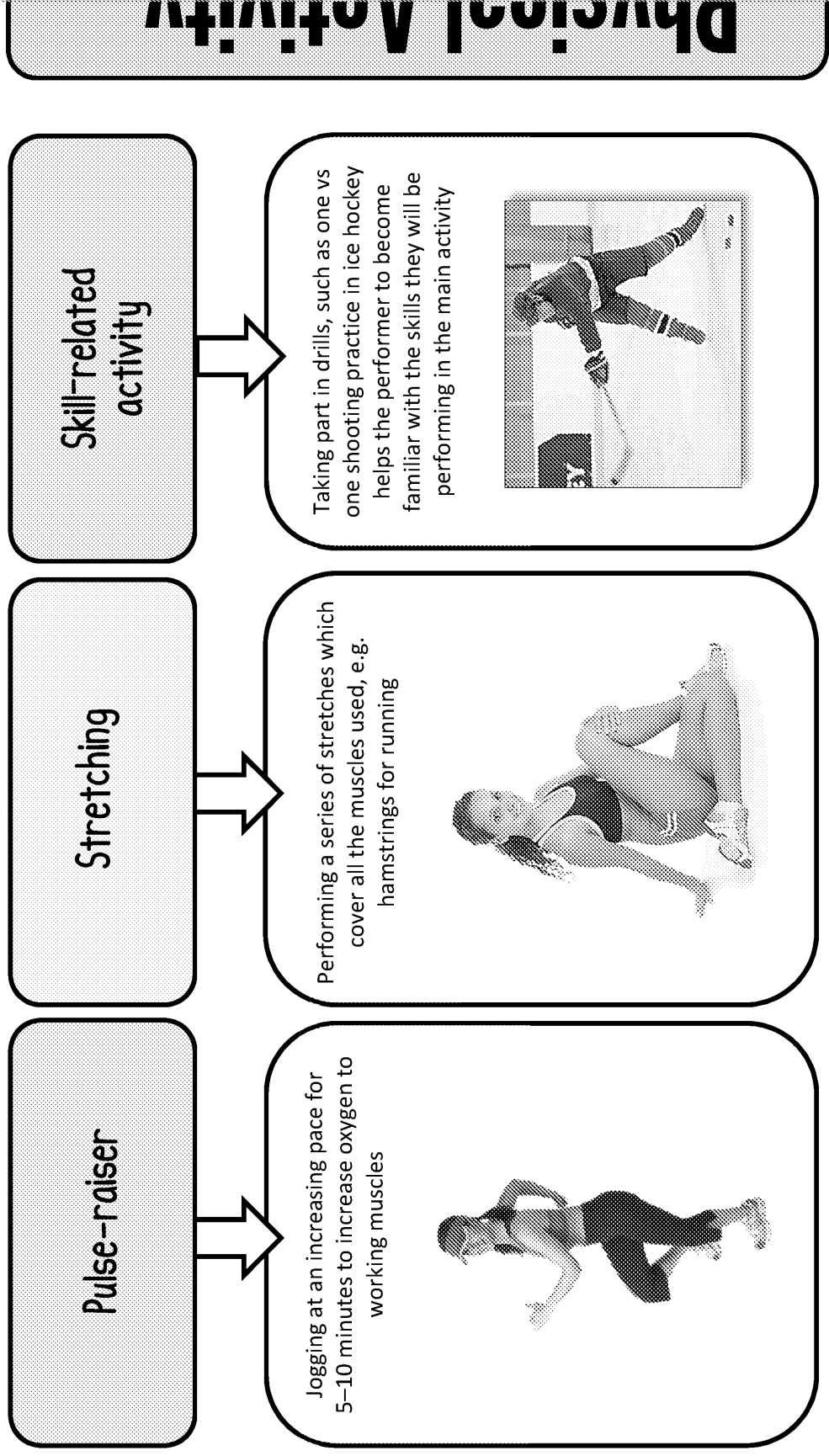
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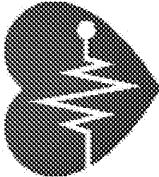


Warm-up and Cool-down

Warm-up phases

It is important that a warm-up is performed prior to exercise in order to prepare the body for physical activity. A warm-up is designed to reduce the risk of injury and improve performance. The three main phases of a warm-up, examples of each component, and the benefits of warming up are outlined below:





Reasons for Warming Up

Physiological reasons

- ✦ To increase body temperature
- ✦ To increase the range of movement that can be achieved at a joint (flexibility)
- ✦ To provide an opportunity for the athlete to work towards full-intensity exercise
- ✦ To reduce the chance of the athlete becoming injured during competition
- ✦ To increase the amount of oxygen delivered to the active muscles

Psychological reasons

- ✦ To provide an opportunity for the athlete to mentally prepare themselves for competition
- ✦ To practise skills which are required during competition, so that the athlete can gain confidence with them
- ✦ To become familiar with skills and reduce anxiety
- ✦ To calm the performer down and control arousal levels
- ✦ To provide an opportunity for the athlete to focus themselves and concentrate on the activity ahead



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Skill

Skills are learned actions which allow you to complete an activity in a successful manner

VS

Ability

Ability is the innate traits which provide the potential for someone learning a skill.

Skill Acq

Skills Co

Sport skills have many characteristics and these can change comes up against. This makes it challenging to categorise s

Factors affecting variation in skill level

There are many reasons for the different levels of skill between performers in sport. These include:

- ✓ **Age and maturity** – Throughout our childhood, we develop motor patterns that help with the performance of skills.
- ✓ **Environment** – Being in the right environment and having the necessary support will help accelerate the learning of skills.
- ✓ **Arousal conditions** – Optimum arousal needed for optimum skill development varies with skills, e.g. low optimum arousal for fine skills and high optimum arousal for gross skills.
- ✓ **Anxiety** – Apprehension towards performing a skill will prevent the performer from practising and thus developing.
- ✓ **Facilities** – The facilities and resources available to the performer will determine the level of support for developing the skill.
- ✓ **Teaching and coaching** – Greater access to teaching and coaching from an expert will increase the rate at which skills are acquired.
- ✓ **Motivation** – The greater motivation a performer has, the more chance they will stick to learning of a skill. Performers will mostly rely on extrinsic motivation in their earlier years, but intrinsic motivation will lead to more sustained improvements in skill development.
- ✓ **Culture** – There may be barriers to participation in certain types of sports in some cultures. Therefore, it might affect their ability to develop skill in those types of sport.

Basic Skills

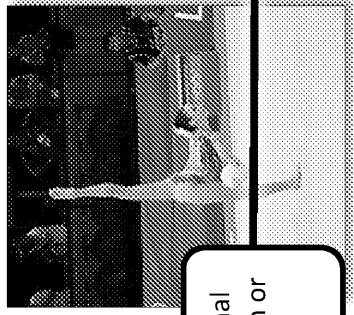
- ✳ Simple to perform
- ✳ Require little concentration
- ✳ Simple movements



Running athlete performing basic pattern

Closed Skills

Not affected by external stimuli, e.g. opposition or environmental factors



Fine Skills

- ✳ Require precision
- ✳ Small body movements



Serve Tennis movement precise gross with

Characteristics

Movements will often meet the f

Consistent

The skill can be performed again and again with the same level of success, e.g. a football player who manages to score from a lot of free kicks.

Accurate

The techniques involved in the skill are performed with precision, e.g. a gymnast performing the vault who manages to fully complete each phase to achieve a close-to-perfect score.

Coordinated

Different parts of the body work effectively together to perform the movement, e.g. jumping and moving the hands at the same time to catch a cricket ball

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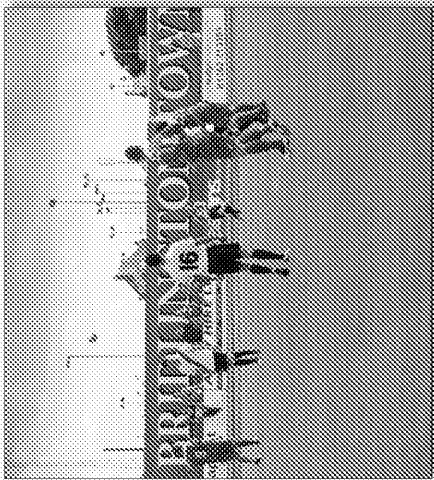


Input

- 1 Performers receive information from their senses (the display).
- 2 The information is processed by the performer.
- 3 The performer will use selective attention, which involves focusing on a specific stimulus and ignoring irrelevant information.

Basic information processing of a footballer receiving and playing a pass:

The footballer will receive information from his senses about the position of himself, the opponent and the ball. He will selectively ignore the fans shouting from the sidelines.



- Information
- Display (sensory input)
- Selective attention

The **single-channel** model of decision-making can only process one stimulus at a time. Any additional stimuli will result in a processing error.

The **short-term** memory stores information received from the senses. The **long-term** memory stores appropriate information from previous experiences.

Feedback is constantly used to reinforce the long-term memory.

- Intrinsic (self)
- Extrinsic (others)

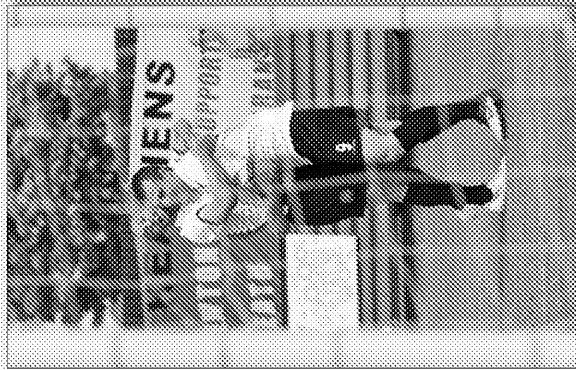
Simple Process

Information processing is the way in which athletes interpret and respond to information from their environment.

Feedback

- 1 Feedback is received in two ways:
 - **Internal** — how the movement felt
 - **External** — from other sources, such as teammates or your coaches
- 2 Positive feedback reinforces actions
- 3 Negative feedback helps identify areas for improvement

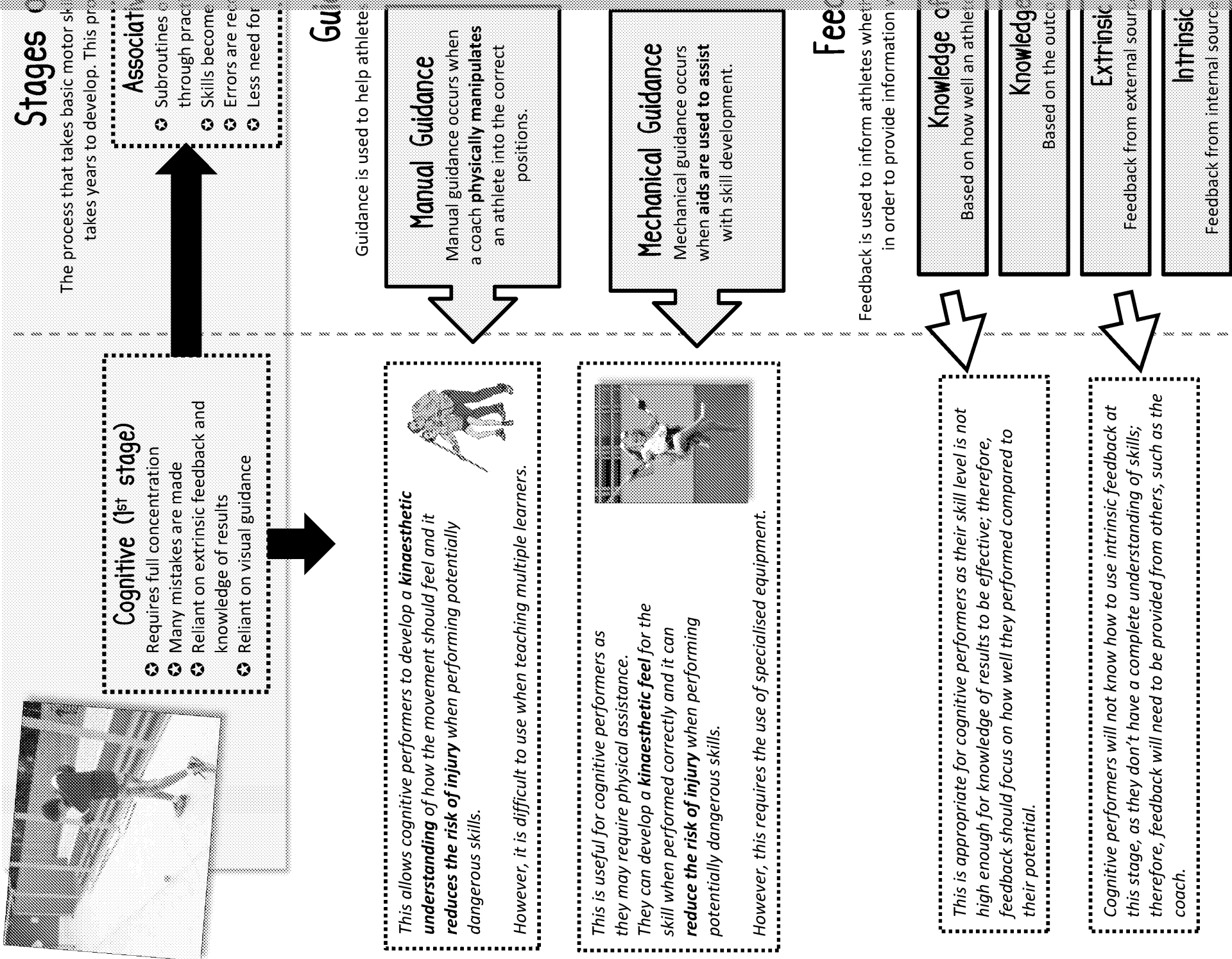
The response to the output was a goal being scored. This helps reinforce the actions of the lofted pass and motivates the performer to reuse this skill when he next receives similar input from his senses. He will know how the skill will feel when performed correctly.



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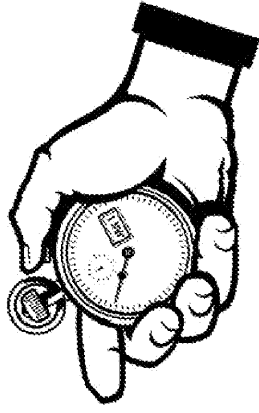
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SMARTER Principles

When setting goals for yourself or for an athlete/team, it

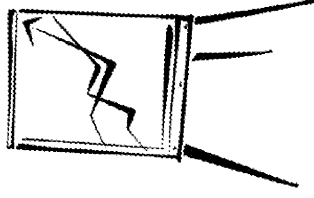
Specific



Goals should be focused on improving things which are needed in the sport being trained for, as this will ensure that it leads to improved performance.

e.g. reducing the time taken to cover the last 200 m of an 800 m race by two seconds

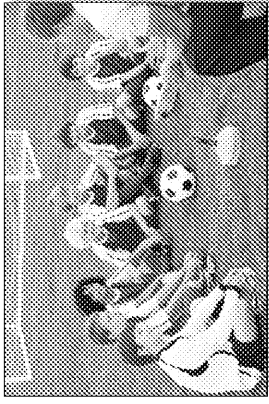
Measurable



You should be able to determine how well you have performed (e.g. with a score) as this allows you to see if your goal has been met.

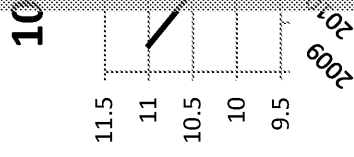
e.g. improving your 10 k time as you can measure the time it takes to complete 10 k

Achievable



It should be within the performer's potential to reach their goal, as this will ensure that they are motivated.

e.g. when setting goals, they should all be different based on the individuals' skills



The relevant circumstances they are

i.e. ensuring the ability to achieve goal based

The Use of Goal Setting

There are a number of benefits to using effective goal setting.

- ❖ Increase motivation of performers
- ❖ Improve skills and optimise performance
- ❖ Increase exercise adherence
- ❖ Increase perseverance following setbacks
- ❖ Improve effort levels

Goals can also be used as a means to **control anxiety**.

This is because they provide reassurance that a training programme is working or that the performer is achieving success in sport.

Anxiety is covered
on page **19**

Setting and Reviewing

In order to ensure that goals are effective they should be taken into account

- ❖ Goals should be regularly reviewed
- ❖ It provides an opportunity to check progress
- ❖ If a goal has been met, a new goal should be set which is more challenging
- ❖ If an athlete is unable to meet a goal, it is important to review the goal
- ❖ When a goal is not met, it is important to inform the athlete of the reasons why the athlete was unable to meet it in order to inform future training

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Zig Zag
Education

Motivation and

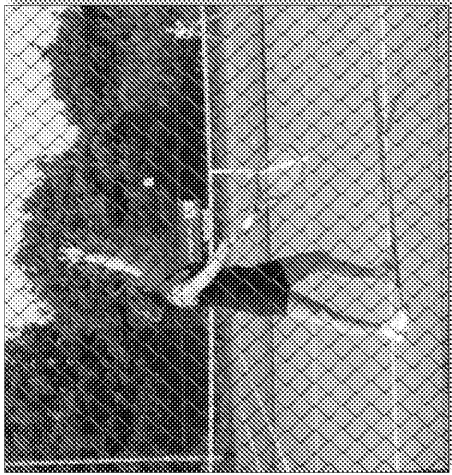
Personality Types

Personality theorists have said that an individual’s personality can help dictate what sports they are likely to be into. The table below shows the differences between the two personality types: **introvert** and **extrovert**.

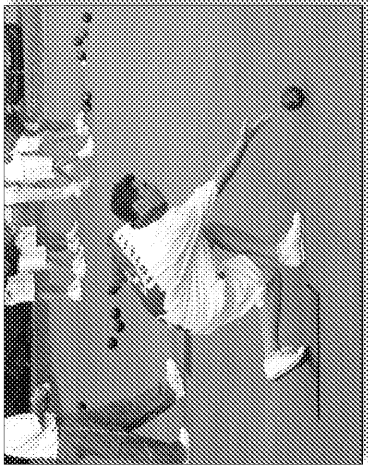
Personality type	Introvert	Extrovert
Characteristics	❖ They can be shy ❖ They tend to be thoughtful ❖ They like situations where they are on their own ❖ They have good concentration levels	❖ They like to have a lot of social interaction ❖ They don't like being alone and can easily become bored when they are
Sporting Preference	❖ Sports which require low levels of arousal ❖ Sports which involve fine skills ❖ Sports which are less fast-paced and require high levels of concentration	❖ Sports which involve gross skills ❖ Fast-paced games ❖ Sports which require low levels of concentration



Snooker is suited to **introverts** as it is low arousal.



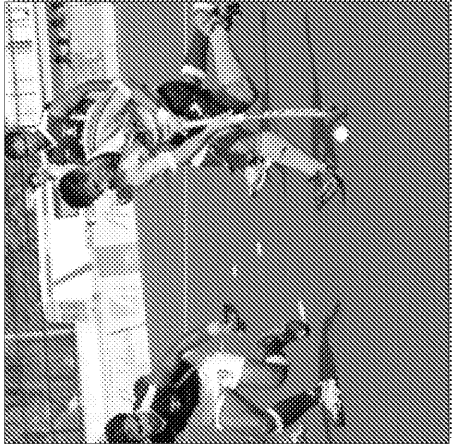
Tennis is suited to **introverts** as it is an individual sport.



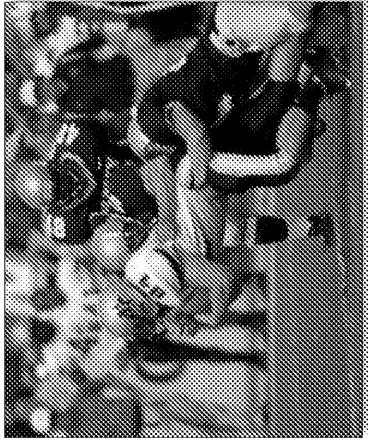
Bowls is suited to **introverts** as it is low arousal.



Rugby is suited to **extroverts** as high arousal



Hockey is suited to **extroverts** involves working in teams



American Football is suited to **extroverts** as high arousal

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Arousal, Anxiety

Arousal

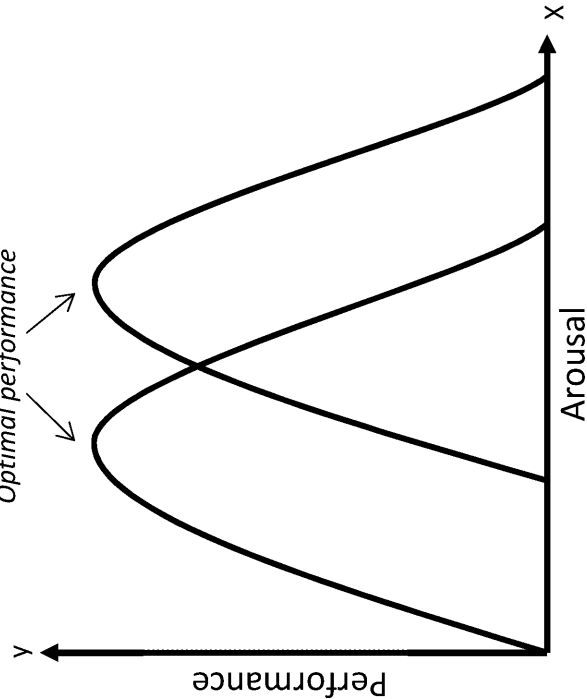
Arousal refers to an athlete's state of physical and psychological readiness for performance.

The effect of arousal on performance is determined by the level of arousal and the sport/skill that is being performed. This relationship is outlined below by the inverted-U graph (Yerkes–Dodson law):

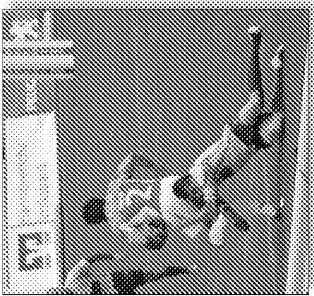
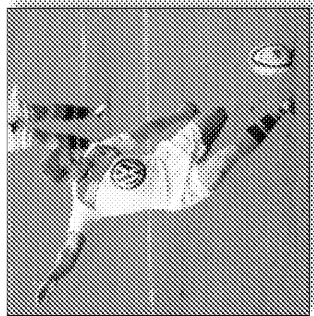
Inverted-U Theory of Arousal

The inverted-U theory states that **as arousal increases, there is an increase in performance up to a certain point and then the performer becomes over-aroused and performance levels fall.**

Different skills demand different levels of arousal in order to be performed at an optimal level.



Low Optimal Arousal	High Optimal Arousal
Fine skills, e.g:	Gross skills, e.g:
★ Rugby penalty kick	★ Rugby tackle
★ Snooker shot	★ Triple jump run-up
★ Putting in golf	★ Boxing uppercut
★ Archery shot	★ 100 m sprint
★ Shot in curling	★ Hockey dribble
★ Basketball free throw	★ Swimming strokes



A performer who is **under-aroused** may show signs of disinterest and tend to limit their involvement.

A performer who is **over-aroused** may make rash decisions from not thinking straight, or could act aggressively and without control.

Anxiety

A feeling of apprehension when faced with a stimulus that is perceived as threatening.

There are two main types of anxiety:

Somatic anxiety:
Physiological responses to anxiety

↑

e.g. increased heart rate,
butterflies in the stomach,
increased sweat response

Cognitive anxiety:
Mental responses to anxiety

↑

e.g. overthinking situations,
lack of a clear thought process,
negative feelings

Causes of anxiety

→

Presence of a crowd and perceived pressure

→

Important situations, such as a final

→

Fear of failure and letting others down

→

Lack of preparation for an event

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Leisure, Recreation

Key terms relating to leisure and recreation:

Sport – any activity that requires **physical exertion** and applies **skills** to compete in line with a set of **rules and regulations**

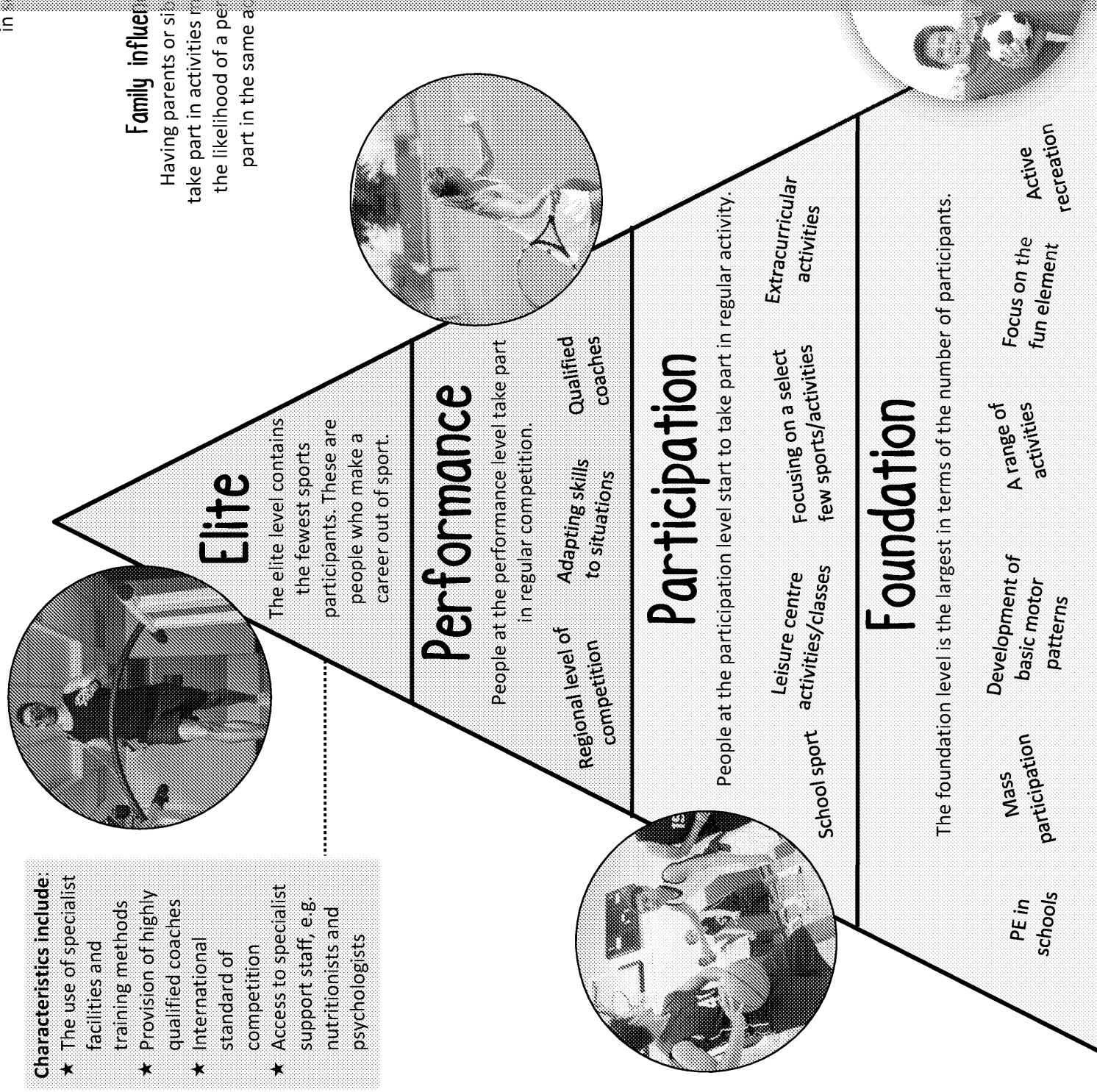
Play – participation in an activity simply for **fun** and requiring the use of imagination and spontaneity

Leisure time – the **free time** at our disposal to do with what we wish

Physical recreation – activities that are performed in our leisure time for **enjoyment** and have **rewarding values**

Characteristics include:

- ★ The use of specialist facilities and training methods
- ★ Provision of highly qualified coaches
- ★ International standard of competition
- ★ Access to specialist support staff, e.g. nutritionists and psychologists



Sports development pyramid

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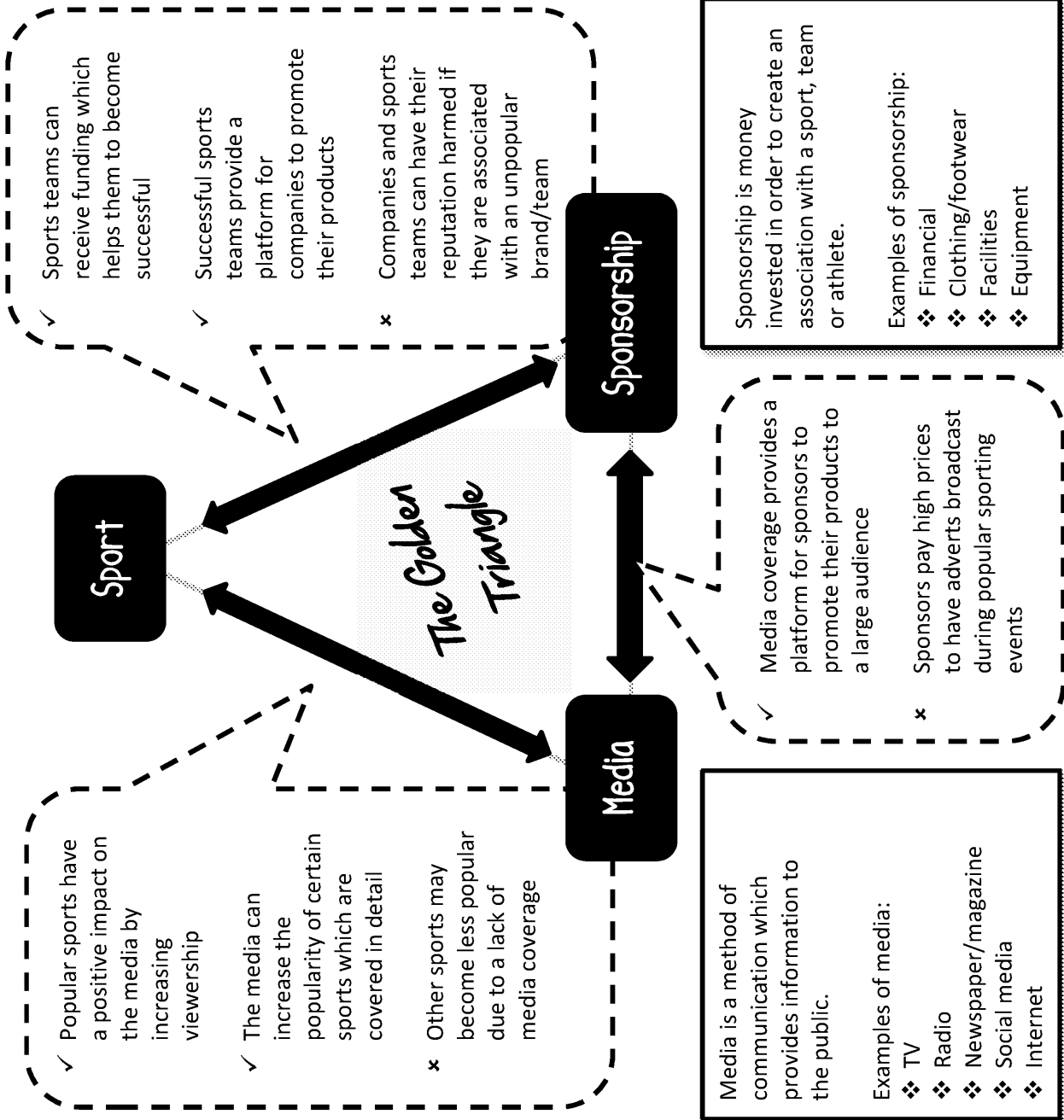


Sponsorship

Commercialisation

Commercialisation is the process by which a product is promoted to an audience. In sport, this occurs when companies form relationships with sports teams / athletes and use the media to promote something.

The golden triangle below shows the relationship between the three components (sport, sponsorship and media) of commercialisation.



Sponsorship

Popular sports teams / athletes and use the media to promote something.

Sports teams can receive funding which helps them to become successful	Successful sports teams provide a platform for companies to promote their products	Companies and sports teams can have their reputation harmed if they are associated with an unpopular brand/team	Money for facilities e.g. the Emirates Arena	Companies invest in their associated sports e.g. McDonald's with
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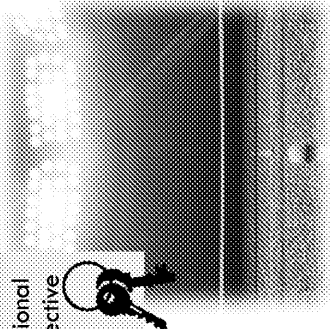
Global E

(& amateur and profe

Sporting infrastructure

Major sporting events require specialised sports facilities such as stadia and training facilities in preparation for the event. These can be used by participants at all levels of the sporting pyramid once the event has finished.

Infrastructure – organisational systems that assist the effective functioning of a facility or community



Home advantage

Nations that host major sporting events have an advantage over other nations due to the influence of the home crowd. This can increase the likelihood of sporting success and help increase national pride.



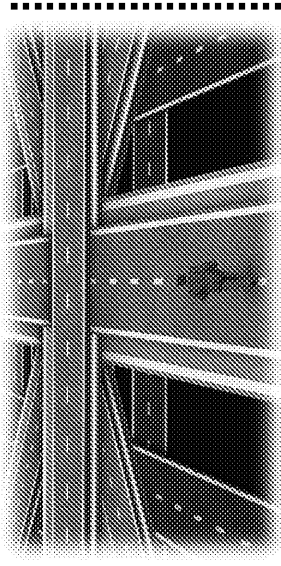
Increase in national pride

Success of the home nation can boost a country's morale and encourage social cohesion. It can make people proud of their nation and content at belonging to that nationality.

Success could also boost the profile of certain sports as well as the international profile of the country.

Transport infrastructure

Transport would need to be developed pre-event to cater for the influx of tourists from abroad and from other areas of the country. Intercity transport would also need to be developed in the city hosting the event. A better developed transport system will facilitate movement to and between sporting venues.



Transport systems could even be maintained after the event if they are successful, and also cater for indirect tourism.

Increased employment

Hosting a major sporting event presents the opportunity to create thousands of jobs, which could increase employment rates prior to the event, such as event management to help set up the event, and short-term employment during the event in roles such as security and customer service.

Media coverage of events for spectators around the world helps to drive tourism.

A successfully hosted event could lead to future financial investment in sports infrastructure.

Legacy implications

- ★ **Increased sports participation** - Many models feature in major sporting events inspire sports participation, improving performance of the host nation.
- ★ **Continued use of facilities** - long-term facilities are going to be used after the event create social legacy, e.g. use as accommodation, sporting legacy, e.g. use for participation
- ★ The **tourism** that a major sporting event creates can create an economic legacy for the host nation.

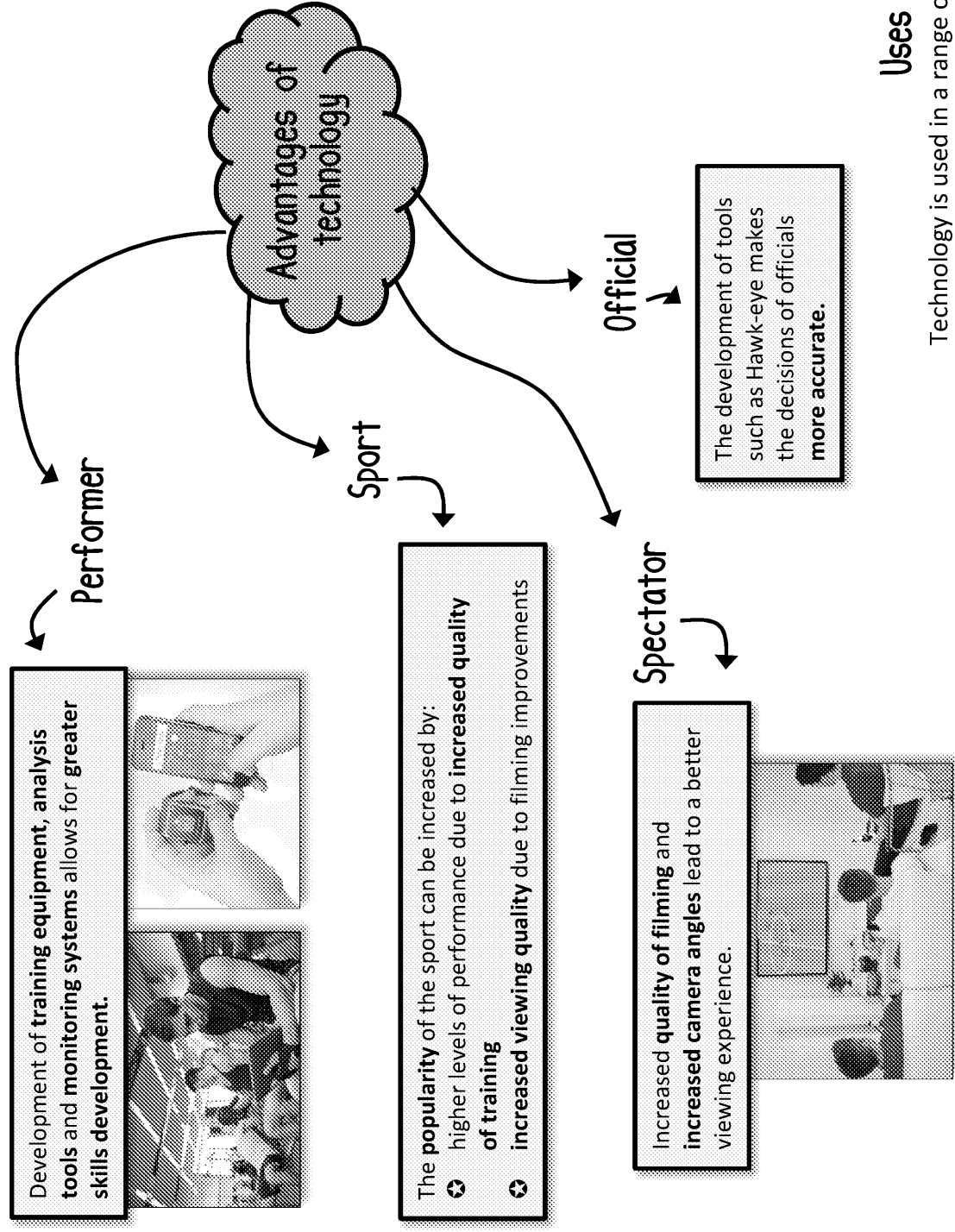
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Technology

The technology used in sport is always evolving in an attempt to improve the quality of the sport.

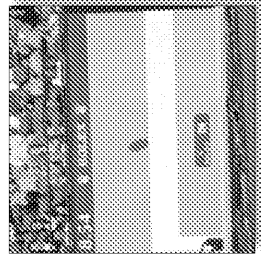


Uses of technology

Technology is used in a range of ways to enhance the quality of the sport. Three of the most common uses are:

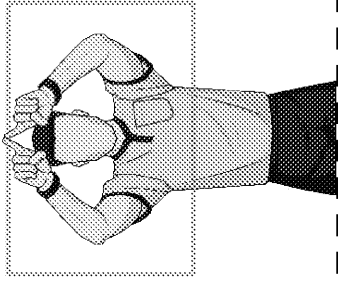
Decision-making by officials

The **video assistant referee (VAR)** is used in football and **television match officials (TMOs)** are used in rugby to support officials by reviewing key decisions.



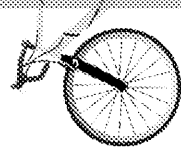
Hawk-Eye is a multi-camera system that tracks the movement of a ball. It is used in tennis to allow players to challenge umpires' decisions if they think they have made an incorrect call.

VIDEO ASSISTANT REFEREES

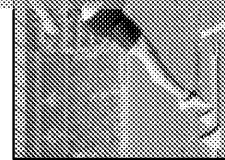


Enhancement

Use of composite materials such as **carbon fibre** in road bikes offers **greater return** from each push of the pedal. Being **lightweight** carbon fibre also allows bikes to gain **speed**.



Prosthetics such as the running blade, which uses stiff composite materials such as carbon fibre to generate a **rebound** effect.



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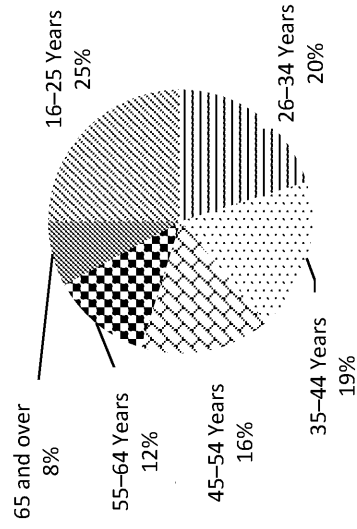
Age

- Most **role models** are **young**, which can have a negative impact on elderly participation.
- It can be harder for elderly people to **access facilities** if they are unable to walk / take public transport.
- Most **media coverage** focuses on young professional athletes which may discourage older individuals from participating.
- **Discrimination** against older adults, e.g. a lack of appropriate activity provision to account for lower fitness levels.
- Older individuals may have more **commitments**, such as looking after children, which restrict participation. The young and old are likely to have more free time than middle-aged working adults.
- **School sport** is well funded which can lead to high participation rates among younger people. However, people tend to drop out of sports once they leave school.
- Young people may not have enough **money** to pay membership fees for gyms or registration fees for teams.
- Young people can be influenced by their **parents' attitudes** towards sport and parents are often role models and can influence a family culture that either involves sport or not.
- Young people rely on parents' transport to get them to training etc.
- There may be a lack of **education** on the health benefits of physical activity for older adults.

Gender

- The activities that men and women take part in can be affected by how they view those activities, e.g. women might be less likely to take part in rugby if they view it as masculine.
- The **lack of female role models** has a negative impact on participation.
- There may be a **lack of opportunity** for some females to **access** certain sports, such as female rugby teams.
- Female sport receives **less media coverage**, which negatively impacts on participation.
- **Gender stereotyping** still exists within some sports, such as boxing, considered masculine. However, with an increase in female role models and media coverage in these sports, this is continuing to improve.
- In modern times, the **family dynamic** has changed and as a result women have more opportunities to be physically active, beyond their role as mothers.
- In the past, women generally had **less free time** due to family commitments, but this has now changed and women are able to participate as much as men.
- The compulsory inclusion of **Physical Education** in the National Curriculum in schools means both genders are exposed to physical activity; however, sports played depend on schools'/teachers' choice.
- The **wage gap** between men and women is no longer as prominent, providing women with greater opportunities to take part in physical activity.

Percentage of people participating in sport at least once a week in 2015/2016



Other

The **climate/environment** can affect participation. If the climate is extremely cold, hot or rainy, people may not take part in regular physical activity outdoors. This can be overcome by using indoor facilities.

Factors affecting access and participation in physical activity

The social groups to which an individual belongs can affect their level of engagement in sport and physical activity in their leisure time.

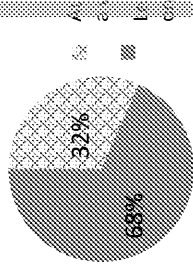
Strategies to improve participation

- Promotion:** Advertising the opportunities available, trials/discounts
- Provision:** Funding a range of facilities and locations
- Access:** Ensuring that everyone has access to facilities by improving transport links

Percentage of males participating in sport once a week in 2016



Percentage of females participating in sport once a week in 2016



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Performance

There is a vast list of performance-enhancing Common PEDs that athletes use a

Stimulants

Effects

- + Provide energy
- + Delay fatigue
- + Increase alertness

Example of use

To increase alertness in football in order to respond quicker



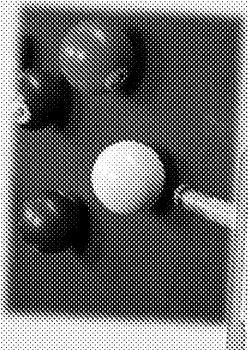
Beta blockers

Effects

- + Reduce anxiety
- + Lower heart rate
- + Reduce muscle tension
- + Reduce blood pressure
- + Improve fine motor control

Example of use

To improve fine control when playing snooker



Anabolic

Effects

- + Build
- + Increase
- + Allow

Example of use

To maximise the strength gain made a weight lift

Diuretics

Effects

- + Increase urine
- + Increase weight
- + Can help mass

Example of use

To make weight for competitions, such as boxing weight divisions

Blood Doping

Blood is removed from the athlete in the weeks leading up to competition and is frozen, before being re-injected prior to competition.

Blood doping is beneficial for any athlete who works aerobically and requires good cardiovascular endurance, e.g. long-distance runners and cyclists.

Positives:

- ↑ Red blood cells
- ↑ Oxygen-carrying capacity
- ↑ Cardiovascular endurance

Negatives:

- ↑ Blood viscosity (thickening)
- ↑ Infection risk
- ↑ Heart attack risk
- ↑ Embolism risk (blood vessel blockage)

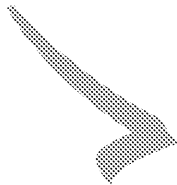
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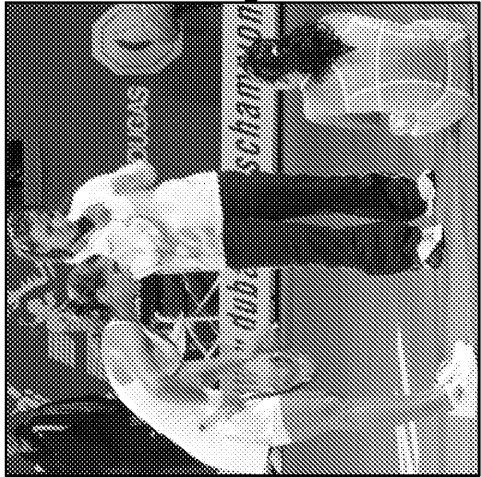
Sportsmanship

There are two key terms which can be used to describe how they should act when competing



Sportsmanship

Playing in a fair manner and within the rules of a sport with etiquette and treating your opponents with respect



Stopping play if an opponent is injured to make sure they are ok

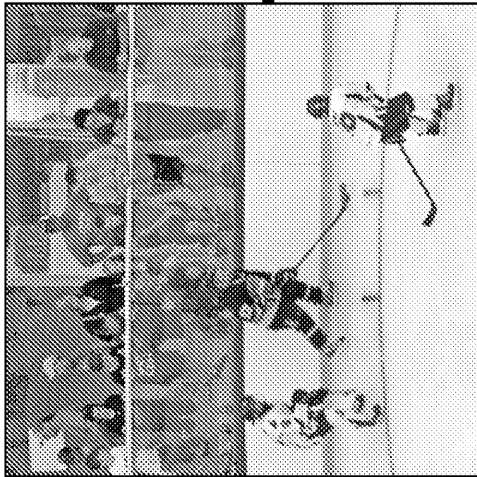
Helping an opponent who is injured

- Other examples of sportsmanship:
- ✓ Refraining from unsportsmanlike conduct towards opponents (e.g. taunting)
 - ✓ Helping an opponent improve their skills by offering advice
 - ✓ Apologising to an opponent if you caused them an injury, offering extra time
 - ✓ Accepting defeat with grace
 - ✓ Giving credit to opponents' success, as opposed to blaming them for failure



Gamesmanship

Pushing the code of conduct to its limits by bending the rules in order to gain an advantage



Wasting time when you are winning in order to deny the opposition a chance to win

Pulling an opponent's jersey to prevent them scoring / obstructing a contest

- Other examples of Gamesmanship:
- ✓ Encouraging officials to make calls in your favour through persuasion
 - ✓ Distracting opponents to put them off their performance
 - ✓ Intentionally fouling an opponent to disrupt their performance or cause an injury
 - ✓ Using unsportsmanlike behaviour to gain an advantage, e.g. trash talking

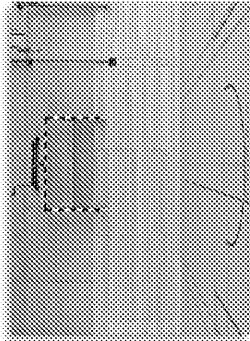
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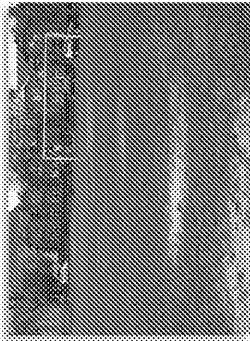


Risk Assessment

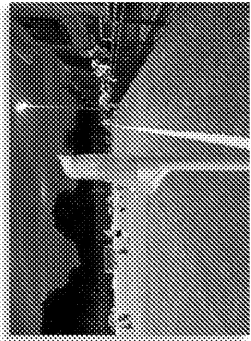
Risks in different environments:



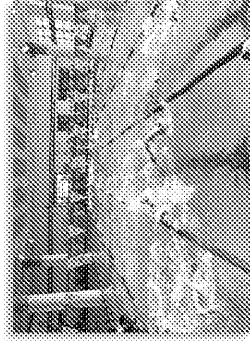
- Indoor sports halls**
- × Court lines close to walls
 - × Hard flooring
 - × Slippery surface from spillages
 - × Loose fixtures, e.g. lighting
 - × Collisions between participants



- Playing fields**
- × Debris on the pitch, e.g. glass
 - × Inappropriate footwear
 - × Slipping hazards, e.g. mud
 - × Equipment obstacles
 - × Collisions between participants

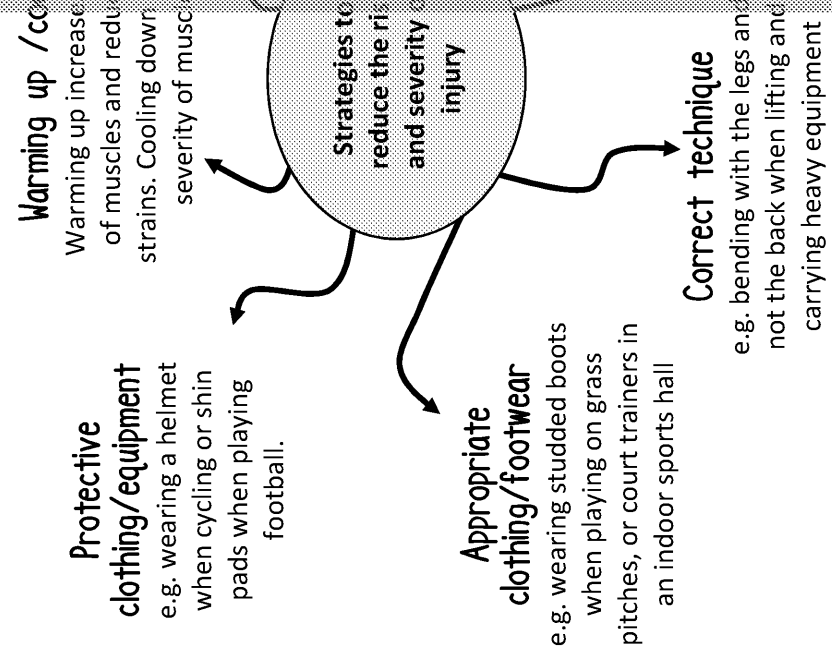


- Artificial surfaces**
- × Grazes from the surface
 - × Limited run-out space between pitch and barrier/cage
 - × Lack of experience, e.g. on an artificial ski slope



- Swimming pools**
- × Drowning in the deep end
 - × Shallow water for diving
 - × Collisions with participants
 - × High chlorine levels
 - × Slippery surfaces around pool

The risk of injury in sport is something that all participants are influenced by the environment and the measures taken to reduce it.

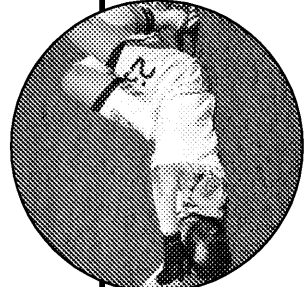


There are two perspectives on risk:

1. **Real risk** – the actual threat of injury as a result of the environment.
2. **Perceived risk** – the performer's belief that the risk is high.

For example, a real risk in swimming is drowning. This depends on a person's confidence with swimming, whereas a higher perceived risk, whereas confident performers may not perceive a high risk.

Causes of and simple treatments for minor injuries



Winding

A blow to the abdomen or chest which results in the spasm of the diaphragm muscle used in breathing.

Example cause: receiving a blow to the abdomen from a football that has been kicked by another player.

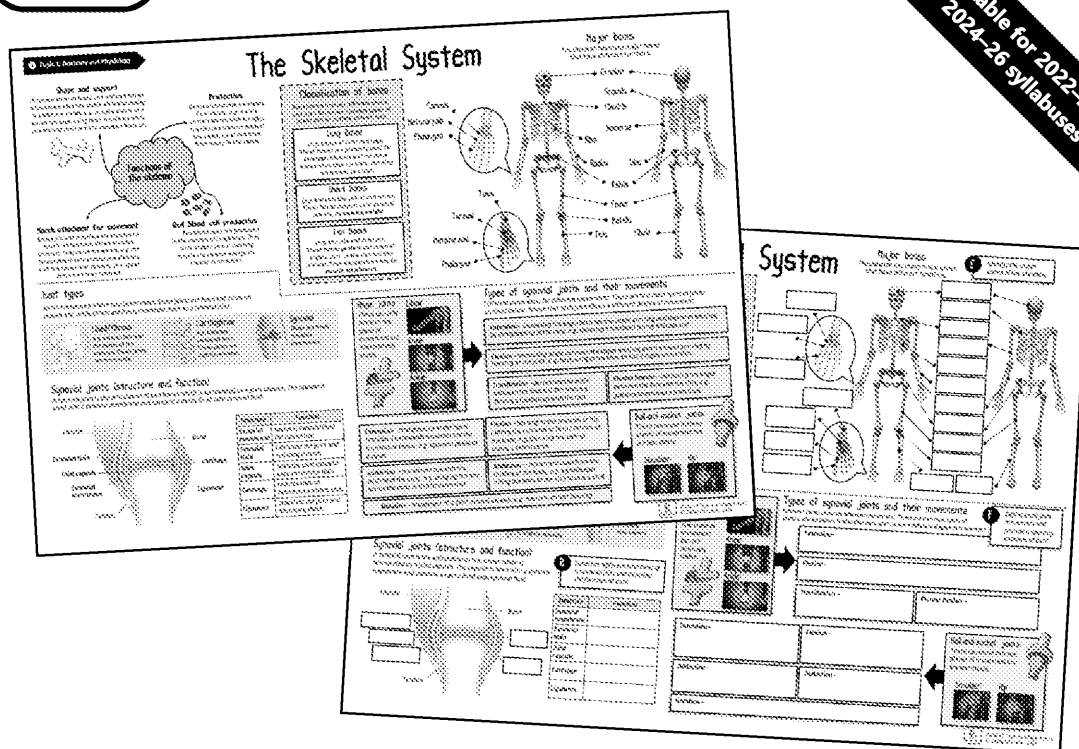
Treatment: Deep breaths

Cuts and grazes	Blister
A wound where the surface of the skin is scraped off or pierced, resulting in minor bleeding.	Fluid-filled sac under the skin, caused by friction, e.g. ill-fitting footwear. Typically blisters form to protect the damaged skin and help it heal.
Example cause: A cyclist who falls off their bike and grazes exposed legs or arms.	Example cause: A runner who wears a new pair of trainers for a long-distance run before breaking them in.



Treatment: Dressings/bandages

Treatment: Blister pads



Topic on a Page for Cambridge IGCSE (9–1) PE

Paper 1: Theory

D Embleton

Folder B: ActivityMind Maps

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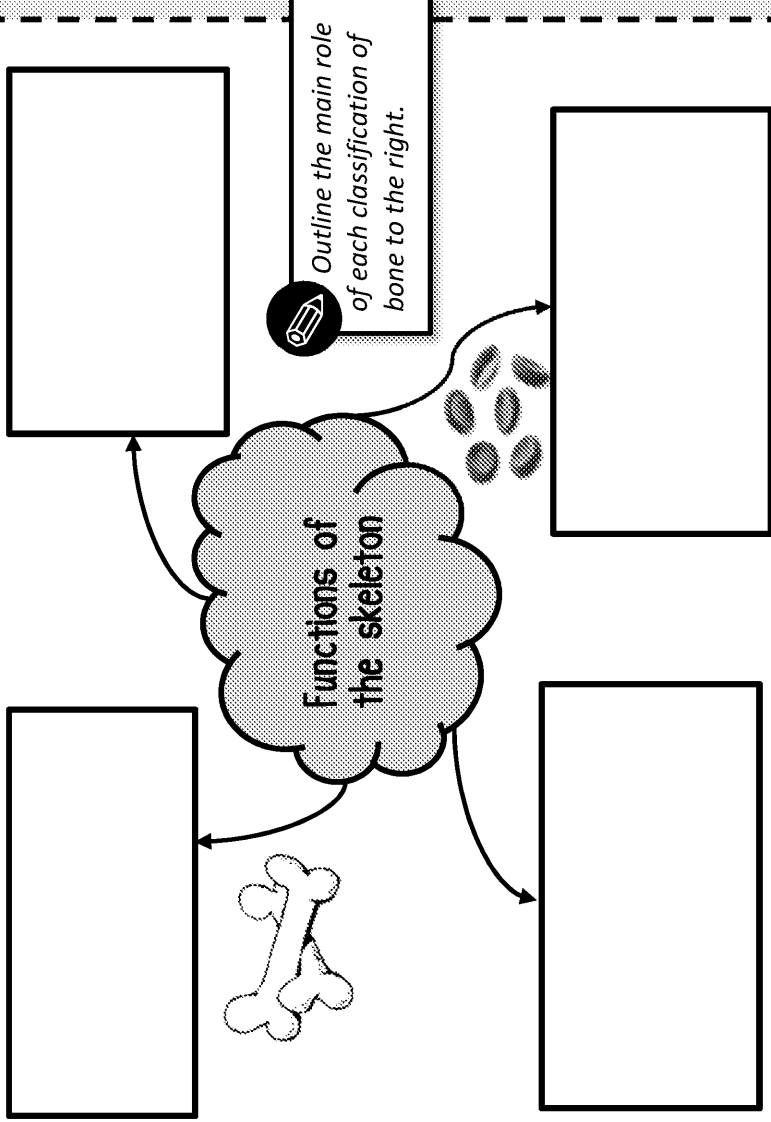
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The Skeleton

Using examples, describe the four functions of the skeletal system.



Outline the main role of each classification of bone to the right.

Classification of

Bones come in many different sizes. Below are common types.

Long Bones
(e.g. bones of arms and

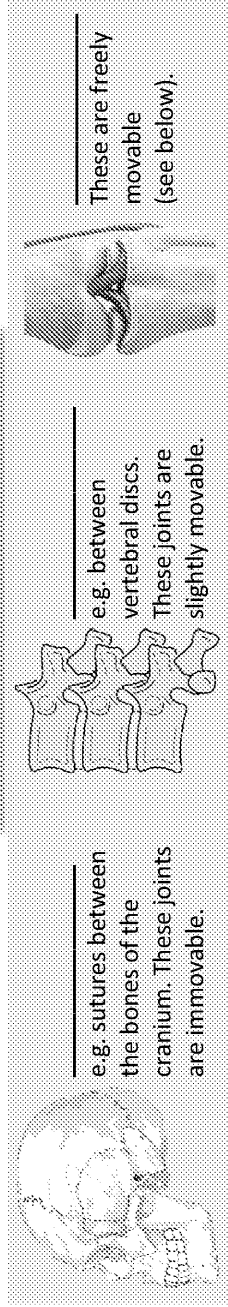
Short Bones
(e.g. bones of the ankles and

Flat Bones
(e.g. the ribs and cranial

Joint types

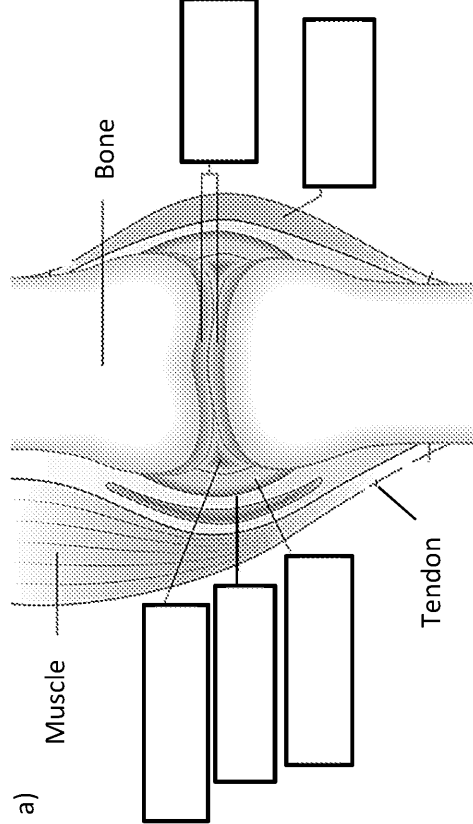
Joints are formed where two bones meet. Some joints are fixed and allow no movement, while others are freely moveable, such as a synovial joint.

Name the three joint types below.



Synovial joints (structure and function)

A synovial joint is the articulation of two bones which is surrounded by a joint capsule. The capsule is lined with a synovial membrane and contains a cavity filled with synovial fluid.



Structure	b) Function
Synovial membrane	
Synovial fluid	
Joint capsule	
Cartilage	
Ligament	

a) Label the different structures of a synovial joint and b) describe the function of each.

Hinge Joint
These can only move in one plane, but are relatively stable.



Extension

Adduction

Rotation

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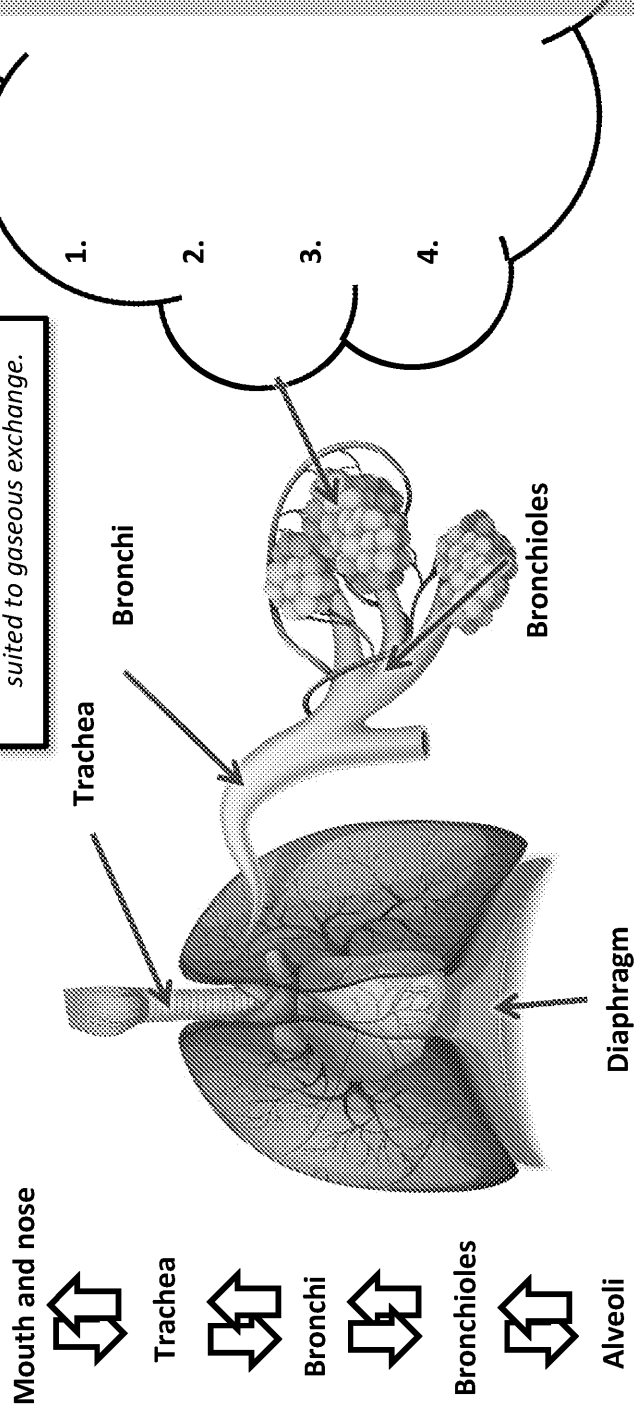
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The Respiratory System

Pathway of air

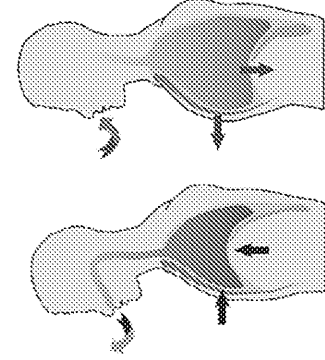
Explain four features of the alveoli that make them suited to gaseous exchange.



The Mechanics of Breathing

In order for us to get oxygen into our bodies, we have to breathe. Outlined below is the mechanics of how we breathe:

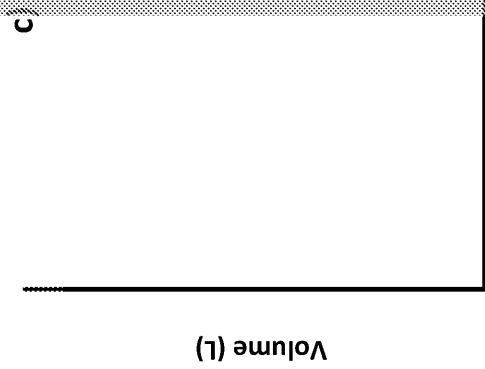
Complete the table below by identifying what happens during expiration and inspiration.



Changes to our mechanics of breathing lead to changes in our Tidal Volume.

Exhalation		Inhalation	Changes during exercise
External intercostal muscles			More forceful contraction of intercostal muscles
Internal intercostal muscles			More forceful contraction of the diaphragm
Ribs			Greater pressure difference between the lungs and environment
Diaphragm			
Lung volume			
Air pressure in lungs			
Air pressure is relatively high in...			

TV	Tidal Volume:
VC	Vital Capacity:
RV	Residual Volume:
VE	Minute ventilation:



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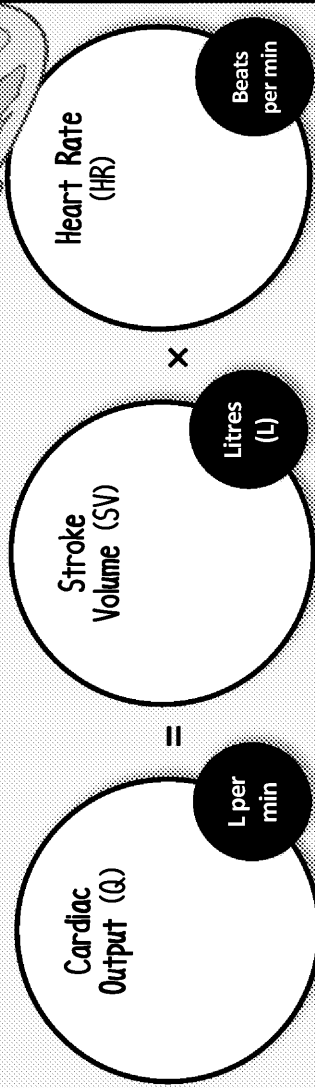
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Define the terms heart rate, stroke volume and cardiac output.

Function of the Heart

The heart needs to supply the muscles with enough oxygen to work. In order to increase the amount of oxygen supplied, they can increase the stroke volume or the heart rate.



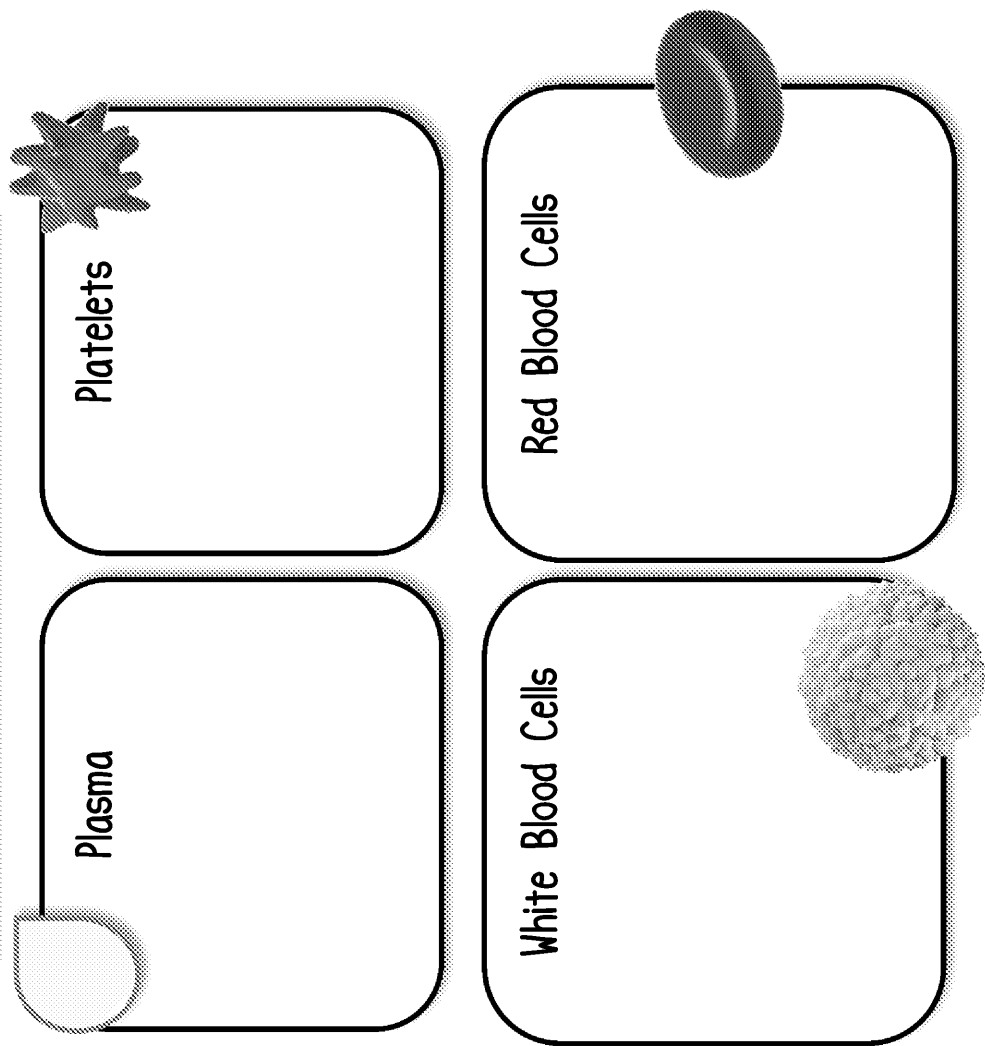
Exercise increases heart rate and stroke volume, due to the demand for more oxygen by working muscles. This will result in an increased cardiac output during exercise.

Components of Blood

There are four components of the blood that help perform its functions.

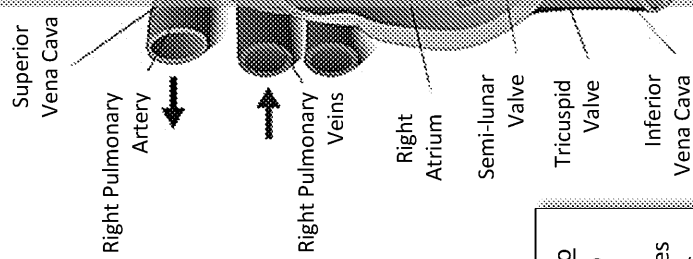


Outline the role of the different components of blood.



The Circulatory System

The Structure of the Heart



Note: You do not need to know the specific names of the valves.



Describe the pathway of the diagram above.

The blood fills the heart chambers.
The flow of blood between chambers is under high pressure in opposite direction.

Blood is pumped around the body.

- 1
- 2
- 3
- 4
- 5
- 6
- 7

The valves of the heart open and close to prevent backflow of blood.

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Describe aerobic and anaerobic exercise in your own words. Then list as many sports as you can think of that use each type of exercise.

Aerobic Exercise

Description:

+

→

+

+

Sports:

More sports:

Aerobic and Anaerobic Exercise

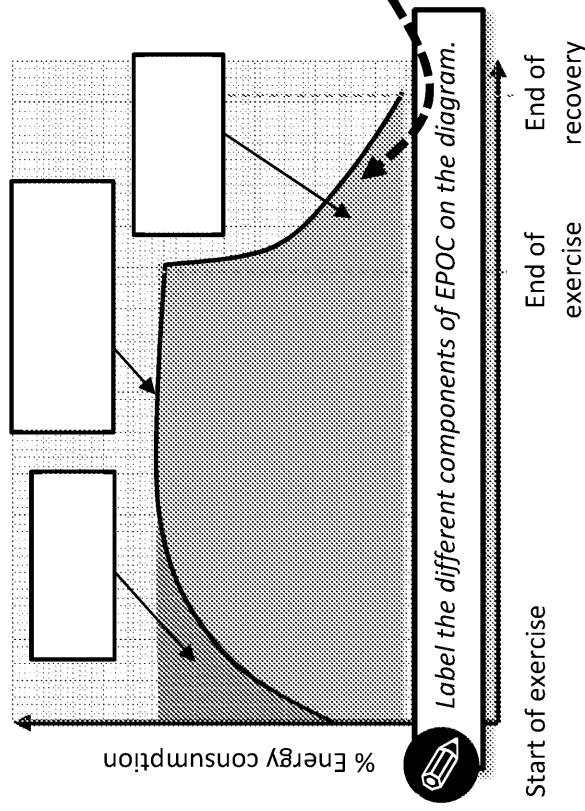


Describe how the following factors affect recovery time.

Excessive post-exercise oxygen consumption (EPOC)

lactic acid is removed from the body by keeping an elevated breathing rate after exercise has stopped.

- EPOC occurs following **anaerobic exercise**, such as performing a 100 m sprint.
- The graph below outlines the breathing rate of an athlete during and after **anaerobic exercise**:



Factors affecting recovery time:

- Intensity and duration of exercise:

- Age:
- Fitness levels:
- Hydration:
- Nutritional supplements:
- Sleep:
- Environment:
- Injury and illness:
- Type of exercise:

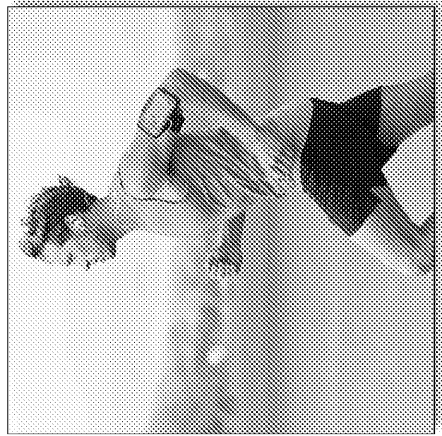
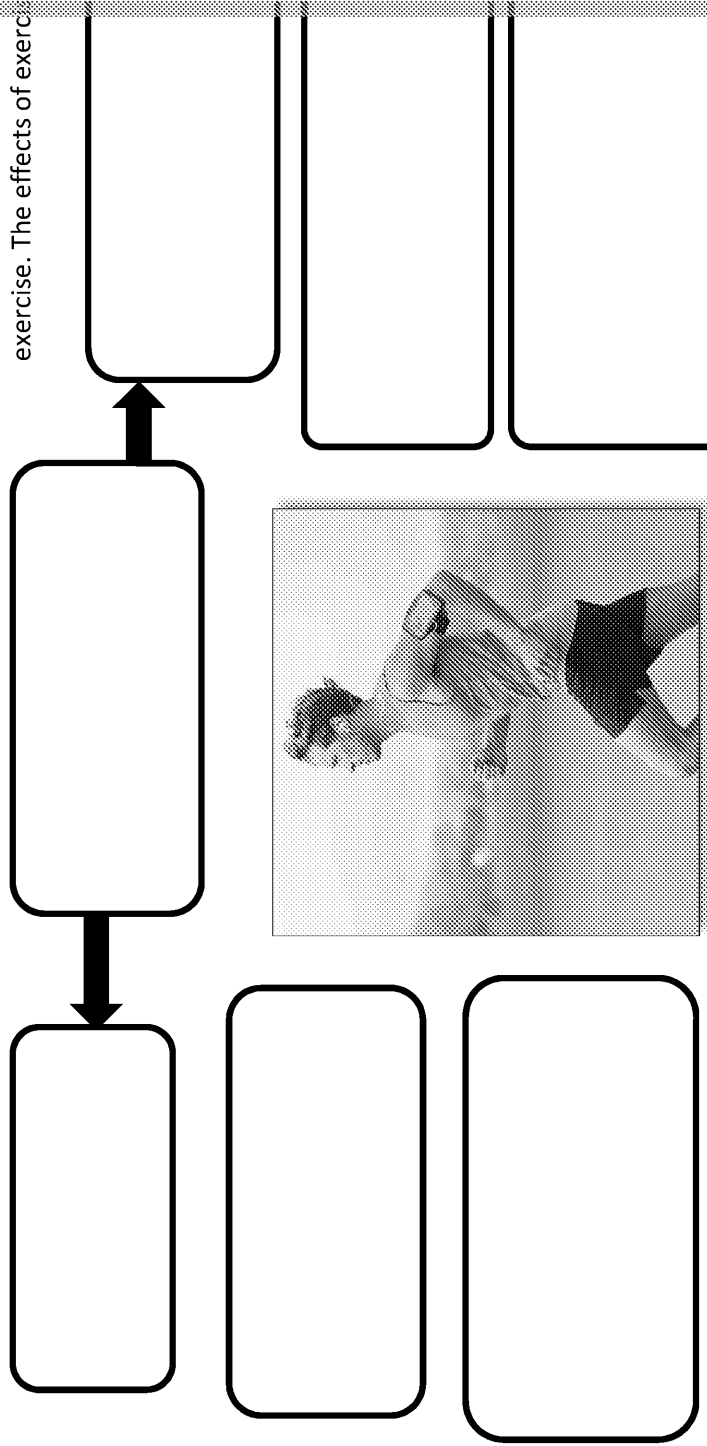
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Short- and Long-term

Exercise leads to a number of changes in the body. The effects of exercise on the body can be divided into short-term and long-term effects.

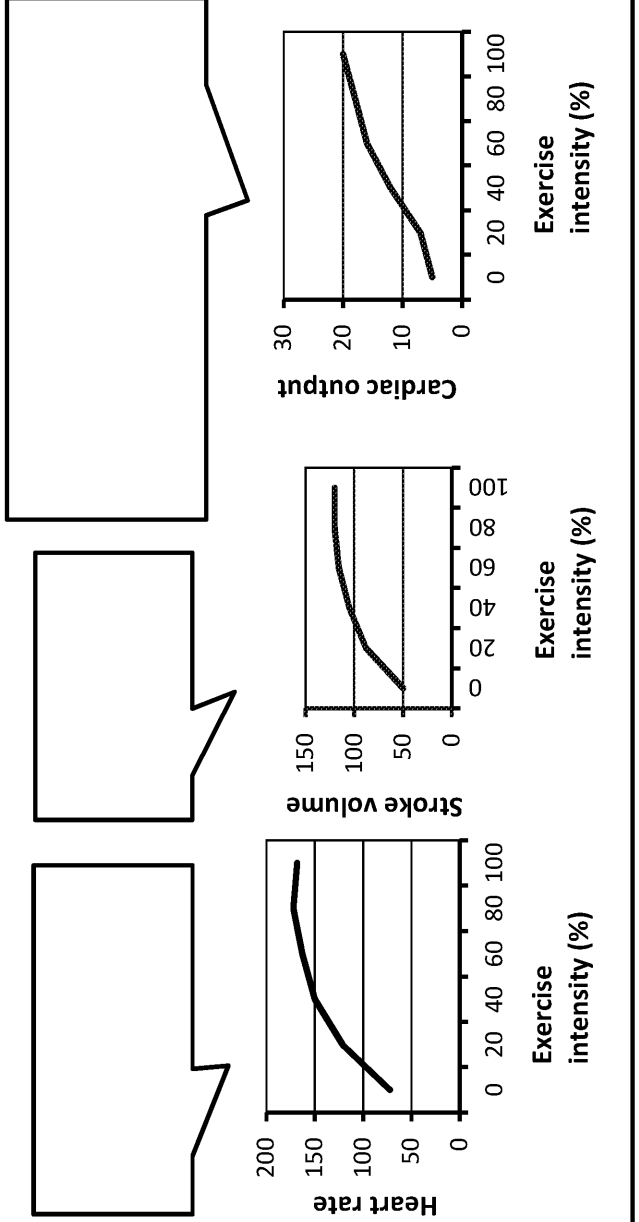


Short-term Effects of Exercise

Heart rate, stroke volume and cardiac output during exercise

During exercise, the heart rate and stroke volume increase in proportion to the increase in the intensity of exercise until a plateau is reached. This results in a greater cardiac output which provides the body with greater levels of oxygen during exercise.

The changes to cardiac function during exercise are displayed in the graphs below:



Annotate and explain each of the graphs below to describe the changes to heart rate, stroke volume and cardiac output as we exercise.

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Lever Systems

Simple

Movement at the joints occurs by one of the three classes of levers.



Draw a basic diagram for a first-, second- and third-class lever system and give an example in sport where each would be used.

1st Class

Basketball shooting
Movement at the elbow:
Preparation:
Execution:
Lever system:
Fulcrum (elbow)
Effort (Triceps)
Load

2nd Class

Push-up
Movement at the elbow:
Downwards:
Upwards:
Lever system:
Effort (triceps)
Fulcrum (foot)
Load

3rd Class

Cycling
Movements at the knee:
Lever system at the knee:
Effort (hamstring and quadriceps)
Fulcrum (knee)
Load

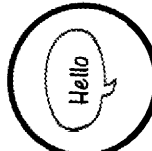
Revision Success Tip!
Remember...
1 2 3
F L E
The letter is the middle part of the lever system

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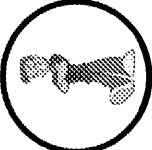
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Social Health and Well-being

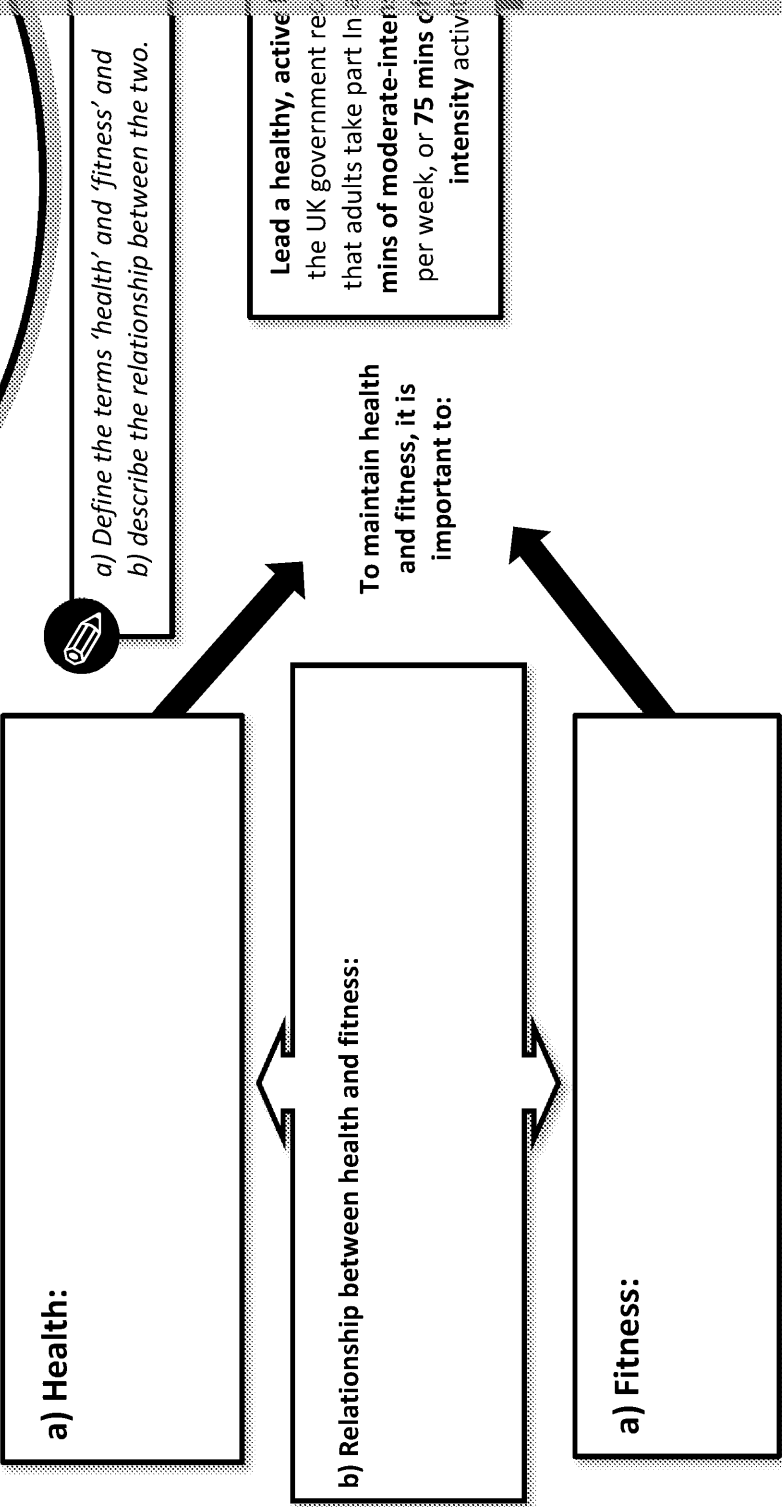


Mental Health and Well-being



Use the images to help you identify the effects of leading a physically active lifestyle on social, mental and physical health and well-being.

Relationship between Health and Fitness



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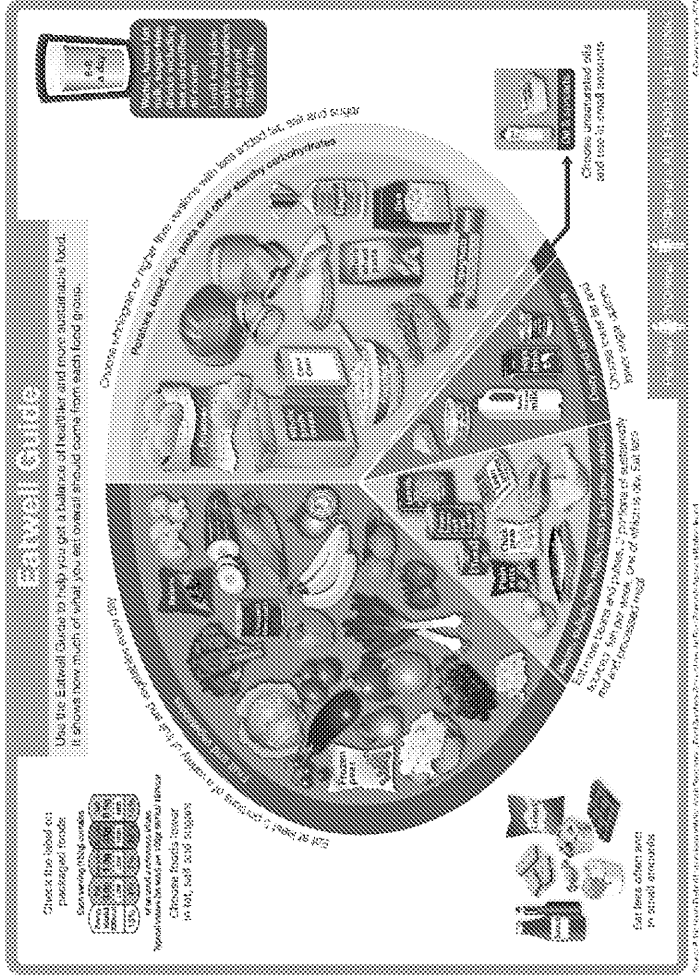
Diet and Energy

Balanced Diet

There is no single food which fulfils the needs of the body; therefore, it is important that a balanced diet is consumed. A balanced diet is needed to:

- ensure enough nutrients, vitamins and minerals are consumed
- limit the storage of unused energy as fat
- reduce the likelihood of a person developing obesity
- ensure energy is available for physical activity
- ensure nutrients are available for energy, growth and hydration

The Eatwell Guide is a useful tool for following a healthy balanced diet...



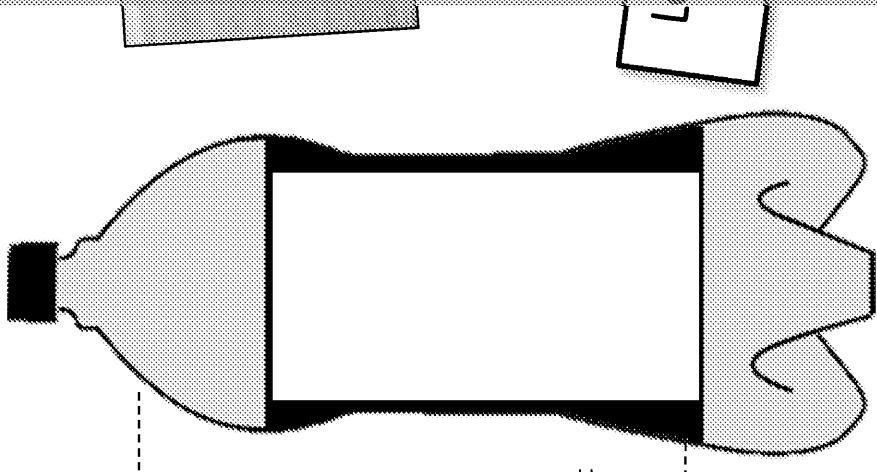
Fibre is a type of carbohydrate that is important for digestive health and aids the uptake of other nutrients. Examples include dried fruits, nuts and wholegrains.

Macronutrients needed by the body		
Carbohydrate	a) _____ %	b) _____ c) _____
Fat	a) _____ %	b) _____ c) _____
Protein	a) _____ %	b) _____ c) _____
Macronutrients needed by the body		
Minerals and vitamins	ensure body systems functioning effectively. Examples include improve immune function and so reduce	

- For each of the nutrients in the table, identify an appropriate food source and explain its importance.
- a) Identify an appropriate food source
 - b) Explain its importance
 - c) Identify example food source

Water and dehydration

- ❖ Dehydration occurs when there is an imbalance between the amount of water taken in through food and drink and the amount of water lost.
- ❖ In order to avoid dehydration it is important that enough water is drunk.
- ❖ Drinking water is particularly important when exercising, as more water will be lost as sweat.
- ❖ In some sports such as long-distance running and cycling, the athletes can consume water as they compete. However, in team sports such as hockey, the athletes usually need to wait for a break in play, e.g. during an injury or at half-time.



Outline the impacts of dehydration on a performer.

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Components

The different components of health and fitness that can be improved require different components to perform different skills.

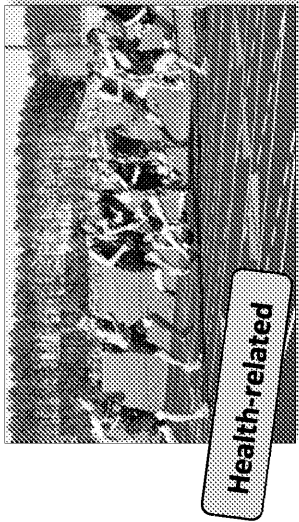


a) Define each component of fitness and

b) explain their importance in sport.

Cardiovascular Endurance / Stamina

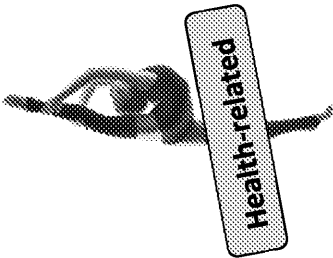
a) Definition:



b) Explanation of importance:

Flexibility

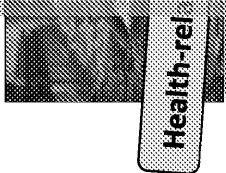
a) Definition:



b) Explanation of importance:

Muscular Strength

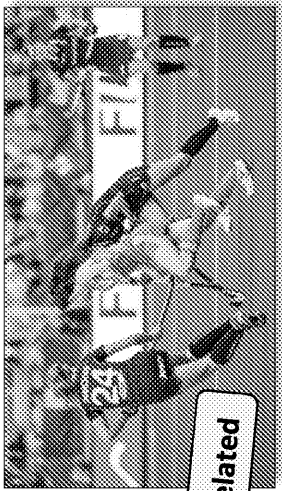
a) Definition:



b) Explanation of importance:

Agility

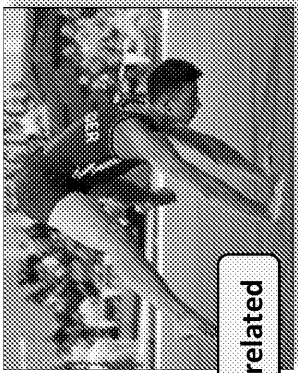
a) Definition:



b) Explanation of importance:

Balance

a) Definition:



b) Explanation of importance:

Components of Fitness

Coordination

a) Definition:



b) Explanation of importance:

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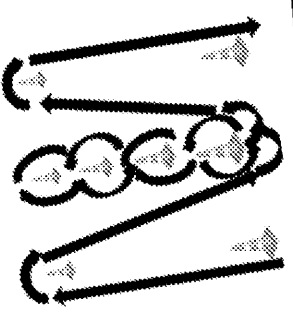
Fitness Testing

There is a range of different fitness tests which can be used to evaluate the different components of fitness. These are outlined below and the advantages and limitations of fitness testing are provided to the side.

Identify as many reasons 'for' fitness testing as you can think of.

Reasons For Fitness Testing

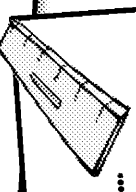
Agility →



(Static) Balance →



Reaction Time →



Flexibility →



Speed →

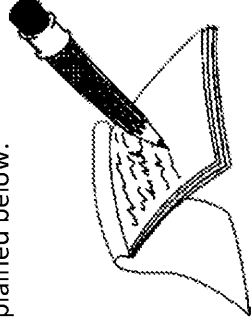
Power →

Coordination →

Identify the test used to measure each component of fitness (use the information on the next page for support), then briefly outline each test.

Fitness

There are two types of data that can be collected from fitness testing, explained below.



- Quantitative data involves numerical measurement
- Qualitative data involves descriptive observation

Qualitative data can be collected by an athlete making notes about how they feel during training sessions and competitions.

Due to the nature of fitness testing, quantitative data is often collected, compared to qualitative data.

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There are two key principles which should be applied when creating and delivering

Identify and describe the *SPORT* principles of training.

S

e.g. a cyclist should perform most of their training on a bike

P

e.g. once bench pressing 50 kg becomes easier, the load should be increased to 52.5 kg

O

e.g. a weightlifter who is comfortable lifting 40 kg should use a heavier weight during training

R

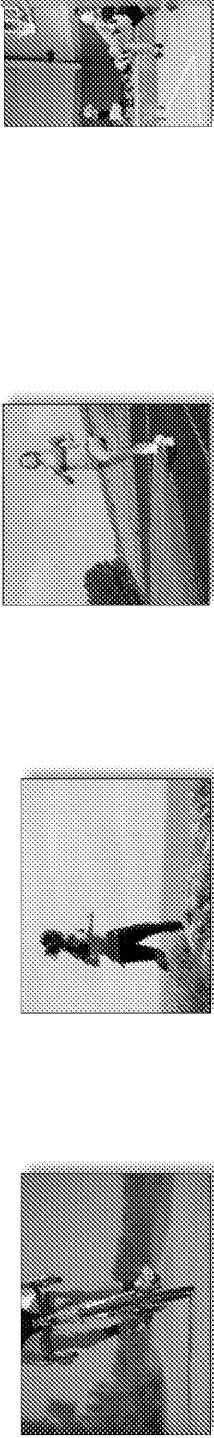
e.g. football players should continue to train in the off-season so they don't lose all of their fitness

T

e.g. a pre-season for hockey players should not only focus on fitness, but should involve activities with the ball too

Complete the table below to outline the key points of each type of training.

The method of training that is performed by at training. The different type



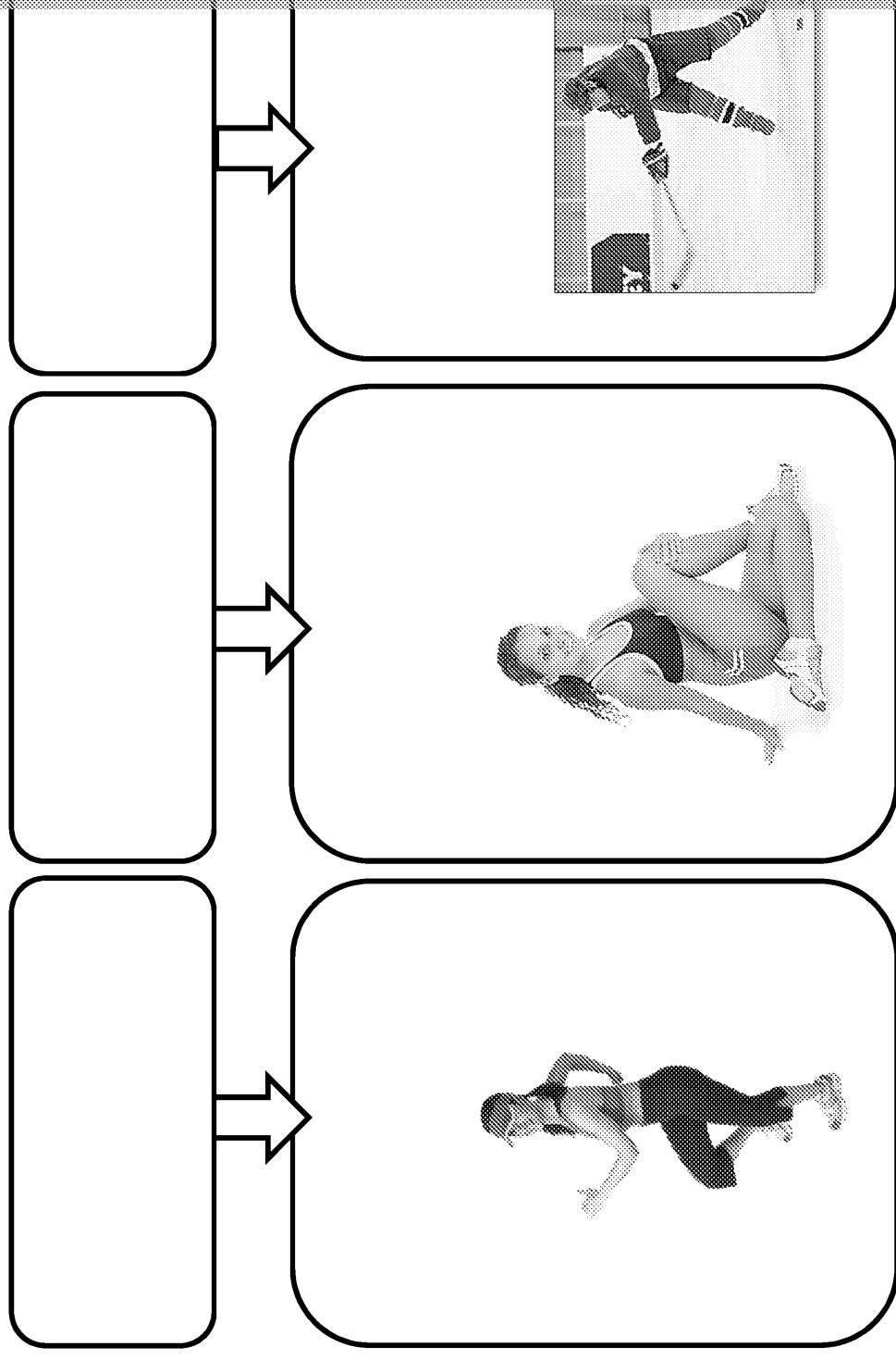
Continuous Training	Fartlek Training	High-intensity Interval Training	Circuit Training
What?	What?	What?	What?
Advantages	Advantages	Advantages	Advantages
Disadvantages	Disadvantages	Disadvantages	Disadvantages
Useful for	Useful for	Useful for	Useful for
Considerations	Considerations	Considerations	Considerations

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Warm-up phases



Reasons for Warming Up

Physiological reasons

Psychological reasons

• • • • •

• • • • •

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Skill

Ability

VS

Sport skills have many characteristics and challenges that come up against. This makes it challenging to learn and perform.

Factors affecting variation in skill level

There are many reasons for the different levels of skill between performers in sport. These include:

1.

2.

3.

4.

5.

Basic Skills

Closed Skills

Fine Skills

Consistent

Accurate

Coordinated

Controlled

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- 1 Performers receive information from their senses (the display).
- 2 The information is processed by the performer.
- 3 The performer will use selective attention, which involves focusing on a specific stimulus and ignoring irrelevant information.

Identify each stage of the information processing model and apply each to a skill from a sporting scenario of your choice.

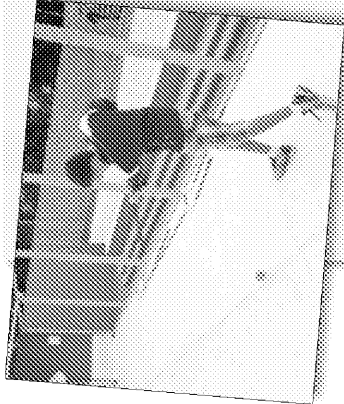
Intrinsic (self)
Extrinsic (others)

Feedback is constantly used to reinforce the long-term memory.

- 1 Feedback is received in two ways:
 - ⊗ **Internal** – how the movement felt
 - ⊗ **External** – from other sources, such as teammates or your coaches
- 2 Positive feedback reinforces actions
- 3 Negative feedback helps identify areas for improvement

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Identify **three** characteristics of each stage of learning.

Cognitive (1st stage)

1.

2.

3.

The process that takes place takes years to develop

1.

2.

3.



Explain the types of guidance and feedback suited to cognitive performers.

Guidance is used to

Manual Guidance



Mechanical Guidance

Feedback

Feedback is used to inform performers in order to provide

Knowledge

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SMARTER

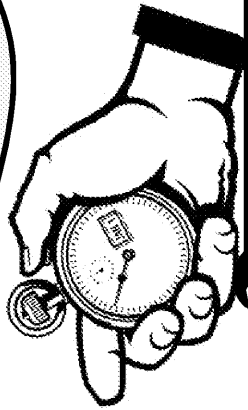
Identify the SMARTER principles of goal-setting.

When setting goals for yourself or for an athlete, you should follow the SMARTER principles.

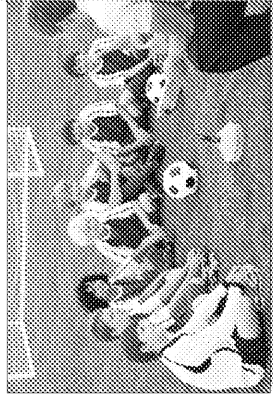
S

M

A



Describe each principle and provide a sporting example of their uses.



Example:

Example:

Example:

The Use of Goal Setting

There are a number of benefits to using effective goal setting.

Setting an

In order to ensure that goals are achieved, they should be taken into account.

Identify five benefits of goal-setting in sport.

1.
2.
3.
4.
5.

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Zi9
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Education

Motivation



Complete the table to identify characteristics and sporting preferences of introverts and extroverts.

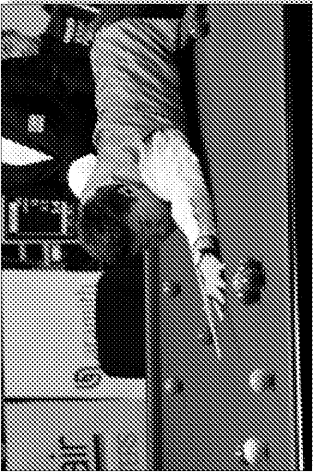
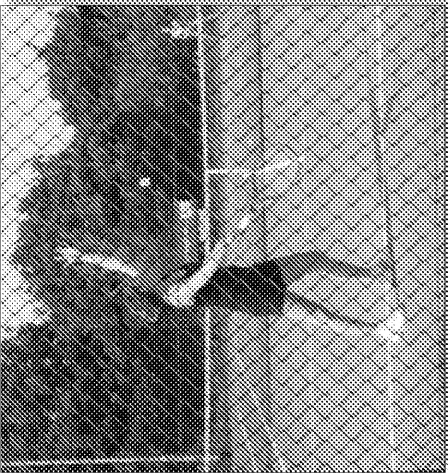
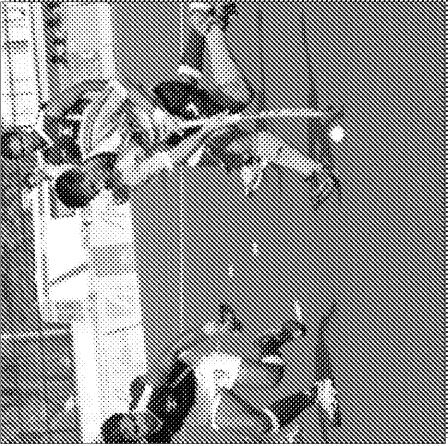
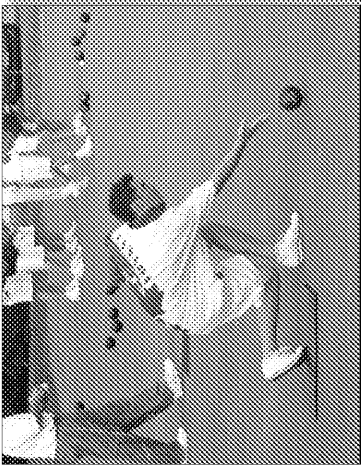
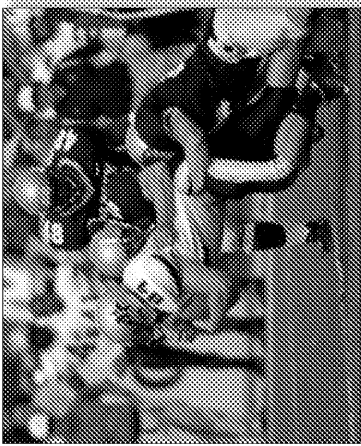
Personality Types

Personality theorists have said that an individual's personality can help dictate what sports they are likely to like. The table below shows the differences between the two personality types: **introvert** and **extrovert**.

Personality type	Introvert	Extrovert
Characteristics		
Sporting Preference		



Identify whether the following sports are suited to introverts or extroverts, and justify your answer.

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Arousal, Anxiety

Define 'arousal'.

Arousal

The effect of arousal on performance is determined by the level of arousal and the sport/skill that is being performed. This relationship is outlined below by the inverted-U graph (Yerkes–Dodson law):

Complete the graph to show two lines highlighting the different optimal levels of arousal for gross and fine skills.

Complete the table below by identifying the different levels of arousal and the optimal level of arousal for optimal performance.

Inverted-U Theory of Arousal

The inverted-U theory states that as arousal increases, performance increases up to a certain point, after which performance becomes over-aroused and performance decreases.

Different skills demand different levels of arousal in order to be performed at an optimal level.

Low Optimal Arousal	High Optimal Arousal

Arousal

A performer who is **under-aroused** may show signs of disinterest and tend to limit their involvement.



A performer who is **over-aroused** may make rash decisions from not thinking straight, or could act aggressively and without control.

Anxiety

A feeling of apprehension when faced with a stimulus that is perceived as threatening.

There are two main types of anxiety:

Somatic anxiety:

Physiological responses to anxiety

Cognitive anxiety:

Mental responses to anxiety

Give three examples of each type of anxiety.

Identify three causes of anxiety.

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Key terms relating to leisure and recreation:

Define the key terms relating to leisure and recrea

Sport –	Play –	Leisure time –	Physical recreation –

Identify three characteristics of the elite level of the sports development pyramid.

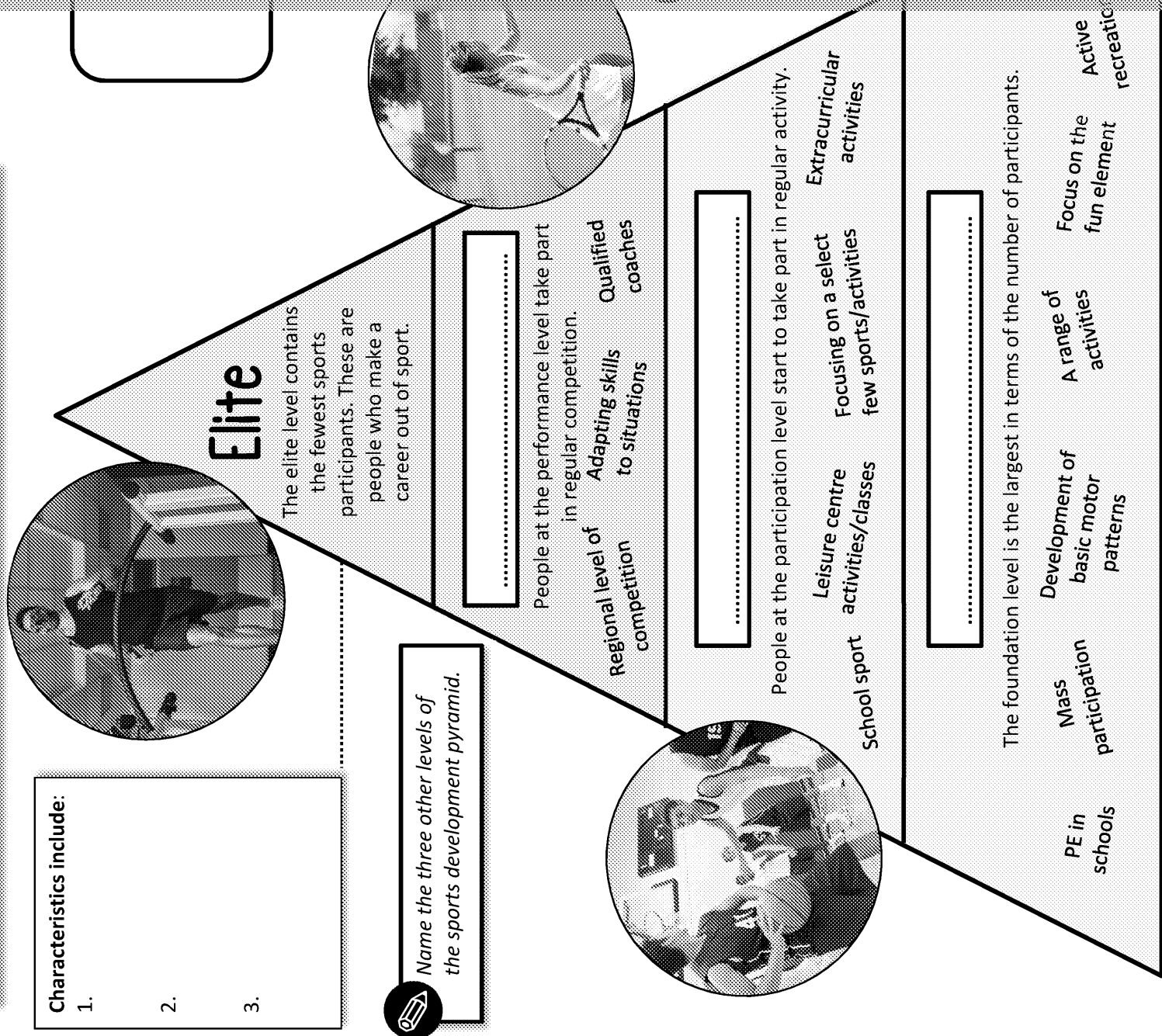
Characteristics include:

1.

2.

3.

Name the three other levels of the sports development pyramid.



Sports development pyramid

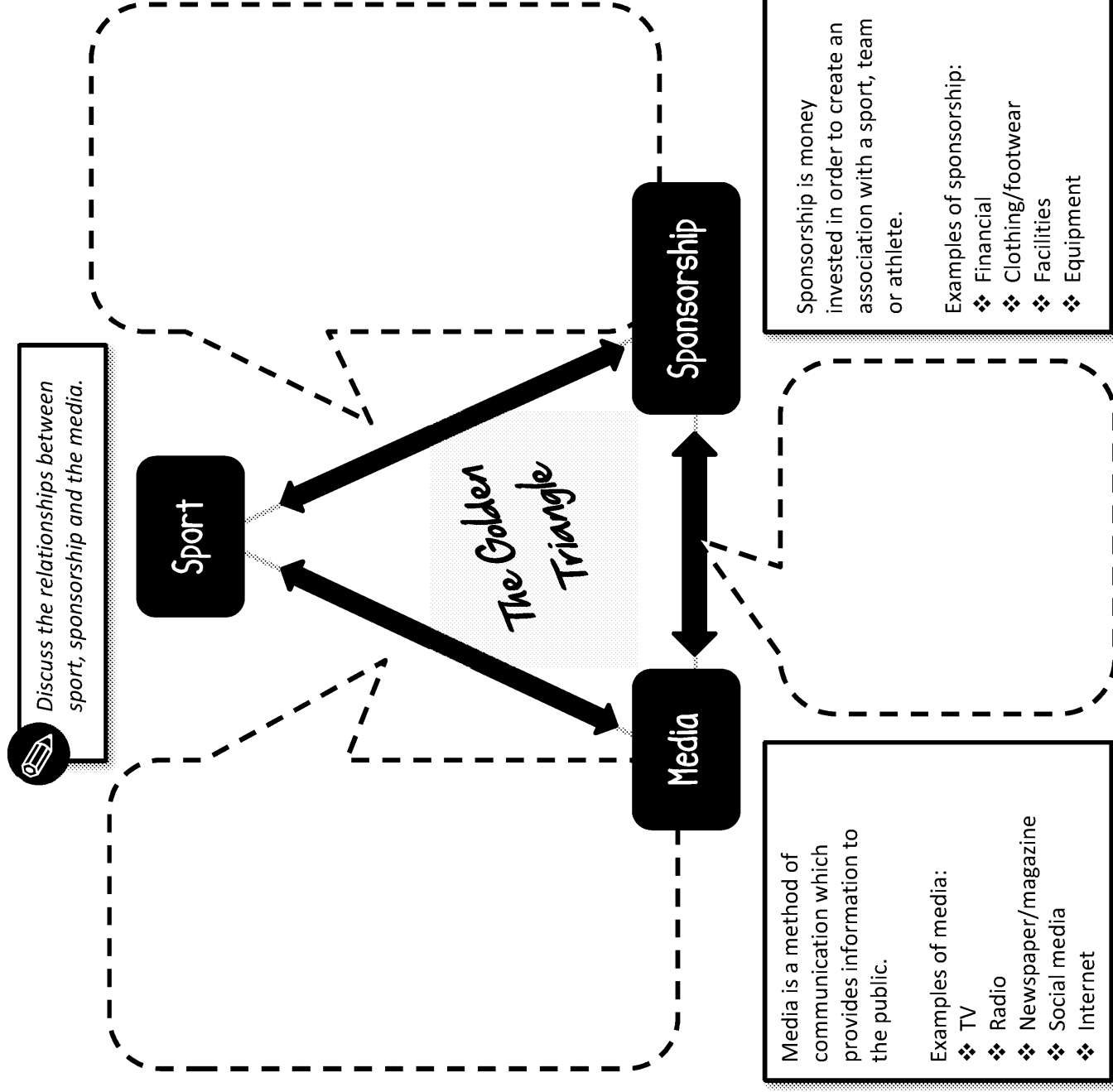
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Commercialisation

Commercialisation is the process by which a product is promoted to an audience. In sport, this occurs when companies form relationships with sports teams / athletes and use the media to promote something.

The golden triangle below shows the relationship between the three components (sport, sponsorship and media) of commercialisation.



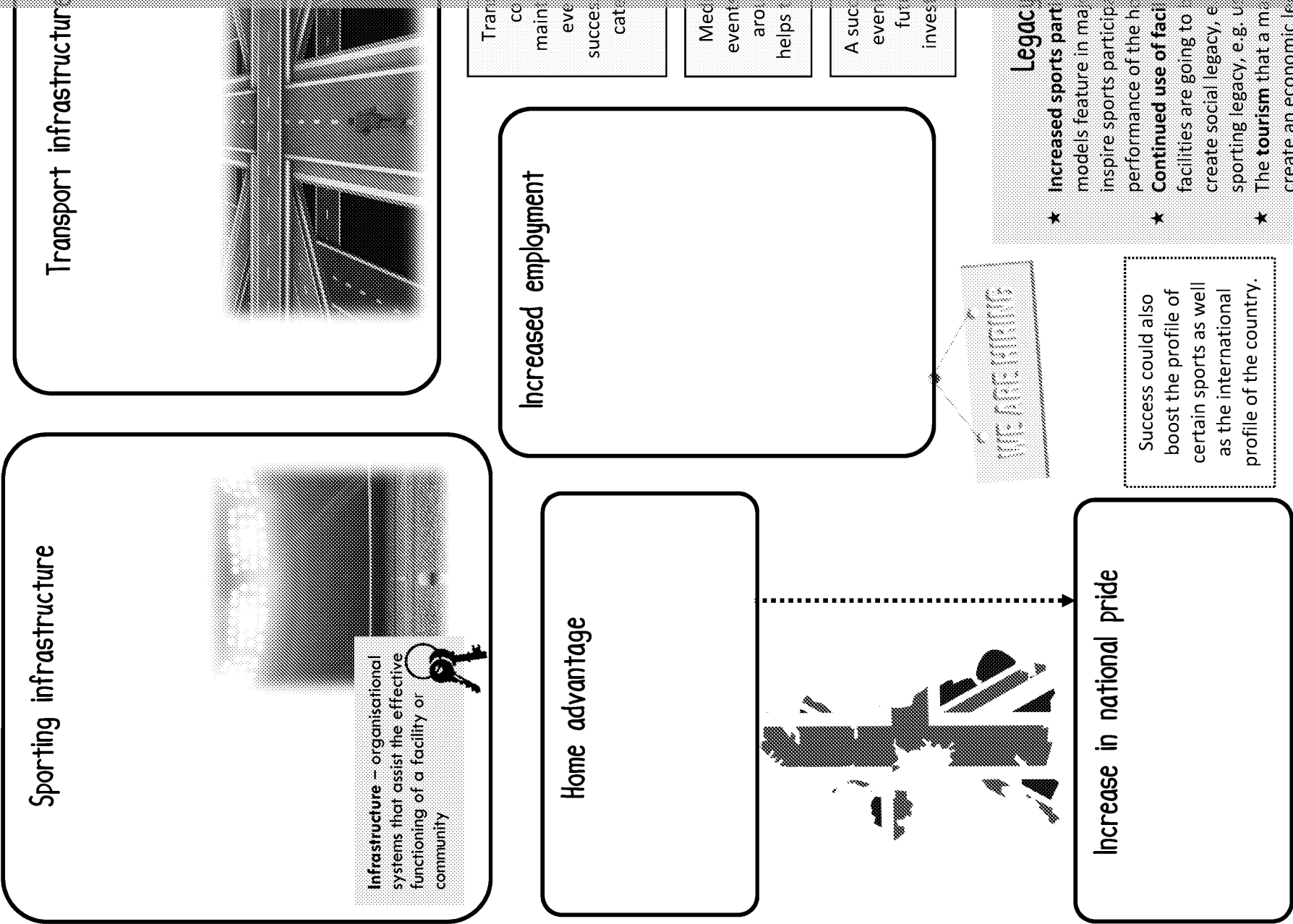
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Glo (& amateur an

Explain the different advantages of hosting global events.



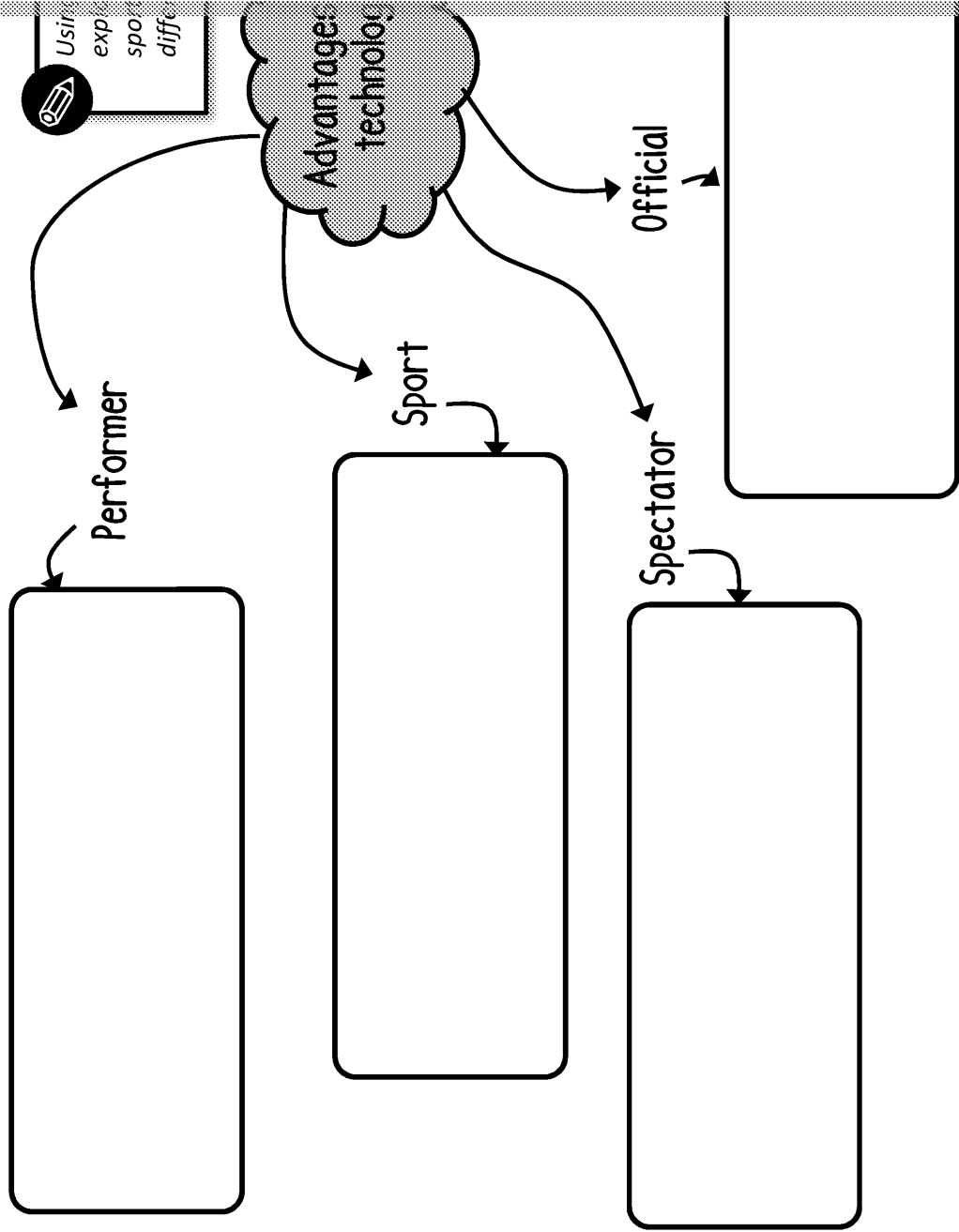
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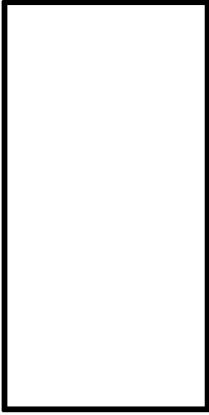
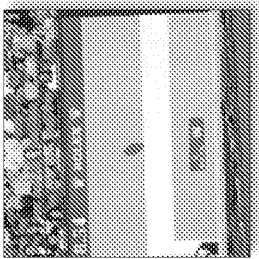
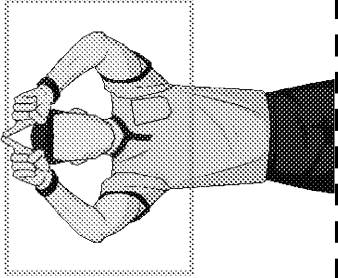
Techno

The technology used in sport is always evolving in an attempt to improve the quality of the game.



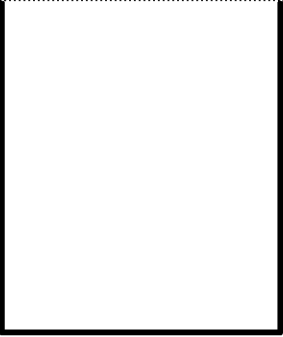
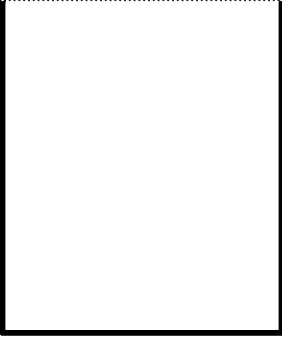
Identify the types of technology shown in the pictures, the sports they are used in, and how they are used.

Decision-making by officials



Technology is used

Three of the most



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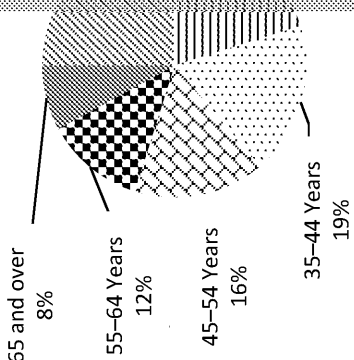
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Age



Explain the factors that can influence participation in sport for different genders, ages and environments

Percentage of people participating in sport at least once a week



The climate/environment can influence participation in sport. If the climate is extreme, people may be less likely to participate in regular physical activity.

Factors influencing access to sport

Identify how promotion and provision can increase physical activity

Strategies

Promotion:
Provision:
Access:

Percentage of males participating in sport once a week in 2016



Gender



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Performance

Complete the information for each of the performance-enhancing drugs below.

There is a vast list of performance-enhancing drugs which are banned within sports. Complete the information for each of the drugs listed below with the information provided.

Stimulants

Effects	
Example of use	

Effects	
Example of use	

Beta blockers

Effects	
Example of use	

Effects	
Example of use	

Blood Doping

Blood is removed from the athlete in the weeks leading up to competition and is frozen, before being re-injected prior to competition.

Blood doping is beneficial for any athlete who works aerobically and requires good cardiovascular endurance, e.g. long-distance runners and cyclists.

Identify the positives and negatives of blood doping for the performance of an athlete.

Positives:	
Negatives:	

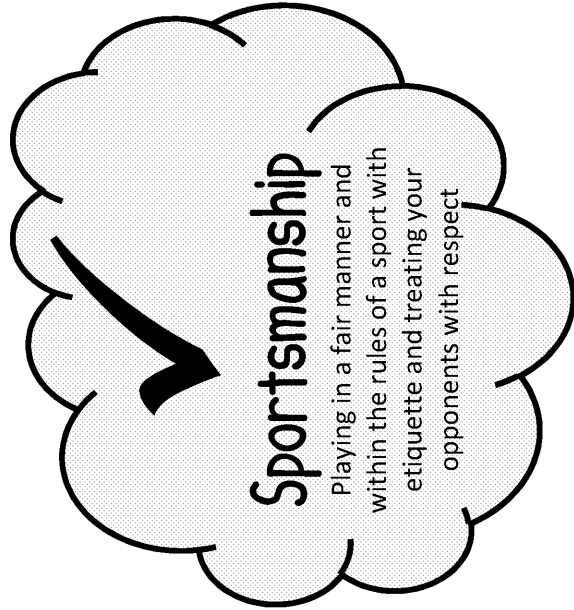
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Sportsmans

There are two key terms which cover how they should



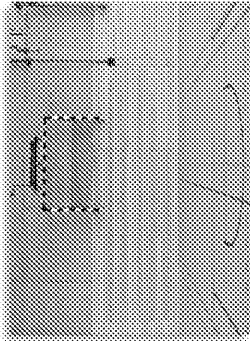
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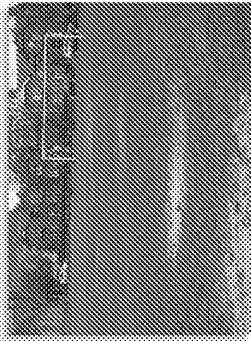


Identify **three** risks in each of the following environments.

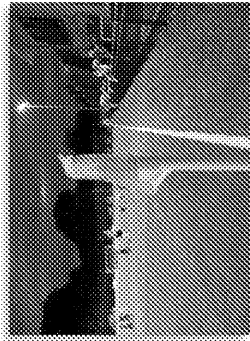
Risks in different environments:



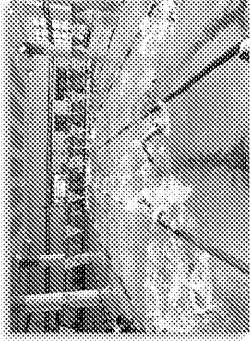
- Indoor sports halls
- 1.
 - 2.
 - 3.



- Playing fields
- 1.
 - 2.
 - 3.



- Artificial surfaces
- 1.
 - 2.
 - 3.



- Swimming pools
- 1.
 - 2.
 - 3.

Risk Assessment

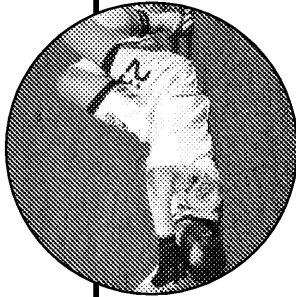
The risk of injury in sport is something influenced by the environment.

Give an example of how each of the following can influence the risk of injury.

Protective clothing/equipment

Appropriate clothing/footwear

Using examples, describe the difference between real risks and perceived risks.



Describe the following minor injuries.

Winding

Example cause: receiving a blow to the abdomen from a football that has been kicked by another player.

Treatment: Deep breaths

Causes of and simple treatments

Cuts and grazes	Blister
Example cause: A cyclist who falls off their bike and grazes exposed legs or arms.	Example cause: A person who wears a new pair of shoes for a long-distance run.
Treatment: Dressings/bandages	Treatment: Blister plasters

