



Bishop Walsh
Catholic School

GCSE

Physical Education

Revision Guide

Mr Huddleston

GCSE Physical Education - The Theory paper

The SEVEN key points to success

1. **Pay attention to bold type** – If a question has a word in bold type, then the examiner wants you to answer specifically around this subject.
2. **Command words** – Make sure you know what “Describe”, “Explain”, “Discuss” means.
3. **Clear examples** – Give a clear example linked to a sporting situation and explain what you mean.
4. **Get rid of vague answers** – Make sure your answer is specific to what it is asking for. The examiner will be looking for specific answers from the mark scheme and will simply ignore anything if it is not linked to the question.
5. **Develop your argument/discussion** – Don’t just give a simple statement! Make your statement, but then develop it by explaining what you mean and give a sporting example. Essay questions should have at least 3 developed statements and a conclusion, in order to gain full marks.
6. **Only write in the area that is designated** – Papers are no longer sent to moderators, they are scanned in and emailed to the moderators. If you do not write in the designated area, the person marking your paper will not see your answer.
7. **Write clearly** – If an exam marker cannot read what you have written, they will simply not award it any marks.

Essay Questions – where are my marks coming from?

Level of answer	Marks awarded	What to include to gain these marks:
Level 1a	1 mark	2 simple statements
Level 1b	2 marks	3 simple statements or 1 simple & 1 developed statement
Level 2a	3 marks	2 developed statements
Level 2b	4 marks	2 developed & 1 simple statement
Level 3a	5 marks	3 developed statements
Level 3b	6 marks	3 developed & 1 simple statement & a conclusion

Exam Tips – Command Words in Exam Questions

Command Word	Meaning	Example Question and Answer
Describe...	Think description... You might outline or define a term You might have to show only the main points / structure of something. You might talk about how something occurs (don't get confused with explain which requires you to say why something happens and not just how)	Q. Describe what being healthy means <i>(Could rewrite as - how can you be termed healthy?)</i> A. If you are healthy you are in a state of complete physical, mental and social wellbeing, and do not merely have an absence of disease or infirmity.
Explain...	Think explanation... You might talk about how and why something occurs or works (needs much more information than a description answer)	Q. Explain what is meant by the term anaerobic? A. (Why) There is an absence of oxygen during respiration, (and how) glucose is broken down producing energy and lactic acid.
State, Name or Identify	Generally requires a one word answer or very short sentence.	Q. Name the waste product which can be produced after working anaerobically A. Lactic Acid
Give an example...	Apply a theory to a practical example (Application of theory)	Q. Give two examples of physical movement where flexion occurs A. 1 – Bending the leg at the knee during a high jump. 2 –Bending the arm at the elbow during a bicep curl.

This is just a guide!

If in your exam you think a certain question with one of these command words requires a different type of answer rather than the examples above, then answer it how you think it should be answered. Just make sure you **READ THE QUESTION** properly and write down what it is asking for. Remember to make at least **1** more point than the marks awarded eg. If a question is worth 4 marks make **5 points!**

Unit 1: Factors affecting participation and performance

1 a Skeleton and Joints

- ❖ Functions of the Skeleton: Shape & Support;
Movement e.g. joints in the skeleton;
Protection e.g. ribs protect heart and lungs;
Blood Production e.g. produced inside ribs, humerus, femur & skull
- ❖ Major bones in body:
Arms – humerus, ulna & radius
Legs – Femur, Tibia & Fibula
Ribs, Sternum, Clavicle, Scapula
Spine(vertebrae), Skull (cranium).
- ❖ The joints listed below are all synovial joints that are also known as freely moveable joints.
- ❖ Joints:
Ball & Socket – found at hip & Shoulder
Hinge – found at the knee or elbow
Gliding- found between the bones in the hand
Pivot – found in the neck cause rotation
Saddle – found in the thumb
- ❖ The different joints allow different types of movement. Ball & socket allow most movement.
- ❖ Types of movement:
Flexion – bending
Extension – straightening
Rotation – twisting and turning
Abduction – moving limb away from the body
Adduction – moving the limb towards the body
- ❖ Joints are surrounded by ligaments. Ligaments attach bone to bone. Inside the joint is synovial fluid and cartilage that is attached to the ends of the bone. These allow the joint to move freely.

1 b Muscles

- 3 Types of muscle: Skeletal muscle – works when instructed by us.
Smooth muscle – Involuntary; They work automatically e.g. stomach muscles
Cardiac muscle – Also involuntary but only found in the heart.
- The major muscles: Deltoid (shoulder); Triceps (under arm); Bicep (top of arm); Hamstrings (back of leg); Quadriceps (front of leg); Gastrocnemius (Calf); Gluteals (bum); Abdominals (stomach); Latissimus Dorsi or Lats (back); Pectorals (chest); Trapezius (back of neck).
- Muscles are attached to bone by a flexible cord called a **tendon**.
- Muscles work in pairs. This is called antagonistic pairs, when one muscle contracts the other relaxes to allow movement.
- Flexors and Extensors: Some muscles contract/flex to bend a joint e.g. hamstrings contract and bend the knee. The quadriceps are extensors as they contract to straighten the knee.
- Prime mover or Agonist: Contracts to start a movement.
- Antagonist: The prime mover's (agonist) partner muscle. This relaxes to allow a movement to take place.
- Synergist: Helper muscle. They assist the prime mover in creating movement.
- 2 types of muscle fibre:
Fast Twitch – Contract very quickly and used in anaerobic activities.
Slow Twitch – Takes longer to contract and can work for longer without tiring.

1 c Circulatory & Respiratory Systems

* The blood circuit:

Blood gets oxygenated in the lungs and travels to the heart which pumps it to the muscles. Muscles remove the oxygen to do cell respiration which makes energy and the deoxygenated blood travels back to the heart. The heart then pumps the blood to the lungs to become oxygenated once again.

Heart Rate : No. of times heart beats per minute

Stroke Volume: Amount of blood that leaves the heart per beat.

Cardiac Output: Amount of blood pumped out of the heart per minute.

Heart Rate x Stroke Volume = Cardiac Output

Respiratory Rate: No. of breaths we take in a minute

Tidal Volume: Amount of air we take in or out in one breath.

Minute Volume: Amount of air we take in or out in one minute.

Respiratory Rate x Tidal Volume = Minute Volume

- * 4 Functions of the Blood: Transportation – nutrients, waste, oxygen, carbon dioxide, hormones.
 Protection – White blood cells fight bacteria. Platelets clot blood.
 Temperature Regulation – Carries heat away and maintains body temp.
- * 4 Components of the blood: Red Blood Cells, White Blood Cells, Platelets, Plasma
- * During very intense or prolonged exercise an **oxygen debt** builds up. This makes cell respiration occur without oxygen and this creates **Lactic Acid**. Lactic Acid creates pain in the muscles and this forces an athlete to stop performing.
- * As an athlete trains more regularly their **recovery rate** increases and they become more able to cope with the effects of Lactic acid and an oxygen debt this is called **Lactic Acid and Oxygen Debt Tolerance**. Also as the cardiac muscle becomes stronger it doesn't have to beat as fast when at rest because it has an increased stroke volume (can pump more blood per beat).
- * As the lung capacity increases respiratory rate also slows down when at rest and tidal volume increases.

1 d Skill

- * Skill is the learned ability to bring about a desired result as efficiently as possible with confidence in the eventual outcome.

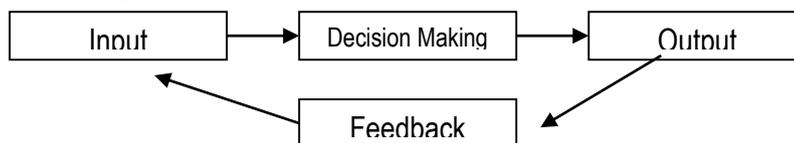
OPEN SKILL: What you are going to do may vary depending on the environment. You need to be adaptable. A goalkeeper's skill is open – he must stop the ball from going into the net but how he does this depends on the shot.

CLOSED SKILL: You do the same action over and over again. The environment remains the same. A gymnast works with closed skills as he/she will perform it the same every time.

- * Whole - Practice skill in whole, it cannot be split into parts.
Fixed – Used for learning closed skills. Skill repeated under same conditions
Part – Break skill down in manageable parts.

- * How we learn a skill and what type of **guidance** we are given is important: **Verbal, Visual, and manual**. Demonstration is one of the best ways to teach a skill.

- * Information processing model



- * Skills are learned, refined and adapted by: **Practice, Copying, Trail & Error**, and through watching **role models**.
- * 3 types of feedback: **Intrinsic feedback**– How a skill feels from within when performing.
 Extrinsic feedback or Knowledge of Performance – Info. given by coach, team mates, crowd etc.
 Knowledge of Results – This feedback tells you whether you achieved your desired result.
- * A skilled performer makes less mistakes; is more **consistent**; they are capable of coping with change so they are **adaptable**; they **use less energy** to do the same skill as a novice; they are **more time efficient**.

1 e Motivation & Mental Preparation

- ☺ Mental Preparation: **Relaxation** – listening to music and good sleep (psychological),
 Massage, yoga& stretching (physical).
 Mental Rehearsal – Go through the perfect performance in the mind.
 Reduces anxiety and can motivate.
 Focusing – Confirming the key points of the technique and tactics and performance aims.
- ☺ Intrinsic Motivation: Internal motivation – why we choose to participate in sport. Enjoyment, achieving personal goals, ambitions, personal satisfaction and pride.
- ☺ Extrinsic Motivation: External Motivation, winning cups, trophies, personal fame, prize money, career opportunities.
- ☺ Set goals and targets to increase motivation. The targets set must be related to the 'SMARTER' levels or target boundaries. This means:

Specific	- To focus attention
Measurable	- So you can measure progress against a standard.
Accepted	- By performer and coach.
Realistic	- Challenging but within performer's capabilities.
Time phased	- Should be a specified completion date.
Exciting	- Should challenge, inspire, and reward performer.
Recorded	- To evaluate performance and progress.

- ☺ The intensity of our motivation is called arousal. If our level of arousal is not high enough we may feel bored and not perform as well. If our arousal is too high we may become anxious and worried, this creates tension, which makes our performance less effective.

1 f Social Reasons for Participation

- 🔦 An increased amount of leisure time enables increased participation in activity: shorter working week; technology; early retirement; unemployment; flexi-time (where an individual can choose their own work hours).
- 🔦 People take part in activity to: improve health; reduce stress; improve sense of well-being; increase life expectancy; for enjoyment; for friendship; as a hobby; to socialise; A job – professional/semi-professional status, other employment (teaching PE, work in gym or leisure centre).

1 g School

- 📖 National curriculum requirements state that KS3 pupils must have 2 hours of PE per week minimum and KS4 pupils must have 1 hour minimum.
- 📖 There aim examinations in PE available obviously GCSE PE and 'A' Level, GNVQ, BTEC at college and degree level.
- 📖 PE lessons affect individuals' attitudes of sport.
- 📖 Aim of school PE is to:
 - Promote and encourage people to participate in sport once they leave school and in later life.
 - Deliver and explain the advantages of life long involvement in physical recreation.
 - Teach the value of regular exercise on health and fitness, safe practice in sport and prevention of injury.
- 📖 PE teachers should use their own enthusiasm, attitude and experience in their work as a role model for students
- 📖 Teachers should also advertise extra-curricular clubs and local sporting clubs.
- 📖 Extra-Curricular clubs should provide further coaching and more detailed practices, increased fitness, possible access to better facilities and coaching.

1 h Social Background

Age: (understand the limitations of how getting old can affect performance) Stiff joints and weak bones, limited money to pay to play.

Gender: The prejudices around female participation are now ridiculed (largely historical arguments e.g risk of problems in child birth) . Women play most sports and are considered better at ultra-endurance events. Women boxing is still a concern but for safety aspect rather than gender.

Access: Amount of free time people have, the cost, availability of resources. For some people access may be affected by their age, disability, gender, poverty etc.

Disability: Disability in sport and recreation have suffered due to lack of recognition. Now there is a high profile of disability sport (excellent performances at Sydney Paralympics, 2002) and this is raising participation & broadening awareness).

Education: School provides 1st opportunity to participate in sport. The purpose of sport in schools is participation, not competition. Aim:- to encourage participation at every level, rather than maintaining sport as an elite activity. It teaches moral/social values & develops positive lifetime habits.

Family: Young People growing up in a sporting family are more likely to develop and maintain such interest. Family can have a negative effect on involvement as-well as positive.

Environment and Climate: e.g. There will be a higher participation in skiing in a country with mountainous terrain + good snowfall. Climatic extremes can restrict extent of activity, but technology can overcome this e.g. Golf courses in the desert, snowdomes etc.

Peer group: Influence lifestyle + interests of young people. A 'Cool' activity within a peer group often does not promote a healthy lifestyle

Politics: In the eastern European countries in the 1960s governments funded sports institutes + the principals of 'sports for all' for effective talent identification. France then took this approach. Some countries felt they could not compete on equal terms with the state funded athletes or scholarships. Funding is partly government intervention and private enterprise (e.g. sponsorship)

Poverty: Some social groups miss out because they cannot afford it. Sport England now sponsors an 'Active Community Development Programme' to assist groups in minority and deprived areas.

Sponsorship: 'the funding of sporting activity for commercial gain'. 'Sportsmatch' (1992) & 'Active communities Development fund' (2000) encourage businesses to sponsor. Sponsorship brings much funding to sport e.g. sky for soccer.

The Media: It exerts much influence on our perception of sport & sport related matters. TV companies spend millions for rights to major events. Personal issues (e.g. high salaries, drugs, behaviour on and off the field, crowd problems) receive much greater attention. This greater exposure has positive and negative effects (e.g. provides more opportunity to see/ hear/ read about sport, encourages participation and motivation).

Tradition & Culture: Cultural value or beliefs can place severe limitation upon freedom of individuals to participation in sport. Women particularly discriminated by strict dress & moral code and frowned upon participation on certain days.

1 i Local & National Facilities

The difference between 'opportunity' and 'provision'. Opportunity (in terms of free time) cannot be fully enjoyed without some reasonable level of provision (in terms of open spaces and/or facilities). The presence of both allows access.

\$ Some activities are specific to coastal or mountainous regions, other are too expensive, require high levels of technology e.g. ice-skating or indoor skiing.

Funding: Provided through 3 ways. Government, private funding/sponsorship, voluntary (e.g. unpaid officials).

Local Provision: Main providers are: local authority, private enterprise (for profit), private/voluntary clubs or associations (for benefit of the members). Local authorities provide & maintain: parks, playing fields, swimming pools, sports facilities in school, local sports centres, local youth centres.

National Provision: Provided by both public and private funding. The sports authorities run by national means are: UK sport, Sport England, Sports Council for NI, Sports Council for Wales, SportsScotland. **National Centres of Excellence** include: Bisham Abbey, Crystal Palace, Lilleshall, Holme Pierrepont, Plas y Brenin.

Institutes/ Academies of Sport: These are required to improve performance of national teams. They provide facilities for athletes, coaches, sports scientists and other related services e.g. sports medicine, physiotherapy and sports psychology.

Unit 2: The Relationship between Health, Fitness and Games

2a: Components of Fitness

Health Related

- ☺ **Cardiovascular Endurance**: The ability of the heart, lungs & vascular (blood vessels) systems to work for a long period of time without becoming over tired. TEST: 12 minute run & bleep test.
- ☺ **Muscular Endurance**: The ability of the muscles in the body to work for a long period of time without becoming over tired. TEST: 1 minute sit up test or press up test.
- ☺ **Speed**: The ability to move all or part of the body as quickly as possible. TEST: 50 metre sprint
- ☺ **Strength**: The ability of the muscles to carry out daily tasks. This involves maximum strength (ability to use our muscles to apply maximum force to an immovable object), muscular power (ability to contract the muscles with speed and force in one explosive act), and muscular endurance. TEST: hand grip strength test.
- ☺ **Flexibility**: The ability to move our joints through their full range of movement. TEST: sit and reach test.

Skill Related

- 👍 **Agility**: The ability to change the direction of the body at speed. TEST: Illinois agility test.
- 👍 **Balance**: The ability to maintain equilibrium when stationary or moving. TEST: stork balance
- 👍 **Coordination**: The ability to carry out a series of movements smoothly and efficiently. TEST: hand wall toss test.
- 👍 **Speed of Reaction**: The ability to respond to a stimulus quickly.
- 👍 **Timing**: The ability to react appropriately and at the right time to given stimulus.

2b: Factors Affecting Fitness

★ Health & Diet

Carbohydrates: provides energy (carbo-loading)

Fat: provides energy more slowly

Protein: Builds and repairs damaged tissue

Minerals & Vitamins: enables our bodies to work normally and efficiently free from disease.

Fibre: Helps our food move through our digestive system.

Water: prevents us from becoming dehydrated.

★ Over & Under Eating

Over eating makes you feel: tired more quickly when exercising; less energetic; sluggish during activity. It reduces fitness as you become obese you have a slower recovery rate.

Under eating makes you feel dizzy, tired, weak, have a lack of concentration. When taking part in sport it increases the risk of injury as bones become weak.

★ Somatotype

Endomorph: DUMPY, very stocky build, large fat ratio. Pear shaped body.

Ectomorph: THIN, narrow shoulders and hips, little muscle or fat.

Mesomorph: MUSCLEY, wide shoulders and narrow hips.

★ Age

As we get older: bones become weaker; joints less flexible; body fat gradually builds up; maximum strength decreases and muscles reduce in size; reactions become slower; blood pressure increases. However, exercise can delay onset of aging and reduce chance of health related illness.

★ Gender

As we mature boys develop larger bones and muscles girls develop breasts and an increased amount of body fat in the hips, although none of this should affect training. However, be aware of the dangers associated with mixed participation activities.

★ Disability

The Sports Council aim to raise profile of disability sport, increase access and opportunity, encourage involvement.

★ Smoking

Reduces lung efficiency; reduces oxygen carrying ability of our haemoglobin; reduces fitness levels; lowers resistance to illness; raises blood pressure; reduces life expectancy.

★ Alcohol

Reduces coordination reaction time and balance; dehydrates the body; lowers muscle glycogen levels and slows removal of lactic acid; rapid heat loss; increases injury recovery time; reduces size of arteries; increases weight.

★ Drugs in sport

Common name	Effects on body
Painkillers (Narcotic Analgesics)	(Example= morphine) Reduces pain. Allows participation & training even with an injury. Injuries can be made much worse. Any sports person is likely to take these.
Anabolic Steroids	Enable sports people to train for longer & harder results in increased muscle size and strength. Taken usually by weight lifters and sprinters
Beta Blockers	Used to reduce heart rate and calm the nerves during periods of stress i.e. competition. These are taken by competitors in archery & shooting.
Stimulants	(Example = amphetamines) Speed up reflexes and reduces feeling of fatigue. Makes you feel more alert and ready for competition.
Diuretics	Removes fluid from the body as urine, so the result is rapid weight loss. They are also used to remove other drugs from the body. Often taken by jockeys, weight lifters & boxers.
Blood Doping	Athletes inject blood back into their body that they had previously removed and stored. This increases no. of red blood cells. Blood can then carry more oxygen to muscles, used for endurance athletes.

★ Stress & Arousal

This can act as a **motivator & depressor** of performance levels. In moderate amounts, both can act as a spur to better performance. Some stress or anxiety prior to an event is normal, when levels become too high performance can be affected. Stress levels can be managed by: setting easy initial targets; mental rehearsal; verbal reassurance; relaxation.

Arousal is linked to state of readiness.

1. When we perform well arousal is an asset.
2. If we make a mistake in our performance, arousal becomes stress.
3. Over-arousal can have a negative affect on performance level. Due to loss of motor control e.g. false starts.
4. Negative responses from the crowd can cause over-arousal as can unsporting acts on an opponent.
5. the 'big occasion ' may affect a player, so that they become unable to perform effectively.

2d: Fitness Training Principles

Specificity : Training for specific muscle groups or particular sports

Progression : Training to allow progress, increasing the difficulty of the activity.

Overload : A particularly difficult week of training to improve individual performance.

Reversibility : When you stop training this occurs as the muscles begin to waste away.

Peaking : Train to peak for a certain time of year for competition.

FITT Principle **this should be applied when creating a new training programme**

Frequency: How often the training will occur

Intensity: How hard the training will be.

Time: What times of the day the training will be and for how long.

Type: Type of training e.g. weights, circuit etc

2e: Training Methods

You should know the advantages and disadvantages of each training method.

Circuit Training : Various stations to improve fitness/skills.

Fartlek Training : Speed play, good for games players.

Interval Training : running/cycling/swimming with rests. Useful for endurance events and can be adapted for anaerobic work (sprints).

Weight Training : Isometric (fixed contraction of muscles against a weight) and Isotonic (repeated contractions).

Continuous Training : Endurance work can be done jogging/swimming/cycling.

Flexibility Training : Improves flexibility.

2f: Training Effects

Immediate effects of exercise on the body

Respiratory System	Cardiovascular System	General changes
☹ Breathing rate increases ☹ Tidal Volume increases ☹ Minute volume increases	❖ Heart rate increases ❖ Stroke volume increases ❖ Cardiac output increases	✓ Sweating ✓ vasodilation

Long term effects of exercise on the body

Respiratory System	Cardiovascular System	General changes
☹ Breathing rate decreases ☹ Tidal Volume increases ☹ Minute volume increases ☹ Lung capacity increases	❖ Heart rate decreases ❖ Stroke volume increases ❖ Cardiac output increases ❖ Stronger heart muscle	✓ Quicker recovery rate ✓ Better muscle tone ✓ Reduced risk of illness

Unit 3: Risk Assessment in Physical Activity

3 a Potential Hazards

- ☠ **What is a risk assessment:** An assessment is made about the sport and the area of play to identify any hazards that might cause an accident or injury.
- ☠ Any potential hazards are minimised by establishing rules and by removing the hazard.
- ☠ **Hazards likely to be found on the tennis courts or playing fields** are: litter, broken glass or fencing, nails or sharp objects, unstable portable posts, poor surface, presence of animal excretion.
- ☠ **Hazards likely to be found in the gym** are: equipment in general – falling off, low over head beams when on the trampoline, ropes, inadequate storage and protruding equipment, fixing gym equip together, water on the floor.
- ☠ **Hazards likely to be found at a swimming pool:** water on the floor, diving boards and other poolside apparatus, misbehaviour, use of flippers and masks by beginners, swimmers out of their depth, submerged gratings and grills, insufficient notice of pool depth.
- ☠ **Hazards likely to be founds at outdoor adventurous activities:** This varies greatly and depends on the activity, so this is a vast area. Use you instinct and common sense on this one!

3 b Prevention of Injury

- ☞ Although it is impossible to remove risk completely the following areas should be given particular attention:
 - ☞ Appropriate level of competition – Same age group and therefore sizes.
 - Similar abilities
 - Same sex competitions
 - ☞ Clothing and footwear – gum shields and shin pads, costumes for swimming.
 - ☞ Correct technique – particularly in a scrum, not to hurt self or others. In gymnastics a mistimed move can result in injury.
 - ☞ Knowledge of appropriate safety procedures.
 - ☞ Knowledge of rules, codes of conduct and laws.

- 👉 Knowledge of lifting, carrying and placing equipment.
- 👉 Warm up and cool down.

- 👉 It is important to have good personal hygiene to avoid minor infections such as verrucae (caused by a virus) and athletes foot (a fungal infection often found between the toes).
- 👉 These can be avoided by doing the following: shower using soap; dry off thoroughly; change under-garments after activity; and wash clothes after every physical activity.

3 c Injury Treatment

- ✓ **Blisters:** Do not pop! Larger blisters may be drained under medical supervision. Cover it up.
- ✓ **Cuts and Grazes:** Clean area and apply dressing. If persistent bleeding occurs apply pressure, raise and ask for medical assistance.
- ✓ **Concussion:** Caused by severe blow to the head. Patient may be drowsy, confused or unconscious. Seek immediate medical attention, keep patient warm and comfortable. If unconscious place in recovery position.
- ✓ **Dehydration:** Likely to occur in endurance events and result of excessive sweating and inadequate fluid intake. Signs: excessive sweating, rapid heart rate, vomiting, dry mouth. Provide fluid and rest.
- ✓ **Exhaustion:** Over worked. Signs: look pale, weak pulse, extreme physical tiredness. Move patient to comfortable location and give fluids, keep warm or cool off accordingly.
- ✓ **Winding:** A blow to the abdominal (stomach) area. Signs: shortage of breath, doubling over unable to speak. Place patient in reclining position and allow to recover at own pace.
- ✓ **Injuries to ligaments, tendons and muscles:** Often due to over stretching or sudden twist or wrench. For Strains (damage to tendons or muscle) and Sprains (damage to ligaments) use RICE treatment.
- ✓

REST, ICE, COMPRESSION, ELEVATION.

Glossary of terms – Learn these keywords

Aerobic ‘with oxygen’. If exercise is not too fast and is steady, the heart can supply all the oxygen the muscles need.

Agility the ability to change the position of the body quickly and to control the movement of the whole body.

Anaerobic ‘without oxygen’. If exercise is done in short, fast bursts, the heart cannot supply blood and oxygen to the muscles as fast as the cells can use them.

Balance the ability to retain the centre of mass (gravity) of the body above the base of support with reference to **static** — stationary — or **dynamic** — changing — conditions of movement, shape and orientation.

Body composition the percentage of body weight which is fat, muscle and bone.

Cardiac output the amount of blood ejected from the heart in one minute.

Cardiovascular pertaining to the heart and blood vessels.

Cardiovascular fitness

the ability to exercise the entire body for long periods of time.

Co-ordination the ability to use two or more body parts together.

D.R.A.B.C

Danger (to casualty or first-aider)

Response (different levels of casualty response — alert/unresponsive; presence or absence of (voice/pain)

Airway (is there a blockage of the airway?)

Breathing (listening and feeling if the casualty is breathing)

Circulation (is the blood circulating?)

Exercise a form of physical activity done primarily to improve one’s health and physical fitness.

Fitness the ability to meet the demands of the environment.

Flexibility the range of movement possible at a joint.

Health a state of complete mental, physical and social well-being, and not merely the absence of disease and infirmity.

Heart rate the number of times the heart beats each minute.

Isometric contractions

muscle contraction which results in increased tension but the length does not alter, eg, when pressing against a stationary object.

Isotonic contraction muscle contraction that results in limb movement.

Joint a place where two or more bones meet.

Muscle tone voluntary muscles in a state of very slight tension, ready and waiting to be used.

Muscular endurance the ability to use voluntary muscles, many times without getting tired.

Muscular strength the amount of force a muscle can exert against a resistance.

Obese a term used to describe people who are very overfat.

Overload fitness can only be improved through training more than you normally do.

Overfat a way of saying you have more body fat than you should have.

Overweight having weight in excess of normal. Not harmful unless accompanied by overfatness.

Oxygen debt the amount of oxygen consumed during recovery above that which would have ordinarily been consumed in the same time at rest (this results in a shortfall in the oxygen available).

Performance how well a task is completed.

Power the ability to do strength performances quickly. $\text{Power} = \text{Strength} \times \text{Speed}$.

Progression start slowly and gradually increase the amount of exercise you do.

Reaction time the time between the presentation of a stimulus and the onset of a movement.

Reversibility any adaptation that takes place as a consequence of training will be reversed when you stop training.

R.I.C.E Rest, Ice, Compression, Elevation.

Specificity you must do specific kinds of activity or exercise to build specific body parts.

Speed the differential rate at which an individual is able to perform a movement or cover a distance in a period of time.

Stroke volume the volume of blood pumped out of the heart by each ventricle during one contraction.

Tidal volume the amount of air breathed in or out of the lungs in one breath.

Training a well-planned programme which uses scientific principles to improve performance, skill, game ability and motor and physical fitness.

Vital capacity the maximum amount of air that can be forcibly exhaled after breathing in as much as possible.