Durrington High School
Physical Education
Knowledge Organisers and Exam Practice
Mr Crane

Performance enhancing drug	Description	Reasons	Side effects	Sporting examples
Blood doping				
Beta blockers				
Stimulants				
Narcotic analgesics				
Anabolic agents				
Diuretics				
Peptide hormones				

Performance Enhancing Drugs

Advantages to performer of taking PEDs	Description
Increased chance of success	Eg archer taking beta blockers to reduce tremble for accuracy
Fame	The more successful you are the more publicity you get
Wealth	More prize money or sponsorship deals due to more success
Level playing field	If everyone were to take them it would make things equal for all performers

Disadvantages of performers taking PEDs	Description
Cheating immoral	Everyone will know you have cheated
Associated health risks	See previous slide
Fines	If caught you have to pay a fine
Bans	May not be able to take part in next match for example
Reputational damage	• Public shaming • Unable to get sponsorship

Disadvantage to sport/event when performers take PEDs	
Bad reputation	May not be given the respect it deserves
Poor credibility	May be seen as untrustworthy or unreliable

Functions of the Skeleton	Explanation
Movement	
Mineral Storage	
Support	
Shape and Points of attachment	
Blood Cell Production	
Protection	Skeleton protects vital organs e.g. brain protects the cranium.

Joint Type	Location	Joint Actions
Hinge		
Ball and Socket		

Joint Action (Type)	Agonist Muscle (working)	Antagonist Muscle (relaxing)
Extension @ Knee (Hinge)		
Flexion @ Knee		
Extension @ Elbow (Hinge)		
Flexion @ Elbow		
Flexion @ Hip (Ball and Socket)		
Extension @ Hip		
Plantar Flexion @ Ankle (Hinge)		
Dorsi Flexion @ Ankle		

Components of synovial joint	Role
Cartilage	
Ligament	
Joint Capsule	
Synovial Fluid	
Synovial Membrane	
Bursae	

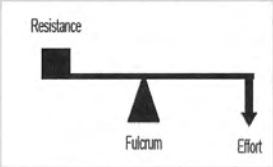
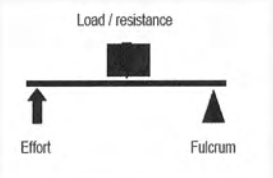
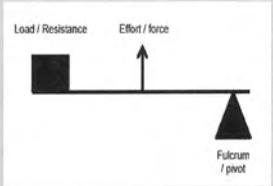
Joint Action	Definition
Flexion	
Extension	
Rotation	
Circumduction	
Abduction	
Adduction	
Plantar Flexion	
Doris Flexion	

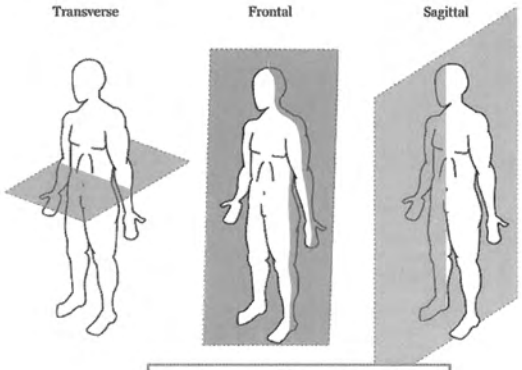
Type of Muscular Contraction	Definition	Example
Isometric		
Isotonic CONCENTRIC		
Isotonic ECCENTRIC		

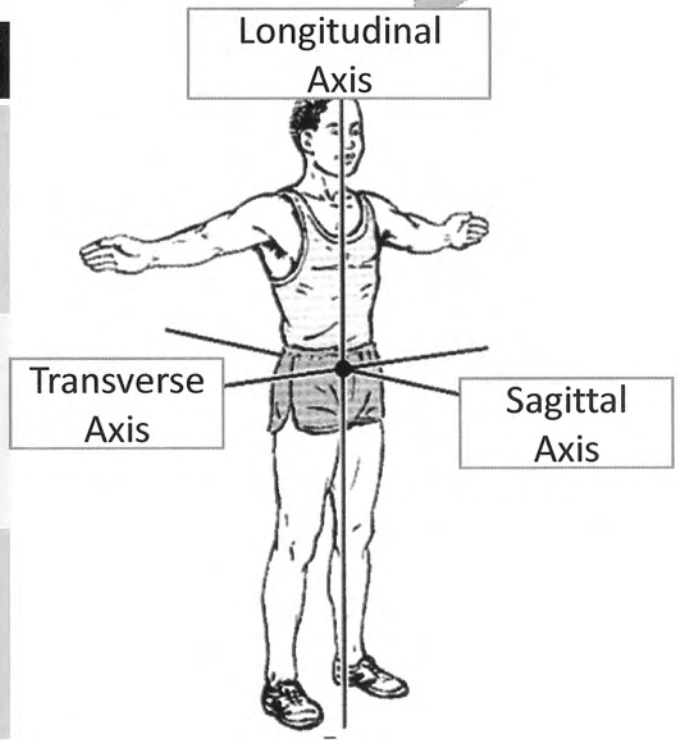
Muscles, Movement and Joints

Planes, Axes and Levers

Planes	Axes	Joint Action	Sporting Examples
Sagittal	Transverse		
Frontal	Sagittal		
Transverse	Longitudinal		

Lever Class	Middle	Diagram	Joint Action	Sporting Example	Mechanical Advantage (effort arm / resistance arm)
1st					
2nc					
3rd					





Respiratory System and Blood Vessels

Blood Vessels	Structure	Functions	Relevance
Arteries			
Capillaries			
Veins			

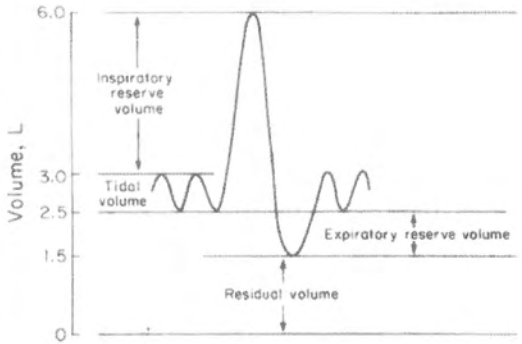
Spirometer Trace	Description	Explanation
Spirometer Trace	• A machine that is used to measure lung volumes.	• As the individual breathes in and out a line is drawn by a spirometer, showing the depth and rate of breathing. This is called a spirometer trace.

Mechanics of breathing	Inhaling and exhaling during exercise
Mechanics of breathing	
During Inspiration	
During Expiration	The rib cage is pulled down

Lung Volumes	Definition
Lung Volume	
Tidal Volume	
Inspiratory reserve volume	
Expiratory reserve volume	
Residual volume	

Mechanics of breathing	Inhaling and exhaling at rest. Explanation during Inspiration
Intercostal muscles	
Diaphragm	
Chest Cavity	

Mechanics of breathing	Inhaling and exhaling at rest. Explanation during Expiration
Intercostal muscles	
Diaphragm	
Chest Cavity	



Injury prevention	Reason
Complete a warm up	
Avoid overtraining	
Wear appropriate clothing and footwear	Example:
Taping/bracing	P
Hydration	
Avoid overstretching	
Correct technique	
Appropriate rest	

Seasonal training	Definition	Training includes	Benefits
Pre-season			• Fitness and skill lost during post-season can be regained. • Skills and techniques can be improved.
Competition season	Peak Playing season		• Fitness levels and quality of performance can be maintained throughout the season.
Post-season			

High altitude training	Stages of high altitude training	Benefits of high altitude training	Limitations of high altitude training
Anywhere 2000m above sea level or above is considered to high altitude.			

Long Term Effects (after months of regular exercise)	Short Term Effects (24-36 hours after exercise)	Immediate Effects (whilst exercising)
Lower resting heart rate		Red, hot, Sweaty

Heart, Blood vessels, redistribution of blood, cardiac cycle, Systole/Diastole.

Cardiac Output (Q)	Stroke Volume (SV)	Heart Rate (HR)
		The number of times the heart beats per minute

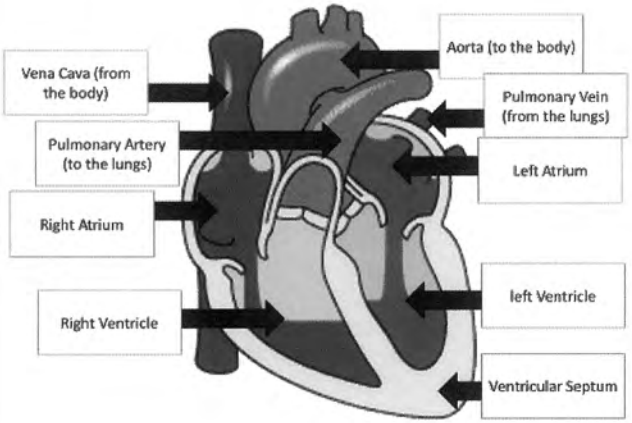
Cardiac Cycle
1
2
3
4 Oxygenated blood returns to the heart via the **Pulmonary Vein** and fills the left side
5
6 Deoxygenated blood returns to the heart

Changes in Heart Rate before and during exercise
Before: Increase in heart rate – this is called the **anticipatory rise** due to release of adrenaline.
During:

Blood vessels	Arteries	Veins	Capillaries
Structure	• Thick muscular and elastic walls • Small lumen (internal diameter)		• Very thin walls (1 cell thick) • Small lumen (internal diameter)
Functions		• Carry blood at low pressure towards the heart • Carries deoxygenated blood (except the pulmonary vein)	

Cardiac Cycle

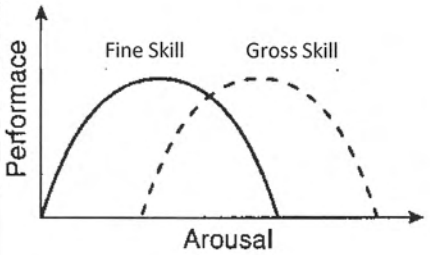
Diastole	Systole (S = squeezes)
	When the chamber contracts and ejects blood

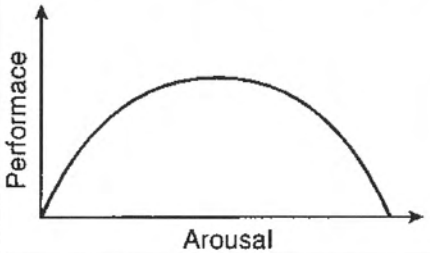


Redistribution of Blood	EG of redistribution of blood	Vasoconstriction	Vasodilation
When you exercise the working muscles need more oxygen. When you exercise – heart rate and stroke volume increase. Blood is diverted away from inactive areas to the working muscles			

Arousal, Personality, feedback, Motivation

Content	Definition
Arousal	
Inverted-U theory	
Optimum arousal	





Aggression	Is used to deliberately cause harm of injure another person
Direct aggression	
Indirect aggression	

Stress management	Arousal can be controlled using stress management techniques
Visualisation	
Mental rehearsal	
Positive self talk	
Deep breathing	

Personality	is the particular characteristics and behaviour that you generally display
Introvert	
Extrovert	

Motivation	The drive to succeed, the desire to achieve something	Evaluation of motivation
Intrinsic motivation		Intrinsic motivation is more effective and will lead to continued effort.
Extrinsic motivation		Extrinsic motivation can lead to feelings of pride which is associated with intrinsic motivation. Over use of extrinsic motivation can reduce intrinsic as you become reliant on rewards

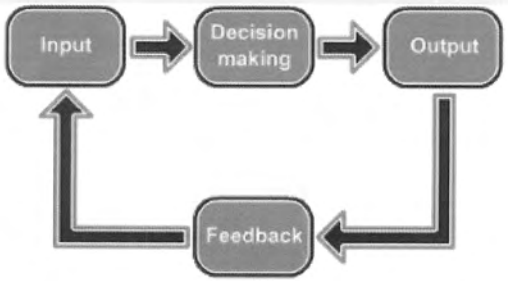
Goal Setting, Information processing, Feedback, Guidance

Goal Setting	Definition	Sporting Example
Performance Goals		Perform 3 successful serves a game
Outcome Goals		Win the 100m race

SMART Goals	Definition
Specific	
Measurable	
Accepted	
Realistic	
Time Bound	

Types of Guidance	Definition	Who it is good for	Example
Visual		Beginners and Elite	
Verbal		Beginners and Elite	
Manual		Beginners	
Mechanical		Beginners	

Basic Information Processing Model	Role of this stage	Sporting Example (Tennis)
Input		
Decision Making		
Output		
Feedback		



Types of Feedback	Definition	Example
Intrinsic		
Extrinsic		
Positive		
Negative		
Knowledge of Results (KOR)		
Knowledge of Performance (KOP)		

Health, Fitness, Sedentary Lifestyle, Obesity, Diet and Somatotypes

Health and Fitness	Definition	Benefits
Health		
Mental Health	.	.
Physical Health	.	.
Social Health	.	.
Fitness		.

Ectomorph (marathon, HJ)	Endomorph (prop)	Mesomorph (sprinter)
Low % of muscles mass	Low % of muscles mass	High % of muscles mass

Component	Benefit
Carbohydrates (55-60%) pasta, bread and rice	
Protein (15-20%) meat, eggs, fish	
Fats (25-30%) nuts, seeds, oils	
Fibre - cereals	
Vitamins – vitamins D - oranges	
Minerals – potassium- banana	
Water	

Sedentary Lifestyle: Definition	Consequences of a sedentary lifestyle
	.

Obesity Definition	Effect on performance in physical activity and sport	Impact on health (physical)	Impact on health (mental)	Impact on health (social)
A term			.	.

Commercialisation

Impact on performer		Impact on official		Impact on spectator		Impact on sponsor		Impact on Sport	
Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
-	-			-	-	-	-	-	

Reasons for Sponsoring	Recipients of Sponsorship	Types of Sponsorship
P		
A		
S		
T		

The 'golden triangle'

" The financial relationship between sport sponsorship and media."

PROFIT!

Key Word	Definition
Commercialisation	
Media	
Sponsorship	

Pathway of Air and Gaseous Exchange

The pathway of air	Explanation
The pathway of air	
Trachea	
Lungs	
Bronchi	
Bronchioles	
Alveoli	

Gaseous Exchange	Explanation	Process	Features that assist
Gaseous Exchange			• Large surface area of alveoli • Moist thin walls (one cell thick) • Short distance for diffusion (short diffusion • Pathway) • Lots of capillaries • Large blood supply • Movement of gas from high concentration to • Low concentration.
Alveoli			
Capillaries			

Component of Fitness	Definition	Sporting Example	Test
Flexibility			
Strength			
Cardio-Vascular Endurance			
Power			
Speed			
Agility			
Balance			
Co-ordination			
Reaction Time			
Muscular Endurance			

Training Type	Explanation	Positives	Negatives
Weight Training			
Fartlek Training			
Circuit Training			
Plyometric Training			
Continuous Training			
Interval Training (HIIT)			
Static Stretching			

Principles of Progressive Overload	Explanation
Frequency	
Intensity	
Time	
Type	

Principle of Training	Explanation
Specificity	
Progressive Overload	
Reversibility	
Tedium	

Training Zone	Definition	Equation	Intensity and Time
Aerobic Training Zone			
Anaerobic Training Zone			

Skills and Ability

Type of Skill	Define/Describe	Sporting Examples
Open Skill		Passing (invasion games)
Closed Skill		Free throw (basketball)
Basic Skill		running (marathon)
Complex Skill		Double front somersault (gymnastics)
Self-Paced Skill		Javelin (athletics)
Externally Paced Skill		Saving a penalty (football),
Gross Skill		Tackle (rugby)
Fine Skill		Net shot (badminton)

Key Word	Definition
Ability	
Skill	

Technology

Impact on performer and sport		Impact on official		Impact on spectator		Impact on sponsor	
Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative

Spectator Behaviour and Hooliganism

Positives of spectator	Negatives of Spectators	Reasons why hooliganism occurs	Strategies to prevent hooliganism

Conduct of Perfumers	Definition	Example
Sportsmanship	Payers display good etiquette and abide by the contract to compete.	Shaking hands, kicking the ball out if someone is injured
Etiquette	Unwritten rule in an activity. It is not enforceable but usually observed.	Apologising for a net call in tennis
Gamesmanship	The bending/stretching of the rules to gain an unfair advantage.	Time wasting or sledging
Contract to Compete	An agreement to follow and abide by the written and unwritten rules and to give 100% effort.	

Social Groups	Gender	Religion/race/culture	Age	Family	Disability
Attitudes					
Role models					
Accessibility					
Media coverage					
Stereotyping					
Culture					
Family commitments					
Leisure time					
Education					
Disposable income					
Adaptability					

Performance enhancing drug	Description	Reasons	Side effects	Sporting examples
Blood doping	1) Performer removes blood a few weeks before competition 2) Blood is frozen and stored 3) During this time body replaces the removed blood 4) Just before competition stored blood re-injected into the performer	• Increase red blood cells • Increase in oxygen-carrying capacity	• Infection from equipment • Increased thickness (viscosity) of the blood • Deep vein thrombosis due to blood clots • Stroke as a result of blood clots	• Long-distance cyclists • Long-distance runners • Games players where the game can last for hours
Beta blockers	Designed to treat various health issues, particularly those associated with the heart such as high blood pressure. They work by blocking the effects of adrenaline, so helping slow down the heart rate.	• Reduce performers anxiety • Allow performer to remain in control • Improve fine motor control/preciseness	• Nausea • Weakness • Heart problems • Slowing heart rate	• Target shooting • Gymnastics
Stimulants	Increase brain activity and make an individual feel more awake and alert.	• Increase alertness • Reduce tiredness • Increase heart rate	• Insomnia • Anxiety • Aggression	• Rugby • Boxing • Long distance cycling
Narcotic analgesics	Designed to temporarily relieve pain. Act on the brain and spinal cord to dampen effect of painful stimuli	• Increase performers pain threshold • Mask injuries so performer can continue to compete • Give a sense of being invincible	• Nausea • Anxiety • Kidney/liver damage • Addiction	• Sprinting • Boxing • Football
Anabolic agents	They have the same chemical structure as the male hormone testosterone.	• Allow them to train harder for longer, increasing power and strength • Speed up recovery time • Increase protein synthesis helping to develop lean muscle mass	• Liver damage • Skin problems including acne • Mood swings including increased aggression	• Sprinting • Weight lifting
Diuretics	Increase rate of urination which increases the amount of fluid the body loses.	• Achieve quick weight loss • Mask or hide other PEDs the performer may have taken making them harder to detect	• Dehydration • Nausea • Heart/kidney failure	• Horse racing • Boxing
Peptide hormones	EPO	• Increase red blood cell production • Increase oxygen delivery to working muscles	• Increased thickness of blood • Blood clots • Increased risk of heart attack	• Rugby • Distance cycling • Distance running
	HGH-human growth hormones	• Help increase muscle mass • Burn more fat	• Arthritis • Heart failure • Abnormal growth in hands and feet	• Sprinting • weightlifting

Performance Enhancing Drugs

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Associated health risks	See previous slide
Fines	If caught you have to pay a fine
Bans	May not be able to take part in next match for example
Reputational damage	• Public shaming • Unable to get sponsorship

Disadvantage to sport/event when performers take PEDs	
Bad reputation	May not be given the respect it deserves
Poor credibility	May be seen as untrustworthy or unreliable

Functions of the Skeleton	Explanation
Movement	Skeleton and muscles work together to produce movement
Mineral Storage	The long bones store mineral such as calcium and potassium
Support	The skeleton provides support of internal structures and organs.
Shape and Points of attachment	The skeleton decides the height and shape of a person as well as providing points for muscles to attach to.
Blood Cell Production	Blood cells are produced in the marrow of long bones.
Protection	Skeleton protects vital organs e.g. brain protects the cranium.

Joint Type	Location	Joint Actions
Hinge	Elbow, Knee and Ankle*	Flexion and Extension, *plantar Flexion and Dorsi Flexion
Ball and Socket	Hip and Shoulder	Flexion, Extension, Rotation, Abduction and Adduction (circumduction only available at shoulder)

Joint Action (Type)	Agonist Muscle (working)	Antagonist Muscle (relaxing)
Extension @ Knee (Hinge)	Quadriceps	Hamstrings
Flexion @ Knee	Hamstrings	Quadriceps
Extension @ Elbow (Hinge)	Triceps	Biceps
Flexion @ Elbow	Biceps	Triceps
Flexion @ Hip (Ball and Socket)	Hip Flexors	Gluteals
Extension @ Hip	Gluteals	Hip Flexors
Plantar Flexion @ Ankle (Hinge)	Gastrocnemius	Tibialis Anterior
Dorsi Flexion @ Ankle	Tibialis Anterior	Gastrocnemius

Components of synovial joint	Role
Cartilage	Reduces friction and absorbs shock
Ligament	Connects bone to bone and stabilises the joint
Joint Capsule	Seals the joint and provides stability
Synovial Fluid	Lubricates the joint, reduces friction and provides nutrients to the joint
Synovial Membrane	Secretes synovial fluid
Bursae	Acts as a cushion between bone and the tendons/muscles

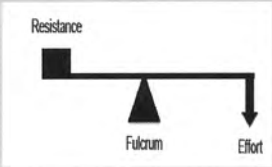
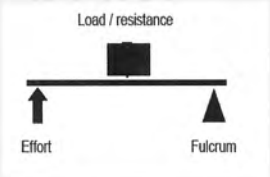
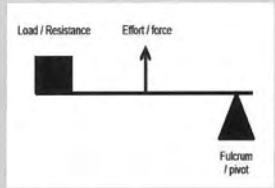
Joint Action	Definition
Flexion	The decreasing of the angle at a joint.
Extension	The increasing of the angle at a joint.
Rotation	The movement of a limb around the long axis.
Circumduction	The movement of a limb in a circular motion.
Abduction	The movement of a limb AWAY from the midline of the body.
Adduction	The movement of a limb TOWARDS the midline of the body.
Plantar Flexion	The increasing of the ankle joint (pointing of the toes downwards).
Doris Flexion	The decreasing of the ankle joint (bringing the toes upwards towards the shin).

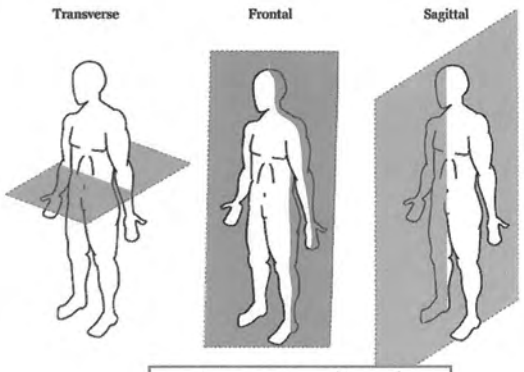
Type of Muscular Contraction	Definition	Example
Isometric	The muscle stays the same length as it contracts resulting in the body staying still	Handstand, plank (No movement occurs)
Isotonic CONCENTRIC	The muscle SHORTENS as it contracts resulting in movement.	Flexion at the elbow in the biceps during the execution phase of a bicep curl.
Isotonic ECCENTRIC	The muscle LENGTHENS as it contracts resulting in movement.	Quadriceps during the downward phase of a squat during flexion at the knee.

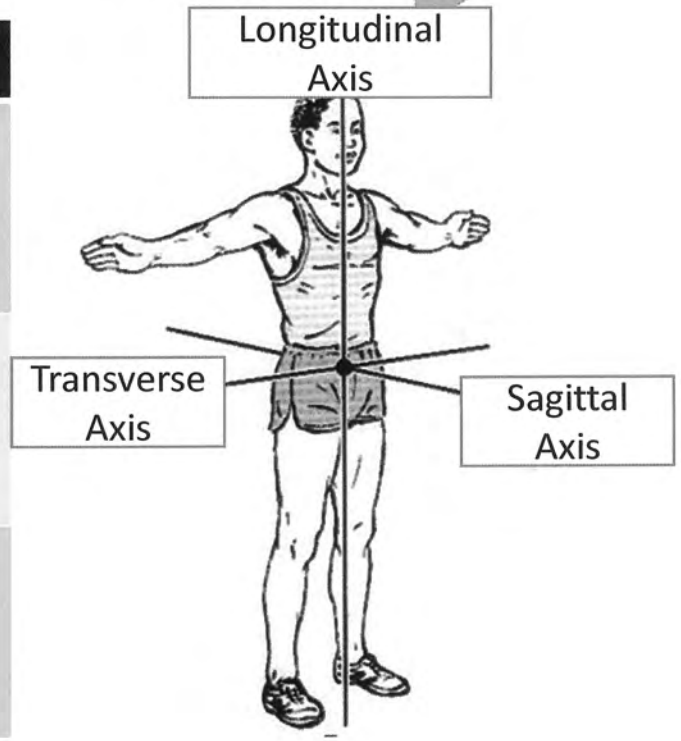
Muscles, Movement and Joints

Planes, Axes and Levers

Planes	Axes	Joint Action	Sporting Examples
Sagittal	Transverse	Flexion and Extension, Plantar flexion and Dorsi flexion	Front somersault/forward roll
Frontal	Sagittal	Abduction and Adduction	Cartwheel.
Transverse	Longitudinal	Rotation	360° twist (ice skating spin)/discus thrower rotating in circle effort

Lever Class	Middle	Diagram	Joint Action	Sporting Example	Mechanical Advantage (effort arm / resistance arm)
1st	Fulcrum		Extension at the elbow	Throw in/chest pass (extension at the elbow)	No mechanical advantage
2nc	Load		Plantar flexion at the ankle	Long jump take off/sprint start	Bigger effort arm = lift greater load
3rd	Effort		Any other joint action	Kicking ball	Bigger resistance arm = quicker





Respiratory System and Blood Vessels

Blood Vessels	Structure	Functions	Relevance
Arteries	• Thick muscular and elastic walls. • Small internal diameter (lumen)	• Carry blood at high pressure away from the heart. • Mainly carry oxygenated blood (exception: pulmonary artery carries deoxygenated blood to lungs from heart)	Blood pressure increases during exercise. Muscles in the artery walls contract and relax automatically. When the muscles relax, the arteries dilate.
Capillaries	• Very thin walls (only one-cell thick) • Small internal diameter	• Link smaller arteries with smaller veins • Carry blood at a very low pressure.	Capillaries allow gaseous exchange. Walls are very thin to allow gases and nutrients to pass through them.
Veins	• Thin walls • Large lumen (internal diameter) • Contain valves	• Carry blood at a low pressure towards the heart • Mainly carry deoxygenated blood	The wide internal diameter allows blood to pass through easier. The valves help return the blood to the heart by preventing backflow due to low pressure.

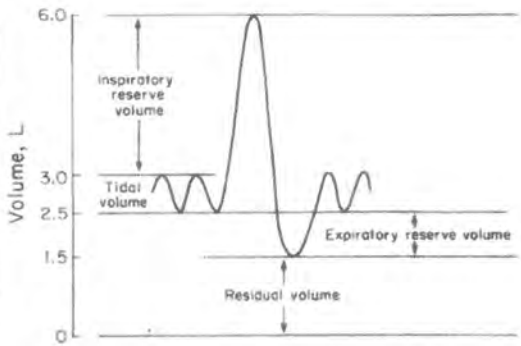
Spirometer Trace	Description	Explanation
Spirometer Trace	• A machine that is used to measure lung volumes.	• As the individual breathes in and out a line is drawn by a spirometer, showing the depth and rate of breathing. This is called a spirometer trace.

Mechanics of breathing	Inhaling and exhaling during exercise
Mechanics of breathing	Are the same at rest. The breathing rate and depth increases.
During Inspiration	The pectoral and sternocleidomastoid increase the capacity of the lungs (maximising oxygen intake).
During Expiration	The rib cage is pulled down quicker, due to the use of the abdominal muscles, which forces the air out faster.

Lung Volumes	Definition
Lung Volume	• The capacity of the lungs. (how much air they can hold)
Tidal Volume	• The amount of air inspired (inhaled) or expired (exhaled) in a normal breath. • When the body is at rest, breathing is slower than when exercising. • **During Exercise -** You need to get more oxygen into the lungs so it can diffuse into the blood stream. You need to breathe out the additional CO_2 produced during exercise.
Inspiratory reserve volume	• The extra amount of air that can be forcibly breathed in, in addition to tidal volume.
Expiratory reserve volume	• The additional amount of air that can be forcibly breathed out, in addition to tidal volume.
Residual volume	• The amount of air that always remains in the lungs, even after the forced maximal exhalation.

Mechanics of breathing	Inhaling and exhaling at rest. Explanation during Inspiration
Intercostal muscles	The intercostal muscles contract, raising the rib cage
Diaphragm	Flattens
Chest Cavity	Volume increases, reducing the pressure in the lungs causing the air to rush in.

Mechanics of breathing	Inhaling and exhaling at rest. Explanation during Expiration
Intercostal muscles	Intercostal muscles contract, lowering the rib cage.
Diaphragm	Rises
Chest Cavity	The volume in the chest cavity decreases, increasing air pressure in the lungs forcing air out.



Injury prevention	Reason
Complete a warm up	• Increase the temperature in the muscles, tendons and ligaments. • Increases elasticity • Help prevent a pull or strain
Avoid overtraining	Training too hard = adaptations will not occur For example: When weight training ensure you use the appropriate weight.
Wear appropriate clothing and footwear	Example: • Non-slip training shoes, to avoid twisting an ankle by slipping during a training session. • Gum shields, to help protect teeth in impact activities such as rugby • Shin pads, to reduce the impact if hit by the stick in hockey.
Taping/bracing	Provides additional support to joint, muscles or tendons. Examples: • Taping the ankle to avoid a twisted ankle. • Ankle bracing to reduce the risk of ankle injury.
Hydration	Maintain an appropriate level of hydration by drinking water. If hydration levels are not maintained you can become dehydrated, leading to dizziness and nausea.
Avoid overstretching	Stretches should be completed carefully without overstretching or bouncing, this can result in muscle strain.
Correct technique	• Ensures better results • Helps avoid injury, such as using the correct technique when lifting weights to avoid muscle strain.
Appropriate rest	Make sure there is enough rest days between sessions to allow for recovery.

Seasonal training	Definition	Training includes	Benefits
Pre-season	Preparation phase Period leading up to competition.	• Developing techniques specific to the sport. • General fitness training, such as continuous, fartlek or interval training session to increase aerobic fitness. • Weight training to build up strength and muscular endurance.	• Fitness and skill lost during post-season can be regained. • Skills and techniques can be improved.
Competition season	Peak Playing season	• Taking part in matches every week • Maintenance of fitness related to the activity. • Limited training activity, as it may cause fatigue, which would decrease performance. • Concentration on skills/set plays to improve performance	• Fitness levels and quality of performance can be maintained throughout the season.
Post-season	Transition phase Period of rest, active recovery and light aerobic work after competition season.	• Rest to recover from the competition season, where no training takes place. • Light exercise, to maintain a level of general fitness.	• Athletes are fully restored, ready for pre-season. • Not too much fitness is lost.

High altitude training	Stages of high altitude training	Benefits of high altitude training	Limitations of high altitude training
Anywhere 2000m above sea level or above is considered to high altitude.	• Train at high altitude. • There is less oxygen in the air and oxygen carrying capacity is reduced. • The body compensates by making more red blood cells to carry oxygen.	• Increase red blood cell production. • Increased oxygen. carrying capacity • A greater amount of oxygen being transported to the working muscles once athletes return to sea level.	• Adaptations take time • Expensive to live away from home. • Timing of training for competitions needs careful planning. • Altitude sickness. • Limited/no effect on anaerobic activities, such as sprinting. • Can make it harder to train at the high intensities need for anaerobic activities.

Long Term Effects (after months of regular exercise)	Short Term Effects (24-36 hours after exercise)	Immediate Effects (whilst exercising)
Lower resting heart rate	Nausea	Red, hot, Sweaty
Improved speed, stamina and suppleness	DOMS (delayed onset of muscular soreness)	Increased breathing rate and depth
Cardiac hypertrophy	Dizziness, light headedness	Increased heart rate
Body shape may change	Cramp	
Increase in muscles mass/drop in body fat	Tiredness/fatigue	

Heart, Blood vessels, redistribution of blood, cardiac cycle, Systole/Diastole.

Cardiac Output (Q)	Stroke Volume (SV)	Heart Rate (HR)
The amount of blood ejected from the heart in one minute or stroke volume x heart rate.	The volume of blood pumped out of the heart during one contraction.	The number of times the heart beats per minute

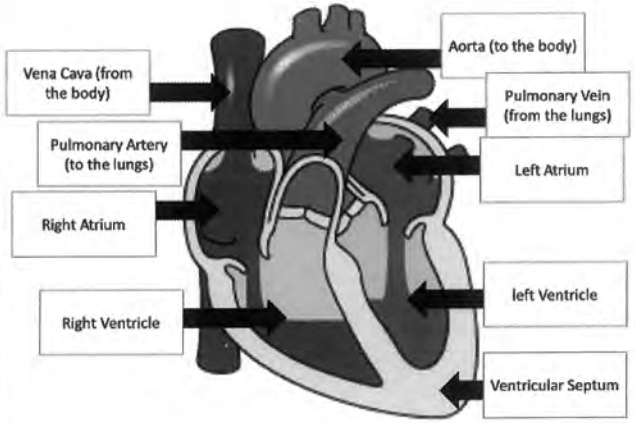
Cardiac Cycle
1 Deoxygenated blood enters the right side of the heart via the **vena cava**
2 Heart contracts and pumps blood to the lungs via the **Pulmonary Artery**
3 Blood becomes oxygenated in the lungs
4 Oxygenated blood returns to the heart via the **Pulmonary Vein** and fills the left side
5 Heart contracts and pumps blood to the body via the **Aorta** to deliver oxygen
6 Deoxygenated blood returns to the heart

Blood vessels	Arteries	Veins	Capillaries
Structure	• Thick muscular and elastic walls • Small lumen (internal diameter)	• Thin walls • Contain valves to prevent backflow • Large lumen (internal diameter)	• Very thin walls (1 cell thick) • Small lumen (internal diameter)
Functions	• Carry blood at high pressure away from heart Carries oxygenated blood (except the pulmonary artery) Used in redistribution of blood	• Carry blood at low pressure towards the heart • Carries deoxygenated blood (except the pulmonary vein)	• Allows gaseous exchange – very thin walls allow oxygen and carbon dioxide to pass through • Links smaller arteries with smaller veins • Carry blood at low pressure

Changes in Heart Rate before and during exercise
Before: Increase in heart rate – this is called the **anticipatory rise** due to release of adrenaline.
During: When you start to exercise – Muscles need more oxygen which the blood transports Cardiac output increases by increasing heart rate or/and stroke volume

Cardiac Cycle
The cardiac cycle is the repeated contraction and relaxation of the heart. There are 2 phases: diastole and systole

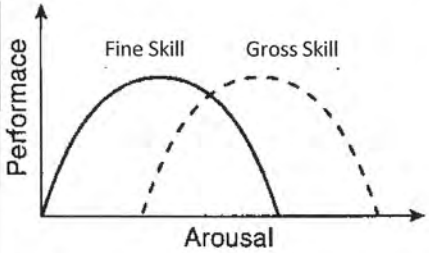
Diastole	Systole (S = squeezes)
When the chamber relaxes and fills with blood	When the chamber contracts and ejects blood

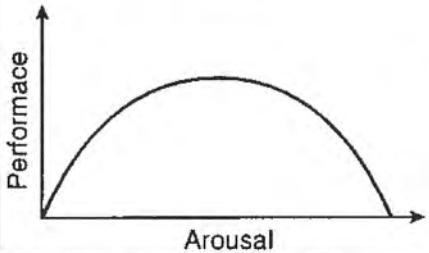


Redistribution of Blood	EG of redistribution of blood	Vasoconstriction	Vasodilation
When you exercise the working muscles need more oxygen. When you exercise – heart rate and stroke volume increase. Blood is diverted away from inactive areas to the working muscles	• During exercise blood can be redistributed away from the stomach (digestive system) to the working muscles.	• Blood vessels are constricted (squeezed) to make them smaller/narrower. • Blood flow reduced to these areas	• Blood vessels are dilated to make them bigger/wider • Blood flow to these areas increased • Supplies more oxygen and nutrients.

Arousal, Personality, feedback, Motivation

Content	Definition
Arousal	A physical and mental state of readiness, varying from deep sleep to intense excitement
Inverted-U theory	Fine movement skills such as a golf putt, where concentration and precise movement is required, need lower levels of arousal Gross movement skills such as a tackle in rugby, where large muscle movements are required, require higher levels of arousal. A beginner will need lower levels of arousal. An expert will need higher levels of arousal
Optimum arousal	The point at which the best, or optimal, performance occurs





Aggression	Is used to deliberately cause harm of injure another person
Direct aggression	An aggressive act that involves physical contact with others to cause harm and to gain an advantage
Indirect aggression	Does not involve physical contact eg. A nasty remark, an act against an object to gain advantage

Stress management	Arousal can be controlled using stress management techniques
Visualisation	Visualise yourself playing well with a successful outcome Visualise yours elf comfortable and stress free
Mental rehearsal	During a warm up, you prepare physically and mentally for the coming activity. During an event the performer goes through a skill or sequence of events they are about to perform.
Positive self talk	Positive self talk helps to develop more positive feeling about your own performance
Deep breathing	Concentrating and taking long, deep breaths helps you to focus on the breathing technique rather than on what is causing the increased anxiety

Personality	is the particular characteristics and behaviour that you generally display
Introvert	A quiet, passive, reserved personality type. Characteristics- shy, quiet, enjoy being on their own. They tend to play individual sports eg, archery as it involves concentration and precision and running as it is low arousal
Extrovert	A sociable, active and talkative personality type associated with team players. Characteristics include- enjoy interaction with others, enthusiastic and talkative. Tend to play team sports where- there is fast pace, concentration may be low and gross skills are used such as rugby scrum

Motivation	The drive to succeed, the desire to achieve something	Evaluation of motivation
Intrinsic motivation	The drive that comes from within you. It is when you are driven to perform well out of a personally feeling of pride and satisfaction.	Intrinsic motivation is more effective and will lead to continued effort.
Extrinsic motivation	The drive to perform well or to win in order to gain external rewards from an other source or person. Examples would be prizes, trophies, medals and money and praise. Extrinsic motivation can be tangible or intangible. Tangible is rewards you can touch such as trophies, medals and certificates. Intangible rewards you cant touch, such as praise feedback and applause.	Extrinsic motivation can lead to feelings of pride which is associated with intrinsic motivation. Over use of extrinsic motivation can reduce intrinsic as you become reliant on rewards

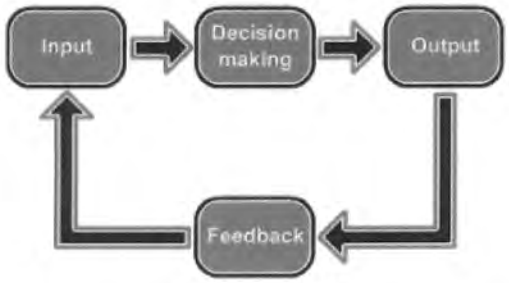
Goal Setting, Information processing, Feedback, Guidance

Goal Setting	Definition	Sporting Example
Performance Goals	Performance goals (personal performance/no social comparison)	Perform 3 successful serves a game
Outcome Goals	Outcome goals (winning/result).	Win the 100m race

SMART Goals	Definition
Specific	Specific to the sport or fitness goal
Measurable	Able to measure any improvements
Accepted	Accepted by performer and coach
Realistic	The performer can actually achieve it
Time Bound	Needs to be completed over a period of time

Types of Guidance	Definition	Who it is good for	Example
Visual	The performer seeing someone else perform the skill or action.	Beginners and Elite	Watching a teacher demonstrate a handstand
Verbal	The performer being told and hearing what to do form a coach or teacher.	Beginners and Elite	Simple instructions needed for beginners, mixed with visual.
Manual	Where a coach or teacher physically moves the student into the correct position.	Beginners	Teacher supporting a balance in gymnastics
Mechanical	Use of an object or training aid to support the performer.	Beginners	Use of harness in trampolining.

Basic Information Processing Model	Role of this stage	Sporting Example (Tennis)
Input	Information from the display (senses), selective attention.	Seeing the pace, height and spin on a serve.
Decision Making	Selection of appropriate response from memory. The role of long term and short term memory.	Selecting what shot to play in return to a serve.
Output	Information sent to muscles to carry out the response.	Bicep, Tricep, Deltoid to carry out a forehand return
Feedback	Received via self (intrinsic) and/or others (extrinsic).	Intrinsic, how did it feel on the racket. Extrinsic, did the shot go in.



Types of Feedback	Definition	Example
Intrinsic	Feedback from within, for example kinaesthetic feel. (Elite performers develop ability to interpret sensory information)	How the shot felt as you hit the ball.
Extrinsic	Feedback from an external source e.g. coach/teacher/peers (Beginners rely heavily on this feedback)	The coach telling you what you did well and what to improve on.
Positive	(Important for beginners) – Inform athletes what was correct about movement. Important for motivation.	Coach or teacher saying good shot.
Negative	(Important for elite) - Inform athlete what was incorrect about movement. Must provide information on how to improve.	Coach or teacher saying what athlete needs to improve on.
Knowledge of Results (KOR)	Feedback about the outcome. (Beginners need this feedback more)	Did the shot go in, what distance did you throw.
Knowledge of Performance (KOP)	Feedback about the quality of performance, for example technique. (Elite performers)	What went well or wrong with the technique of the serve.

Health, Fitness, Sedentary Lifestyle, Obesity, Diet and Somatotypes

Health and Fitness	Definition	Benefits
Health	A state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity	
Mental Health	. Cope with stresses of everyday life . Work productively . Contributes to community	. Reduced stress/ tension . An increase in serotonin . Greater ability to control emotions
Physical Health	. Body systems work well . No illness/injury . Can carry out everyday tasks	. Improved heart function . Improve efficiency of body systems . Reduced the risk of some illness . Ability to do everyday tasks . Avoidance of obesity
Social Health	. Basic human needs met . Has friendships and support . Confident socially	. Meet new people . Opportunities to get together with existing friends . Improve cooperation skills . Increased social activities (reduced risk of engaging in antisocial behaviour)
Fitness	The ability to meet/cope with the demands of the environment.	. Improved fitness . Reduced chances of injury . Supporting physical ability to work

Sedentary Lifestyle: Definition	Consequences of a sedentary lifestyle
A lifestyle with little or irregular physical activity	. Obesity/ excessive weight gain . Heart disease . Hypertension (high blood pressure) . Type 2 diabetes . Poor sleep . Poor self-esteem Lethargy (lacking energy)

Ectomorph (marathon, HJ)	Endomorph (prop)	Mesomorph (sprinter)
Low % of muscles mass	Low % of muscles mass	High % of muscles mass
Low % of body fat	High % of body fat	Low % of body fat
Tall and thin	Pear shaped body	Wedge shaped back
Narrow hips and shoulders	Narrow shoulders and broad hips	Broad shoulders and narrow hips
Long arms and legs		

Component	Benefit
Carbohydrates (55-60%) pasta, bread and rice	Complex – slow release of energy Simple – quick release of energy
Protein (15-20%) meat, eggs, fish	Growth and repair of muscles tissue
Fats (25-30%) nuts, seeds, oils	Energy for low intensity exercise
Fibre - cereals	Aid the digestive system
Vitamins – vitamins D - oranges	General health and immune system
Minerals – potassium- banana	General health and immune system
Water	Hydration

Obesity Definition	Effect on performance in physical activity and sport	Impact on health (physical)	Impact on health (mental)	Impact on health (social)
A term used to describe people with a large fat content, caused by an imbalance of calories consumed to energy expenditure. A body mass index (BMI) of over 30 or over 20% above standard weight for height ratio.	Limits cardiovascular endurance Limits flexibility Limits agility Limits speed/power	. Cancer . Heart diseases . Diabetes . High cholesterol	. Depression . Loss of confidence	. Inability to socialise . Inability to leave home

Commercialisation

Impact on performer		Impact on official		Impact on spectator		Impact on sponsor		Impact on Sport	
Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
-Can train full time. -paid millions to endorse products -equipment to aid performance	-withdrawal of sponsorship can cause financial difficulties -increased pressure to win -no privacy -restricted to sponsors clothing/ equipment	-sponsor can provide kit -media support correct decisions -can become a role model	-poor decisions highlighted, which undermine official -have to wear the sponsors logo	-more money in sport = more events -teams play at higher standard due to funds available – increases excitement levels -quality of facilities increases (new stadiums) -improved technology at home and in stadiums (instant replays)	-more emphasis on sponsors could mean more breaks for adverts -less tickets available as more are given to sponsors -expensive team merchandise regularly changing -kick off times dictated by sponsors -expensive to watch (subscriptions) -less people watching live due to watching at home	-Name linked with sporting success -advertised to wider audience -increased income	-scandal in sport could reflect poorly on sponsor -lack of success may reflect poorly	-increased funds, where they can improve facilities, coaching and structure of sport -sports adapted to become more entertaining for spectators e.g. T20 -sports and leagues can attract top players due to increased finances e.g. IPL	-sport becomes slaves to sponsors -minority sports get less sponsorship so struggle to grow -sponsors might not be appropriate e.g. McDonalds

Reasons for Sponsoring	Recipients of Sponsorship	Types of Sponsorship
Publicity = increased sales	Teams (O2 England Rugby)	Equipment
Association with success	Individuals (Nadal Nike)	Clothing
Support (local community)	Events (London Marathon Virgin)	Transport/Travel
Tax Deductible (lower tax bill)	Sport (The FA Vauxhall)	Entry Fees and Expenses
		Training/facilities

The 'golden triangle'

" The financial relationship between sport sponsorship and media."

PROFIT!

Key Word	Definition
Commercialisation	The process by which a new product is introduced to the market in a way designed to make a profit.
Media	The main ways in which people communicate (TV, radio, newspapers, social media, internet)
Sponsorship	Where a company pays money to a team/individual in return for advertising their goods.

Pathway of Air and Gaseous Exchange

The pathway of air	Explanation
The pathway of air	Enters the body through the mouth and nose. Then travels down through the trachea to the lungs.
Trachea	Rings of cartilage surround the trachea. These help the trachea to keep its shape and prevent collapse, so allowing the air to pass through to the lungs.
Lungs	Two lungs left and right. Allow movement of the air in and out of the body (ventilation). Air enters the lungs during inspiration (the process of breathing in) Air leaves the lungs during expiration (the process of breathing out)
Bronchi	The air travels to each of the lungs via the bronchi.
Bronchioles	The passages that the air travels down get smaller as the bronchi subdivide. These branch out throughout the lungs and carry the air from the bronchi to the alveoli.
Alveoli	Tiny air sacs. Attached to the branches of the bronchioles throughout the lungs. The exchange of oxygen and carbon dioxide occurs.

Gaseous Exchange	Explanation	Process	Features that assist
Gaseous Exchange	Gases always move from high to low areas of concentration.	• Oxygen diffuses into the bloodstream from the alveoli in the lungs. • The oxygen then binds with the haemoglobin in the red blood cells to form oxyhaemoglobin. • Oxyhaemoglobin is transported to the working muscles. • Carbon dioxide produced in the tissue is transported away from the muscles by the haemoglobin.	• Large surface area of alveoli • Moist thin walls (one cell thick) • Short distance for diffusion (short diffusion • Pathway) • Lots of capillaries • Large blood supply • Movement of gas from high concentration to • Low concentration.
Alveoli	Tiny air sacs with moist, thin walls (only one-cell thick)	• The capillaries surrounding the alveoli have a low concentration of oxygen. • Oxygen moves from high concentration to low, through the thin walls of the alveoli and capillaries.	
Capillaries	Thin, tiny blood cells. Only one cell thick.	• Capillaries surrounding the alveoli have a high pressure of CO2. • Alveoli have low pressure of CO2 • CO2 is moved out of the blood into the alveoli to be breathed out.	

Component of Fitness	Definition	Sporting Example	Test
Flexibility	The range of movement possible at a joint.	Splits at the hip in gymnastics	Sit and Reach Test
Strength	The ability to overcome a resistance. (Static, dynamic, maximal, explosive)	S – Scrum D - Pommel Horse M - 1 Rep max E - Shotput	One rep max Hand grip dynamometer
Cardio-Vascular Endurance	The efficiency of the heart and lungs to supply oxygen to the working muscles.	Marathon	Multi-Stage fitness Test
Power	A combination of a maximum amount of strength and speed.	Take off in vault in gymnastics	Sergeant/vertical jump test
Speed	The rate at which an individual can cover a distance/perform an action.	100m Sprint	30m sprint test
Agility	The ability to change direction quickly with control.	Dribbling in football	Illinois agility test
Balance	The maintenance of the centre of mass over the base of support (static, dynamic)	S – handstand in gymnastics D - slalom skiing	Stork stand test
Co-ordination	The ability to move 2 or more body parts smoothly and efficiently (hand-eye, foot-eye, arm-leg).	HE – Catching FE – passing in football AL – running	Wall Toss Test
Reaction Time	The time to taken to initiate a response to a stimulus.	Start of the 100m (gun)	Ruler Drop Test
Muscular Endurance	The ability of a muscle/group of muscles to undergo repeated contractions avoiding fatigue.	Long distance cycling	Sit up bleep test

Training Type	Explanation	Positives	Negatives
Weight Training	Form interval training using weights, involves set and reps, provides resistance for muscles to work against	Develops strength, power and muscular endurance	Requires specialist equipment.
Fartlek Training	Training without rest but varying the intensity and/or terrain.	Closely relates to invasion games	Requires motivation
Circuit Training	Working at 8-12 different stations for set period of work or set period of time	Can be easily adapted to develop any skill, sport or components of fitness.	Requires equipment
Plyometric Training	Jumping, bounding or hopping (eccentric – concentric – eccentric)	Develops power	Can cause injury
Continuous Training	Working at a moderate intensity without stopping for at least 20 minutes in the aerobic training zone (6-80% of MHR)	Develops cardio-vascular endurance	Can be boring
Interval Training (HIIT)	Period of work followed by period of rest and repeat.	No equipment is needed	Can be repetitive/boring
Static Stretching	Stretching the muscles of the body for at least 30 seconds on each stretch.	Develops flexibility	Takes a long time to do the whole body

Principles of Progressive Overload	Explanation
Frequency	How many times you train.
Intensity	How hard you train
Time	How long you train for
Type	What type of training you do.

Principle of Training	Explanation
Specificity	Training needs to specific to the sport and the performer
Progressive Overload	Gradual increase of demands on the body
Reversibility	If training stops then gains will be lost
Tedium	Training needs to be different to prevent boredom.

Training Zone	Definition	Equation	Intensity and Time
Aerobic Training Zone	Respiring in the presence of oxygen	Glucose + Oxygen = Carbon Dioxide + Water + Energy	Moderate intensity (60-80 of MHR) Up to 2 hours – marathon
Anaerobic Training Zone	Respiring without the presence of oxygen	Glucose = Energy + Lactic Acid	High Intensity (80-90% of MHR) Up to 30 seconds – 100m Sprint

Skills and Ability

Type of Skill	Define/Describe	Sporting Examples
Open Skill	• Changing or unstable environment, • usually different every time it is performed • Affected by people around you (opponents or team mates).	Passing (invasion games)
Closed Skill	• Stable environment, • usually the performed the same way every time, • Unaffected by others (opponents or team mates).	Free throw (basketball)
Basic Skill	• Simple, • requires little thought or decision making, • Tend to be taught as a beginner/learnt quickly.	running (marathon)
Complex Skill	• Difficult, • require high levels of thought and concentration, • Can take time to master, require a lot of decision making.	Double front somersault (gymnastics)
Self-Paced Skill	• Start of skill is controlled by the performer, • speed is controlled by the performer, • Performer decides when to do the skill.	Javelin (athletics)
Externally Paced Skill	• Start of skill is controlled by external factors (opponents/team mates), • speed is controlled by external factors, • External factors influence when to do the skill.	Saving a penalty (football),
Gross Skill	• Whole body movements, • involves large muscles groups, • Movements tend not to rely on precision and accuracy.	Tackle (rugby)
Fine Skill	• Small, precise movements, • involves the use of small muscle groups, • Movements tend to involve precision and accuracy.	Net shot (badminton)

Key Word	Definition
Ability	An inherited stable trait that determine an individual's potential to learn or acquire a skill.
Skill	A learned action or behaviour with intention of bringing about expected results, with maximum certainty and minimum outlay of time and energy.

Technology

Impact on performer and sport		Impact on official		Impact on spectator		Impact on sponsor	
Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
. Improved equipment for improved performance and safety . Better facilities . Better decisions by officials	. Costs of equipment increase . Repairs can be expensive . Technology can go wrong/be inaccurate . People can watch at home	. Less chance of errors e.g. be able to review replays or use TMO to provide additional help to reach the right decision . Wifi allows for improved communication with, for example, officials and technicians	. Become reliant on technology . It can go wrong . Highlights officials errors . Decisions are challenged more owing to loss of respect for officials judgment	. Multiple viewing platforms . Better picture and sound, creating a better viewing experience . Interactive options	. Breaks in play waiting for decisions can be boring . The technology changes the nature of the sport . Pay to view some sports and tv channels . Technology is expensive (3D TVs) . Don't experience the excitement of a live game	. Easier to see logos owing to enhanced viewing quality . More coverage = more opportunity to see the product . Advertising opportunities during breaks on TV . Better standard of play using improved equipment encourages more sales	. They need to provide more funding so supported teams/players can purchase the best equipment and access to medical support. . Sponsored players may be found cheating, which reflects badly on the sponsor.

Spectator Behaviour and Hooliganism

Positives of spectator	Negatives of Spectators	Reasons why hooliganism occurs	Strategies to prevent hooliganism
Creation of atmosphere	Increased pressure – performance level decreases	Rivalries	Early kick off times
Home-field advantage	Crowd trouble/hooliganism	Hype	All seater stadia
	Safety costs/concerns	Fuelled by alcohol/drugs	Segregation of fans
	Negative effect on participation of young performers	Gang culture	Improved security
		Frustration at officials decisions	Alcohol restrictions
		Display of masculinity	Travel restrictions/banning orders
			Educational campaigns

Conduct of Perfumers	Definition	Example
Sportsmanship	Payers display good etiquette and abide by the contract to compete.	Shaking hands, kicking the ball out if someone is injured
Etiquette	Unwritten rule in an activity. It is not enforceable but usually observed.	Apologising for a net call in tennis
Gamesmanship	The bending/stretching of the rules to gain an unfair advantage.	Time wasting or sledging
Contract to Compete	An agreement to follow and abide by the written and unwritten rules and to give 100% effort.	

Social Groups	Gender	Religion/race/culture	Age	Family	Disability
Attitudes	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.	Racial discrimination in some sports still exists which may be an inhibiting factor to some races' involvement in that sport.	Some elderly people do not consider it appropriate to take part in physical activity.	People are influenced by others' attitudes. If a parent has a negative attitude towards sport, it is likely to be an attitude that a child holds when they grow up.	Some disabled people may not feel that they are capable of being physically active.
Role models	The lack of female role models has a negative impact on participation.	Sport has seen an increase in role models from diverse backgrounds, which increases participation in those sports. However, some sports have fewer role models, e.g. there are few black swimmers.	Most role models are young which can have a negative impact on elderly participation.	Members of your family can be seen as role models and encourage certain behaviours such as participation in sport.	Some sports have a lack of disabled role models; however, recent Paralympic Games have increased the number of disabled role models which has driven up participation rates.
Accessibility	There may be a lack of opportunity for some females to access certain sports, such as female rugby teams.	Restrictions, such as not being allowed to drive on the Jewish Sabbath, can impact on participation in sport on religious days.	It can be harder for elderly people to access facilities if they are unable to walk / take public transport.	Family members can provide transport for each other in order to increase the accessibility to training and matches.	Some facilities do not have the provisions required by disabled individuals.
Media coverage	Female sport receives less media coverage, which negatively impacts on participation.	Sports that do not receive media coverage will be disadvantaged and may impact participation rates of all groups.	Most media coverage focuses on young professional athletes which may discourage older individuals from participating.		Disabled sport receives less media coverage which negatively impacts on participation.
Stereotyping	Gender stereotyping still exists with 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.	The stereotypical idea that some races are suited to certain sports can prevent people from trying different sports.	Stereotypes about activities which are appropriate for elderly people may prevent them from being active.		Stereotypes about what sports are appropriate for disabled athletes may prevent them from taking part in physical activity.
Culture		Traditional views, such as women having to wear certain clothing, can restrict participation in some sports.		Families create a culture which either encourages or discourages other family members from being physically active.	
Family commitments	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.	Some cultures value spending time with the family very highly. As a result, there is likely less time available to be physically active.	Older individuals may have more commitments, such as looking after children, which restricts participation.	Parents may not have enough time to be physically active due to the need to look after their children. Additionally, other family commitments may stop parents being able to take their children to training.	Some disabled individuals may require assistance from their family in order to allow them to participate in physical activities.
Leisure time	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.	Some individuals may have less leisure time to take part in physical activity due to religious commitments, such as attending services and prayer.	The young and old are likely to have more free time than middle-aged working adults.	Different members of the family will have different amounts of leisure time which will influence their engagement. Working parents will have less time.	A disabled athlete's leisure time may depend on their family, especially if they require full support to participate.
Education	The compulsory inclusion of Physical Education in the National Curriculum in schools means both genders are exposed to physical activity.			Families can educate each other about the benefits of physical activity, which increases participation.	If people are educated about disabled sport, they will be more likely to take part.
Disposable income	The wage gap between men and women is no longer as prominent, providing women with greater opportunities to take part in physical activity.		Young people may not have enough money to pay membership fees for gyms or registration fees for teams.	Different members of the family will have different amounts of disposable income which will influence their engagement.	If a disabled person is unable to work, they may not have the disposable income to participate in sport.
Adaptability		Some sports make rule changes to accommodate religious practices, such as Muslim women being allowed to cover their heads when playing football.	Sports can be adapted in order to make them suitable for young and elderly athletes.		Sports can be adapted in order to make them suitable for disabled athletes.

Q1.

Using a team sporting activity of your choice (e.g. football, hockey), evaluate how appropriate it would be for a performer to use a mixture of interval training **and** weight training.

(Total 9 marks)

Q2.

John is extremely tall and thin. His father is encouraging him to join a local basketball club.

Evaluate whether or not basketball is a suitable activity for John to take part in.

(Total 6 marks)

Q3.

In preparation for an important event, a marathon runner may train at altitude.

Evaluate the effectiveness of altitude training as a way to improve the performance of a marathon runner.

(Total 6 marks)

Q4.

With reference to a named sporting activity, outline what plyometric and fartlek training are, and justify why they are both relevant to performers in that activity.

(Total 9 marks)

Q5.

Using the stages of the information processing model, analyse how a performer hits a ball or shuttlecock in a racket sport of your choice (for example squash, tennis or badminton).

(Total 6 marks)

Q6.

Using your knowledge of agility and reaction time, evaluate the importance of these components of fitness for performers in the 100m sprint.

(Total 6 marks)

Q7.

Evaluate how appropriate an ice bath may be to aid the recovery of a performer immediately after a game of badminton.

(Total 6 marks)

Q8.

Athletes use knowledge of training seasons, training zones and other factors to ensure that they are in peak condition for a major event, such as the Olympic Games.

Analyse how a 1500m runner would plan their training year before a major event.

(Total 9 marks)

Q9.

Hooliganism is often associated with the game of football.

Evaluate the effectiveness of strategies that are being used to combat hooliganism at football matches.

(Total 6 marks)

Q10.

Hawkeye is an example of technology used in tennis.

Evaluate the use of technology in sport in relation to its effect on spectators **and** on **performers**.

(Total 9 marks)

Q11.

Aisha is currently studying for her GCSEs. Her school report has been sent home to her parents and highlights that her PE teacher is worried about her lack of interest in taking part in physical activity inside and outside of school. Her parents are also disappointed as they have regularly encouraged her to join a sports club.

Identify potential factors that could have caused Aisha's lack of interest in sport, justifying your choices.

(Total 9 marks)

Q12.

Sport has become commercialised due to its relationship with sponsorship and the media.

Evaluate the impact that the media and sponsorship have had on sports performers.

(Total 9 marks)

Q1.

[AO1 = 2 AO2 = 2 AO3 = 5]

Level	Marks	Description
3	7-9	Knowledge of interval and weight training is accurate and generally well detailed. Application to a named team sporting activity is mostly appropriate, clear and effective. Evaluation is thorough, reaching valid and well-reasoned conclusions for both training types. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	4-6	Knowledge of interval and weight training is evident but is more detailed for one than the other. There is some appropriate and effective application to a named team sporting activity, although not always presented with clarity. Any evaluation is clear but reaches valid and well-reasoned conclusions for one training type more than the other. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1-3	Knowledge of interval and weight training is limited. Application to a named team sporting activity is either absent or inappropriate. Evaluation is poorly focused or absent, with few or no reasoned conclusions for either training type. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of interval training and weight training, e.g.
- Knowledge of the two training types
- Interval training involves periods of work and rest
- Interval training can be altered / manipulated to meet specific fitness aims
- Often called High Intensity Interval Training
- Weight training can be used to develop muscular strength or endurance
- Weight training involves sets and reps

AO2 – Application to a team sporting activity, e.g.
- Application to an appropriate named sport, e.g. volleyball, football, netball
- Volleyball – Intermittent training that involves periods of work / rest, thus mimicking the demands of volleyball, i.e. not continuous
- High intensity periods can mimic the intensity of a rally
- Weight training can work on muscular endurance and / or muscular strength. Volleyball player would be more likely to work on both muscular strength / power, e.g. to jump and muscular endurance to match muscular demands from a long match
- Muscles worked / weights / weight training can be tailored to target training on the muscles required for volleyball

AO3 – Analysis / evaluation of the appropriateness of a performer using a mixture of interval training and weight training in a team sporting activity, e.g.

- Tedium / boredom may be prevented by using two types of training thus increasing motivation levels to train
- Both types of training can be adapted / tailored to the demands of the activity so therefore both appropriate
- Most team sports are played for a long duration and therefore cardiovascular endurance may be more beneficial
- HIIT requires intense periods of work and this is not always mimicked within the sport, e.g. volleyball setter
- There has to be a suitable balance between HIIT and weight training, i.e. over use of weight training may result in a loss of speed (or equivalent) due to excess bulk
- Reasoned conclusions could judge that both are appropriate but other methods may also be required, e.g. plyometric training for power

Credit other suitable response relevant to the question.

Max 9 marks

[9]

Q2.

[AO1 = 1 AO2 = 2 AO3 = 3]

Level	Marks	Description
3	5-6	Knowledge of somatotypes is accurate and generally well detailed. Application to a performer in basketball is mostly clear and effective. Discussion is thorough, reaching valid and well-reasoned links to John's suitability to playing basketball. The answer is generally clear, coherent and focused, with appropriate use of terminology
2	3-4	Knowledge of somatotypes is evident but is more detailed for some than others. There is some appropriate and effective application to a performer in basketball, although not always presented with clarity. Any discussion is clear reaching valid and well-reasoned links to John's suitability to playing basketball. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1-2	Knowledge of the stages of somatotypes is limited. Application to a performer in basketball is either absent or inappropriate. Discussion is poorly focused or absent, with few or no reasoned links to John's suitability to playing basketball. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of somatotypes, e.g.
- Knowledge of somatotype, i.e. ectomorph
- Likely to have a low fat content

AO2 – Application to a performer in basketball, e.g.
- Ectomorphs are often seen playing basketball
- In basketball, height is a key component as you are closer to the height of the basket
- Less likely to have shots blocked if tall

- Need to be able to reach to catch the ball / rebound

AO3 – Analysis / evaluation of John's suitability to playing basketball, e.g.

- It does provide a distinctive advantage so would be a good sport to try
- Being tall is not enough on its own to be good at basketball
- You also need specific skills, e.g. dribbling
- Not all players are tall that have been elite
- Argument that mesomorph body type is equally important to have the muscular strength to play basketball
- John may be better combining some muscle bulk to his naturally ectomorph frame to increase his chances of success
- John may simply not like the sport so his body type is irrelevant

Credit any other suitable responses to the question.

Max 6 marks

[6]

Q3.

[AO1 = 1 AO2 = 2 AO3 = 3]

Level	Mark	Description
3	5-6	Knowledge of altitude training is accurate and generally well detailed. Application to a marathon runner is mostly clear and effective. Evaluation is thorough, reaching valid and well-reasoned conclusions as to the effectiveness of altitude training in improving performance. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	3-4	Knowledge of altitude training is evident. There is some appropriate and effective application to a marathon runner, although not always balanced and presented with clarity. Any evaluation is clear but the links to the effectiveness in improving the performance of a marathon runner is not always balanced or well-reasoned. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1-2	Knowledge of altitude training is limited. Application to a marathon runner is either absent or inappropriate. Evaluation is poorly focused or absent, with few or no reasoned links to the effectiveness of altitude training in improving performance in marathon running. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of altitude training

- Carried out at high altitude / over 2000m / 8000ft above sea level / usually for at least 30 days / a month
- There is less oxygen at altitude so less oxygen available to the muscles
- Body compensates by making more red blood cells / homeostasis
- Oxygen carrying potential therefore increases

AO2 – Application to a marathon runner

- Marathon running is an aerobic event / long duration and low intensity
- The more red blood cells a marathon runner has, the more oxygen they will be able to deliver to the muscles
- Their body is therefore more efficient at carrying oxygen / increase in cardio-vascular endurance

AO3 – Evaluation of the effectiveness of altitude training in improving performance of a marathon runner

- Altitude training is an effective way of improving performance in the marathon as the body will have increased the oxygen carrying capacity which means the athlete will be able to run at a high intensity for longer
- These effects will be the most significant when the athlete competes at sea level where oxygen levels are higher and the athlete is able to use all of the red blood cells to carry oxygen
- Giving them an advantage over their competitors
- When training at altitude, detraining can occur as training at a high intensity is difficult due to the lack of oxygen
- Fitness may be lost
- Altitude sickness can occur which may prevent the athlete from training therefore reducing performance
- Psychological issues associated with training in unfamiliar surroundings / being away from home could mean they underperform
- Other methods available that give the same results – hypoxic tents / oxygen tents / train high live low
- Benefits can be lost relatively quickly so increased performance may only be for a short time.

Max 6 marks

[6]

Q4.

[AO1 = 2 AO2 = 2 AO3 = 5]

Level	Marks	Description
3	7 – 9	Knowledge of plyometric and fartlek training is accurate and generally well detailed. Application to a named sporting activity is mostly appropriate, clear and effective. Justification is thorough, reaching valid and well-reasoned conclusions for both training types. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	4 – 6	Knowledge of plyometric and fartlek training is evident but

		is more detailed for one than the other. There is some appropriate and effective application to a named sporting activity, although not always presented with clarity. Any justification is clear but reaches valid and well-reasoned conclusions for one training type more than the other. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1 – 3	Knowledge of plyometric and fartlek training is limited. Application to a named sporting activity is either absent or inappropriate. Justification is poorly focused or absent, with few or no reasoned conclusions for either training type. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

Indicative content linked to Netball but can be applied to any named sporting activity.

AO1 – knowledge of plyometric training and fartlek training, e.g.

- Plyometric training – type of training designed to improve power (Speed × strength) through bounding / hopping / jumping, etc
- Fartlek training – periods of fast work with intermittent periods of slower work, often running, e.g. sprint, jog, walk, jog, etc

AO2 – application to named sporting activity (must include links to the activities chosen), e.g.

- (Netball) as a sport requires lower body power to jump/ sprint/ upper body power to throw the ball
- (Netball) as a sport involves running at different speeds, e.g. sprint, jog, walk, etc

AO3 – Justifications made with specific reasoned conclusions fully linked and appropriate to named sporting activity, e.g.

- Plyometrics involves jumping which is a vital component of netball to reach for the ball / intercept
- Can mimic many of the other specific movements required in netball (with an example), e.g. double dodge
- Plyometrics can specifically improve leg power which can be vital to netball, e.g. to maintain possession following a rebound
- Plyometrics can specifically improve leg power which can be vital to netball, e.g. to maintain possession following a rebound
- Players can throw from the start of one third to the end of the next (specific rule knowledge) so may need upper body power
- Can easily be included within a netball training session to complement other (named) training types, e.g. continuous training, agility etc
- Plyometrics requires little or no specific equipment – therefore easily integrated into a netball session
- Can be specifically designed / altered for a netball training session, jumping to reach a ball, sprint dodge, quick catch and forceful release, etc
- Plyometrics can be completed by large groups, e.g. a netball squad
- Give some credit for a reasoned response that suggests that power is not the most important component in netball and can be limited in training in favour of other training types which are deemed more important, e.g. agility
- Fartlek training usually involves running and this is a vital component of being able to play netball / accept reverse – very difficult to play whilst still / stationary

- Can mimic many of the specific movements required when playing a match, e.g. sprinting for space
- Netball requires performers to vary intensity in order to outwit opponents, ie reasoned judgement linking change of intensity to outwitting marker /opponents
- Netball tends to use one to one marking and therefore changing intensity is a vital component in order to mark your opposing player who will also change intensity
- Fartlek can easily be incorporated into a netball training session, e.g. sprint / dodge / walk, etc
- Fartlek can be completed on a netball court / sports hall as it requires no specific equipment
- Fartlek can be carried out by a large group, e.g. a netball squad
- Give some credit for a reasoned response that suggests that fartlek training is not the most important training type in netball and can be 'limited / reduced' in training in favour of other training types which are deemed more important, e.g. agility

Credit other suitable responses relevant to the question.

Q5.

[AO1 = 1 AO2 = 2 AO3 = 3]

Level	Marks	Description
3	5 – 6	Knowledge of the stages of information processing is accurate and generally well detailed. Application to a performer hitting a ball/shuttlecock is mostly clear and effective. Analysis is thorough, reaching valid and well-reasoned links to all stages. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	3 – 4	Knowledge of the stages of information processing is evident but is more detailed for some stages than others. There is some appropriate and effective application to a performer hitting a ball/shuttlecock, although not always presented with clarity. Any analysis is clear but reaches valid and well-reasoned links to only some of the stages. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1 – 2	Knowledge of the stages of information processing is limited. Application to a performer hitting a ball/shuttlecock is either absent or inappropriate. Analysis is poorly focused or absent, with few or no reasoned links to any stage. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of the stages of information processing, e.g.
- The stages are input, decision making, output, and feedback

AO2 – Application to a performer hitting a ball/shuttlecock, e.g. tennis
- Input – sight of the ball moving towards the player
- Decision making – which shot to play / movement to make

- Output – shot selected to play
- Feedback – did you play a good shot / hit the ball?

AO3 – Analysis/evaluation of the stages of information processing being used by a performer hitting a ball/shuttlecock, e.g. tennis

- (Input) Information from the display – how is the opponent holding the racket / swinging the racket / how is the ball flying (with spin) / where is the ball after it has landed
- (Input) Selective attention – blocking out everything, e.g. noise / other visual stimuli / other than key focus points above, i.e. the ball
- (Decision making) Selection of appropriate response from memory – have you dealt with this before / have you seen **this** a similar type of shot before
- (Decision making) – Recall of relevant tennis shot from the long term memory / executed by short term memory
- (Output) Information sent to muscles to carry out the response – choice of shot / movement of feet / movement of racket
- (Output) Credit use of appropriate muscles for a tennis shot, i.e. deltoid / pectorals
- (Feedback) Received via self (intrinsic / kinaesthetic) and / or others (extrinsic) – did you hit ball / how did it feel / where did it go / did you misread the ball

Credit other suitable responses relevant to the question. This can relate to any racket sport.

Q6.

[AO1 = 1 AO2 = 2 AO3 = 3]

Level	Marks	Description
3	5 – 6	Knowledge of agility and reaction time is accurate and generally well detailed. Application to performers in the 100m sprint is mostly appropriate, clear and effective. Evaluation is thorough, reaching valid and well-reasoned conclusions for both components of fitness. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	3 – 4	Knowledge of agility and reaction time is evident for both agility and reaction time but is more detailed for one than the other. There is some appropriate and effective application to performers in the 100m sprint, although not always presented with clarity. Any evaluation is clear but reaches valid and well-reasoned conclusions for one component of fitness more than the other. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1 – 2	Knowledge of agility and reaction time is limited. Application to performers in the 100m sprint is either absent or inappropriate. Evaluation is poorly focused or absent, with few or no reasoned conclusions for either component of fitness. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of agility and reaction time, e.g.
- Agility – changing direction at speed, whilst maintaining control
- Reaction time – time taken to initiate response to a stimulus

AO2 – Application to the 100m, e.g.
- 100m sprint does not need agility because it is run in a straight line and therefore changing of direction is not required
- 100m does need reaction time because runners start in a stationary position and have to react to the gun (stimulus) at the start

AO3 – Analysis/evaluation of the importance of agility and reaction time in 100m, e.g.
- Agility – any changes in direction could result in leaving a lane and being disqualified
- Agility – need to change direction is unlikely. However, athlete may change their positioning within their own lane
- Reaction time – 100m is the shortest outdoor sprint event and therefore reaction time at the start of the event is usually crucial to success
- Reaction time – is a major component impacting on overall time taken to complete the 100m sprint
- Reaction time – it is possible to win a race with a poor reaction time start
- Neither agility nor reaction time is as important as speed

Credit other suitable responses relevant to the question.

Q7.

[AO1 = 1 AO2 = 2 AO3 = 3]

Level	Marks	Description
3	5-6	Knowledge of ice baths is accurate and generally well detailed. Application to performers in badminton is mostly appropriate, clear and effective. Evaluation is thorough, reaching valid and well-reasoned conclusions as to the appropriateness of badminton players using ice baths to aid recovery. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	3-4	Knowledge of ice baths is evident. There is some appropriate and effective application to performers in badminton, although not always presented with clarity. Any evaluation is clear but links to the appropriateness of badminton players using ice baths to aid recovery are not always valid and well reasoned. The answer lacks coherence in places, although terminology is used appropriately on occasions
1	1-2	Knowledge of ice baths is limited. Application to performers in badminton is either absent or inappropriate. Evaluation is poorly focused or absent, with few or no reasoned conclusions for the appropriateness of badminton players using ice baths to aid recovery. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of ice baths, e.g.

- A method used for recovery purposes to remove lactic acid / procedures for using an ice bath (Involves sitting in ice cold water for) between 5–20 minutes / physiological explanation

AO2 – Application to badminton, e.g.

- Badminton can be aerobic and anaerobic, i.e. can be long duration and low intensity but equally can be fast paced / intensive
- Recovery may be needed after badminton due to lactic acid build up
- Changes of direction / speed around the court / movement around the court means that EPOC required due to anaerobic components
- Rallies can be long and exhaustive
- DOMS may occur after badminton / muscle soreness

AO3 – Analysis / evaluation of the appropriateness of an ice bath to aid the recovery of a performer after a game of badminton

- Ice baths may not be readily accessible in indoor spaces / sports halls / leisure centres
- Would require some help assistance / to prepare ice bath / help in and out
- Because of the nature of badminton (sprints / anaerobic elements) lactic acid can be a major issue and any method to reduce this is viable
- If available, fairly quick and simplistic method requiring little / no specialist equipment
- Could be incorporated into a cool down after a badminton match fairly easily
- All muscles used in a badminton match can be submerged in water thus causing extremities to experience the process / vasoconstrict / vasodilate
- Not particularly pleasant due to extreme cold and similar results could be experienced simply by cooling down / stretching

Credit other suitable responses relevant to the question.

Max 6 marks

[6]

Q8.

[AO1 = 2 AO2 = 2 AO3 = 5]

Level	Mark	Description
3	7-9	Knowledge of the training seasons, training zones and other factors to optimise training effectiveness is accurate and generally well detailed. Application to a 1500m runner is mostly clear and effective. Analysis is thorough, reaching valid and well-reasoned conclusions as to the effectiveness of training seasons, training zones and other factors. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	4-6	Knowledge of training seasons, training zones and other factors to optimise training effectiveness is evident. There is some appropriate and effective application to a

		1500m runner, although not always balanced and presented with clarity. Any analysis is clear but reaches valid and well-reasoned conclusions for either the training seasons, training zones or other factors. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1-3	Knowledge of training seasons, training zones and other factors to optimise training effectiveness is limited. Application to a 1500m runner is either absent or inappropriate. Analysis is poorly focused or absent, with few or no reasoned links to the effectiveness of training seasons, training zones or other factors to optimise training effectiveness. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of the training year

- Runners will have various phases of training including pre-season (preparation), competition or peak season and post season (transition)
- Splitting the training year into different blocks/ phases or cycles

AO2 – Application to a 1500m runner

- 1500m runners need to run at different intensities during the race therefore have to train accordingly
- Competitive situations can be replicated in training by varying the distance, workload and intensities
- Training methods identified to improve performance in a 1500m race these must be qualified in relation to the correct phases of the race
- Training intensities – using different percentages of zone training (aerobic and anaerobic) along with repetitions and sets
- They will need to do more things to aid recovery, depending on the season

AO3 – Analysis of how a 1500m runner would use their knowledge of training seasons to plan their training in the year before a major event. (Such as a World Championship or Olympic Games)

- Competitive season – maintain fitness but specific high intensity training depending on the schedule of races. Aiming at quality over quantity training. Vary intensities of MHR to replicate race conditions
- Alter distances run along with sets and repetitions
- Building up lactate tolerances so they can delay fatigue during training and races
- Having ice baths / massages after training and races to prevent delayed onset of muscle soreness / DOMS and enable them to maintain the level of performance in next training activity or race
- They may use weight training as a way of increasing strength, particularly pre-season. They would determine the weights used by performing one rep max

tests

- If they want to build strength they would train with a high weight and low repetitions. About 70% of the one rep max for approximately 3 sets of 4-8 repetitions
- If they want to work on muscular endurance they would train with low weights but high repetitions. These would be below 70% and be approximately 3 sets of 12-15 repetitions
- Need to taper training so can peak for major races, competitions. This will involve decreasing training prior to major races to conserve energy
- Manipulation of diet – have carbohydrates in advance of a race to give them more energy, have protein after a race / training for muscle tissue repair
- Ensuring that they keep hydrated after a race / training to maintain level of performance / intensity, e.g. dehydration leads to blood thickening, which slows blood flow meaning that oxygen transport round the body slows, thus leading to a dip in performance
- Post season / transition – active rest to maintain fitness levels. This is vital for them to remain active but equally to take a break from running full time. Runners need to remain fresh and motivated
- The runner would need a structured training programme so that they can successfully peak for a World championships or Olympic Games.

Max 9 marks

[9]

Q9.

[AO1 = 1 AO2 = 2 AO3 = 3]

Level	Mark	Description
3	5-6	Knowledge of the strategies used to combat football hooliganism is accurate and generally well detailed. Application of the strategies is mostly clear and effective. Evaluation is thorough, reaching valid and well-reasoned conclusions to the effectiveness of the strategies. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	3-4	Knowledge of the strategies used to combat football hooliganism is evident but more detailed for some strategies than others. There is some appropriate and effective application of the strategies although not always presented with clarity. Evaluation is clear but reaches valid and well-reasoned conclusions to the effectiveness of one strategy more than the others. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1-2	Knowledge of the strategies used to combat football hooliganism is limited. Application of the strategies is either absent or inappropriate. Evaluation is poorly focused or absent with few or no reasoned conclusions. The answer as a whole lacks clarity and has

		inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of the strategies used to combat football hooliganism:

- Travel restrictions / banning orders
- Alcohol restrictions
- All seater stadia
- Segregation of fans
- Early kick-offs
- Improved security
- Education/promotional activity / campaigns and high profile endorsements
- Sharing of intelligence between different police forces and different police forces in different countries

AO2 – Application of the strategies used to combat football hooliganism:

- Travel restrictions / banning orders – prevents known hooligans from attending / travelling to matches by reporting to police stations / handing in passports
- Alcohol restrictions – Alcohol is not allowed to be consumed whilst watching matches in stadiums and many stadiums do not sell alcohol, in an attempt to reduce disorderly behaviour. Police can also apply for pubs close to stadiums to not serve alcohol on match days.
- All seater stadia – reduces the ability of people to move within a stand and allows better control over ticket distribution, which stops troublemakers congregating together or actually attending matches
- Segregation of fans – travelling to the match and within grounds which means rival fans are kept apart reducing the chance of violence or disorder
- Early kick-offs – to prevent excessive alcohol consumption which may reduce disorderly behaviour
- Improved security – by increased levels of policing and stewarding and the introduction of CCTV at stadiums to identify troublemakers. Improved surveillance of known troublemakers who may behave if they know they're being watched
- Education / promotional activity / campaigns and high profile endorsements – to appeal to spectators to behave such as 'Kick Racism out of Football' which attempted to lessen the influence of racist movements among football supporters.

AO3 – Evaluation of the strategies used to combat football hooliganism:

- Overall the strategies have significantly reduced the amount of violence at football matches compared to the 1970s and 1980s. It is a lot safer for people attending matches but this has come at a significant cost. However football hooliganism still exists and troublemakers are always looking to get around restrictions
- (Travel restrictions / banning orders). This has reduced the number of hooligans travelling / attending matches but costs a lot of money and police time to create a list of known troublemakers, their location and their intentions. Banned troublemakers still risk attending matches as they have to be spotted for their banning order to be enforced
- (Alcohol restrictions / Early kick offs) Means loss of income for local pubs and many spectators drink elsewhere (home) which means that excessive consumption occurs earlier in the day which can lead to disorder later in the day
- (All-seater stadia) Significant cost to clubs who get promoted to higher divisions and groups of supporters can still sit / congregate in the same area. It is also possible for

people to buy tickets for known hooligans so that the authorities are not aware of their attendance

- (Improved security / Segregation of fans) This has significantly reduced the amount of disorder within football stadiums but at a significant cost to clubs. The fear of being identified being involved in violence means hooligans are moving away from stadiums and looking to cause disorder with rival supporters in town centres / railway stations.

Credit other suitable responses relevant to the question.

Max 6 marks

[6]

Q10.

[AO1 = 2 AO2 = 2 AO3 = 5]

Level	Marks	Description
3	7-9	Knowledge of technology is accurate and generally well detailed. Application to sport is mostly appropriate, clear and effective. Evaluation is thorough, reaching valid and well-reasoned conclusions for technology's effect on both spectators and performers. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	4-6	Knowledge of technology is evident but is more detailed for some uses more than others. There is some appropriate and effective application to sport, although not always presented with clarity. Any evaluation is clear but reaches valid and well-reasoned conclusions for one group (spectators or performers) more than the other. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1-3	Knowledge of technology is limited. Application to sport is either absent or inappropriate. Evaluation is poorly focused or absent with few or no reasoned conclusions. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of technology, e.g.

- Technology can be used to make decisions
- Technology can be used to enhance performance
- Technology can be used for analysis
- Technology can be used for rehabilitation
- Technology can be used for safety reasons
- (Accept any other use of technology)

AO2 – Application of technology to sport, e.g.

- Officials will use decision making technology to prevent wrong decisions, e.g. Hawkeye in tennis
- Performance can allow for enhanced performance through heart rate monitors, monitoring diet / calorie counter
- Analysis of performance can allow photos / videos / biomechanics

- Rehabilitation through ice baths, hypoxic tents
- Safety implications relating to cycle helmets, goal keeper protection in hockey

AO3 – Evaluation of the effect of technology on spectators and on performers, e.g.
Spectators
- Creates excitement for the audience whilst they wait on decisions so it is a positive
- Audience can join in / interactive element by cheering / clapping / creates atmosphere
- Can frustrate spectators who do not like waiting or feel the entertainment has been interrupted
- Prevents unruly behaviour / hooliganism as the decision has been made by technology / less controversial
- Makes the event last longer / more value for money
- Less likely to criticise officials
- Performers recover quicker so spectators get to see their favourites more often
- Spectators can get involved in the analysis of their favourite performers, e.g. statistics / performance analysis
- Technology enhanced performers can perform to a higher standard which audiences will enjoy

Performers
- Greater care and support through the use of technology / prolonged career
- Quicker recovery rate means less time on the treatment table / more time performing
- Better understanding about their performance
- Over reliance on technology to understand performance / recovery is a negative
- Less frustrated with the official as the decision has been reviewed / proved / fairer outcome for the performers
- Reliance on technology to keep up with other competitors can cost money
- Easier to analyse competitors

Credit other suitable responses relevant to the question.

Max 9 marks

[9]

Q11.

[AO1 = 1 AO2 = 2 AO3 = 5]

Level	Marks	Description
3	7 – 9	Knowledge of factors affecting participation is accurate and generally well detailed. Application to Aisha is mostly appropriate, clear and effective. Justification is thorough, reaching valid and well-reasoned conclusions for the majority of factors. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	4 – 6	Knowledge of factors affecting participation is evident but is more detailed for some factors more than others. There is some appropriate and effective application to Aisha, although not always presented with clarity. Any justification is clear but reaches valid and well-reasoned conclusions for some factors more than others. The answer lacks coherence in places, although terminology is used appropriately on occasions.

1	1 – 3	Knowledge of factors affecting participation is limited. Application to Aisha is either absent or inappropriate. Justification is poorly focused or absent with few or no reasoned conclusions. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of factors, e.g.
- Negative attitudes
- Education
- Lack of role models
- Lack of media coverage
- Sexism / stereotyping

AO2 – Application to Aisha (do not credit any response linked to a lack of family support), e.g.
- She may have developed a negative attitude due to bad experiences in school
- She may not be inspired by role models in the sports she could take part in
- She may not be motivated due to a lack of media coverage of female performers
- She may be suffering from sexist comments from her peers/ worry about stereotyping

AO3 – Justification of choices, e.g.
- (Attitudes) Perhaps Aisha's friends also have a negative attitude and she is merely copying them
- (Attitudes) The attitude of the PE teacher towards Aisha may be negative within lessons which has caused her to feel negative about taking part
- (Education) The curriculum and choice of PE opportunities available at the school may not suit Aisha, e.g. she may prefer more aesthetic activities not offered at that school
- (Education) The facilities available may be poor and she does not feel inspired to take part
- (Role models) Aisha may be completely unaware of female role models that exist in the sports being covered and therefore does not feel inspired by them
- (Role models) There simply is a lack of female role models who receive appropriate coverage to inspire girls like Aisha
- (Media coverage) It is a fact that men's sport receives more coverage than women's so Aisha is not exposed to or inspired by women's elite sport
- (Sexism) Aisha may well have heard sexist viewpoints expressed by classmates about girls taking part / getting sweaty / muddy
- (Stereotyping) Aisha may well have been influenced by media stereotyping of 'what women should look like'
- (Familiarity) If a reasoned justification is included, e.g. perhaps Aisha's previous school did not offer her the same activities as she is now being offered and she is not familiar with them, therefore anxious
- (Socio-economic reasons) If a reasoned justification is included, e.g. perhaps Aisha is worried about burdening her family with financial costs for equipment / sports clothing

Credit other suitable responses relevant to the question.

Q12.

[AO1 = 2 AO2 = 2 AO3 = 5]

Level	Mark	Description
3	7-9	Knowledge of the media and sponsorship is accurate and generally well detailed. Application of the effects on sports performers is mostly clear and effective. Evaluation is thorough, reaching valid and well-reasoned conclusions of the effects of the media and sponsorship on sports performers. The answer is generally clear, coherent and focused, with appropriate use of terminology throughout.
2	4-6	Knowledge of the media and sponsorship is evident but more detailed for some aspects than others. There is some appropriate and effective application of the effects on sports performers although not always presented with clarity. Evaluation is clear but reaches valid and well-reasoned conclusions of the effects on sports performers of one aspect more than the others. The answer lacks coherence in places, although terminology is used appropriately on occasions.
1	1-3	Knowledge of the media and sponsorship is limited. Application of the effects on sports performers is either absent or inappropriate. Evaluation is poorly focused or absent with few or no reasoned conclusions. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content may include:

AO1 – Knowledge of sponsorship and the media:

Media
- Television / Radio / The Press / The Internet / Social Media

Sponsorship
- Financial / Clothing and equipment, including footwear / Facilities

AO2 – Application of sponsorship and the media to the sports performer:

Media
- Raises the profile of the sports performer which increases their marketability
- Being in the media spotlight can turn performers into heroes and role models

Sponsorship
- Increased financial support allows more money to be available to pay for better

coaching and training programmes and they are under less stress to win because of the reduced worry about finances
- Free facilities could be provided which allows more training time to increase performance
- New, technologically advanced kit and equipment could be provided which increases fitness and skills.

AO3 – Evaluation of the effect of sponsorship and the media on sports performers:

Media
- A strong media presence could increase the pressure to perform which may reduce a performer's enjoyment. Performance may become extrinsically rather than intrinsically motivated
- Being in the media spotlight can bring fame but often brings with it scrutiny into their private lives. This may affect the mental health and well-being of the performer as their movements and actions are always being scrutinised
- Whilst good play can be highlighted and showcased it can also mean that the mistakes a performer makes become very public. Inappropriate sporting etiquette or bad sportsmanship could be highlighted, which could give the performer a bad name
- Sports performers who are extrovert may thrive with the added media exposure. However, for those who are introvert, it may result in lower performance levels as they are unable to cope with this.

Sponsorship
- The contract between the sponsors and the performer may demand that the performer has to submit to various commitments which may mean a loss of free time or privacy or take them away from training
- Sponsors product may not be suitable (unhealthy) which may affect the sports performer's reputation
- Outcome goals may be set, which could increase stress to produce successful results in order to 'repay' sponsored support and uphold reputations
- A run of poor results may lead to a loss of sponsorship and therefore income even their professional status. This could lead a performer to cheat during competition (bad sportsmanship) or take prohibited substances to prevent such a run, maintain their sponsorship and source of employment
- Acts of direct aggression or cheating may put sponsors off or could result in withdrawal of sponsorship for sports performers.

Credit other suitable responses relevant to the question.

Max 9 marks

[9]