

PE

Bridging Unit Year 12 - 13



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1. Vocabulary – make sure you know these terms:

Word	Definition
glycolysis	Glycolysis is the breakdown of glucose into pyruvic acid.
electron transport chain	Hydrogen atoms are carried through the electron transport chain. It is the third stage of aerobic glycolysis.
anaerobic energy	Anaerobic energy is the use of energy without the presence of oxygen.
lactate	Lactate is a bi-product of anaerobic glycolysis.
slow oxidative	Slow oxidative is one of three muscle fibre types.
fast oxidative	Fast oxidative is one of three muscle fibre types.
fast glycolytic	Fast glycolytic is one of three muscle fibre types.
Krebs cycle	The Krebs cycle is the second stage of aerobic glycolysis.
ATP PC System	The ATP PC system kicks in during very high intense activities to resynthesise ATP.
anaerobic glycolytic	Anaerobic glycolytic is the energy system used without the presence of oxygen.
onset of blood lactate accumulation (OBLA)	OBLA stands for the onset of blood lactate accumulation.
excess post-exercise oxygen consumption (EPOC)	EPOC stands for the excess post-exercise oxygen consumption.
acclimatisation	Acclimatisation is the process of gradual adaptation to a change in environment.
altitude training	Elite endurance athletes choose to participate in altitude training (preferably over 2,500m above sea level) for several weeks, as there are lots of benefits to performance.
plyometrics	Plyometrics training involves quick, powerful, jumping and bounding movements.
open skill	Open skill is when the environment is constantly changing,
gross or fine skill	Gross or fine skills are based on the amount of muscle movement and precision required when performing a skill.
whole-part-whole	Whole-part-whole method is where the whole skill is first demonstrated and practised, before being broken down into the constituent parts to practise the individual elements and improve on these, before putting the whole skill back together.
progressive practice	Progressive practice is sometimes also known as the chaining method, as the parts of a skill are practised individually, in order, before being linked together and expanded.

massed practice	Massed practice is when one skill is practised repetitively without breaks.
distributed practice	In distributed practice, attempts at the skill are divided up with intervals in between to allow for rest and mental rehearsal.
variable practice	Variable practice is used best for open skills and involves repeating a skill in varying situations.
mental practice	Mental practice is the cognitive (thinking) rehearsal of a physical skill without movement.
cognitive	In the cognitive stage of learning, performances are inconsistent and success is not guaranteed.
associative	The associative learning phase is also known as the 'practice phase'. Performances are becoming more consistent as motor programmes are being formed.
autonomous	In the autonomous or motor phase, the final stage of learning, performances have become consistent, fluid and aesthetically pleasing.
verbal	Verbal guidance is thought to be the least useful style of guidance when used in isolation.
visual	Visual guidance is the use of a demonstration to help guide the performer to form a mental picture and reproduce the movement. The demonstration, or model, must be as perfect as possible and must be realistic.
manual	Manual guidance can come from another person or an object to help the performer learn a movement, whilst building confidence and getting a sense of how it should feel.
mechanical	Mechanical guidance is when the performer is guided by equipment to support the learner whilst practising the skill. The use of equipment when practising a new skill offers safety and allows the learner to gain confidence.
Skinner's theory of operant conditioning	Skinner's theory of operant conditioning involves the correct response to a situation or task being rewarded. This reinforces the correct response.
Bandura observational learning	Developed by Bandura, observational learning states that performers learn new skills by observing others.
selective attention	Selective attention enables sense to be made of all the information available so that only useful information can be acted upon.
psychological refractory period	Psychological refractory period works alongside the single channel hypothesis. The PRP is the lull in time between finishing processing stimuli 1, before processing and making a decision on stimuli 2.
single channel hypothesis	The single channel hypothesis states that once a stimulus has been recognised and is in the process of being dealt with, any secondary stimuli must wait until the first has been dealt with before it can be processed.

Word	Definition
class system	The class system determines a person's social status by the family into which they were born.
Industrial Revolution	The Industrial Revolution was the transformation of Britain from a predominantly rural and agricultural society, into a society dominated by factories and urban living.
transport	Transport was directly impacted by the Industrial Revolution as goods were being moved long distances across the country and, as a consequence, the infrastructure of the country improved.
public school	Public schools are independent, well-established, selective, fee-paying schools.
governing body	A governing body, in this unit, controls their sport and the performers that participate in it.
amateur	An amateur performer is someone who participates in a sport or activity without payment.
professional	A professional performer is someone who participates in a sport or activity as it is their job and they receive payment for it.
sponsorship	Sponsorship is when a business or company provides a sport, team or individual with a form of assistance in return for an association with them.
society	Society is a group of people who live together in a more or less ordered community, sharing common identity, methods of communication, morals and boundaries.
social action theory	Social action theory suggests that society is created by social interaction. By interacting with others, people can be influenced.
disability	Disability is a physical or mental condition that limits a person's movements, senses or the activities they are able to perform.
ethnic groups	An ethnic group is a community made up of people who share a common cultural background or descent.
discrimination	Discrimination is the unjust or prejudicial treatment of different people due to, but not limited to, race, political beliefs, age, religion, gender or sexual preferences.
stereotyping	Stereotyping is judging an individual or group of people, based on your own opinions, experiences and interactions with them and assuming that they will be the same.

physical recreation	Physical recreation refers to activities which are physical in nature, but the participant performs them for reasons other than winning.
gamesmanship	Gamesmanship is using various methods and tactics to gain an advantage to win in sport.
win ethic	Win ethic refers to how much a performer is prepared to do in order to win.
spectator sport	A spectator sport is one that is watched by spectators.
anabolic steroids	Anabolic steroids are a synthetic hormone which imitates testosterone in promoting the growth of muscle.
beta blockers	Beta blockers are used to reduce high blood pressure, treat angina and prevent the stimulation of adrenergic receptors responsible for increased cardiac action.
hooliganism	Hooliganism is when a group or individual participates in disorderly and/or violent behaviour and is often, although not exclusively, associated with football.
golden triangle	The golden triangle is the relationship between a sport/team/individual, media and sponsorship.
commercialisation	Commercialisation is maximising profit from sport from the perspective of sports themselves, teams and individuals as well as the media and sponsors.
socialisation	Socialisation is the process of learning to behave in an acceptable way, dependent on societal norms.
prejudice	Prejudice is an unjustified or incorrect preconceived attitude towards an individual or group.

Word	Definition
acceleration	Acceleration is the rate in change of velocity.
speed	Speed is how quickly a body covers a set distance.
distance	Distance is the measure of space between two points.
lever	A lever is the coordination of bones and muscles to produce human movement.
gravity	Gravity is the force by which a planet or other body draws objects towards each other.
air resistance	Air resistance is a force that opposes the motion of a body travelling through the air.
weight	Weight is the gravitational pull that the earth exerts on the body.
momentum	Momentum is the quantity of motion possessed by a moving body.
drag	Drag is the force that opposes the direction of motion of a body through the water.
proprioception	Proprioception is the sense of position of body parts.
concentric	Concentric muscle contraction is the shortening of the muscle whilst producing tension.
eccentric	Eccentric muscle contraction is the lengthening of the muscle whilst producing tension

isotonic	Isotonic contraction is when the muscle changes length during contraction.
isometric	Isometric contraction is when the muscle stays the same length during contraction.
neurotransmitter	A neurotransmitter is a chemical messenger which transmits signals across a chemical synapse, such as a neuromuscular junction, from one neuron (nerve cell) to another "target" neuron, muscle cell, or gland cell.
reaction	Reaction is the equal and opposite force exerted by a body in response to the action force placed upon it.
friction	Friction is the force that opposes the motion of two surfaces in contact.
load	The load in a lever system is the actual weight or resistance that the lever has to overcome.
effort	The effort of a lever system is the actual muscle contraction that causes movement.
fulcrum	The fulcrum is the fixed point (joint) of a lever.
inertia	Inertia is the resistance of the body to change its state of motion, whether at rest or moving.
velocity	Velocity is the rate of change in displacement.
displacement	Displacement is the shortest distance between the initial position and the final position.
Newton's laws	Newton's laws of motion are centred around the study of force and its application to movement.
angular displacement	Angular displacement is measured from the start to end of angular motion.
angular velocity	Angular velocity is the rate in change in angular displacement or the rate of rotation.
parabolic flight	Parabolic flight is the uniform curve symmetrical around its highest point.
Bernoulli principle	Bernoulli principle is the underlying theory of how additional lift force can be created during flight, based on the shape of the projectile.
motor neuron	A motor neuron is a nerve cell which conducts an impulse across a group of muscle fibres.
action potential	Action potential is the positive electrical charge inside the nerve and muscle cells.

2. Reading List

Sport / Physical Education reading list:

Developing Skill in Sport

- Schmidt, R.A. & Wrisberg, C.A. (2004). 'Motor Learning and Performance' (3rd Edition). Champaign, IL: Human Kinetics Publishers.
- Schmidt, R.A., & Lee, T.D. (2005). 'Motor Control & Learning – A Behavioural Emphasis' (4th Edition). Champaign, IL: Human Kinetics Publishers.

Sport Psychology

- Cox, R.H. (2007). Sport Psychology: Concepts and Applications. (6th edition). New York: McGraw-Hill.
- Berger, B., Pargman, D., & Weinberg, R. (2002). Foundations of Exercise Psychology. Morgantown, WV: Fitness

Sport and Information Technology.

- Gill, D.L. (2000/2008). Psychological Dynamics of Sport and Exercise (2nd/3rd edition). Champaign, IL. Human Kinetics.
- Moran, A. (2004). Sport and Exercise Psychology: A Critical Introduction. London: Routledge.
- Weinberg, R.S., & Gould, D. (2003/2007). Foundations of Sport and Exercise Psychology. (3rd or 4th edition). Champaign, IL: Human Kinetics.

History of Sport

- John Lowerson (1995) - Sport and the English Middle Class 1870 – 1914. Manchester University Press
- Neil Wigglesworth (1996) - The Evolution of English Sport. Frank Cass
- Dennis Brailsford (1998) - British Sport A Social History. Lutterworth Press

Sport and Society

- Jay Coakley (1998) - Sport and Society Issues and Controversies. McGraw Hill
- Simon Barnes (2006) - The Meaning of Sport. Short Books
- Ellis Cashmore (2005) - Making Sense of Sport. Routledge
- Bevis, P & Murray, M. AQA AS Physical Education (2008) Nelson Thornes.

General

- Roscoe D, Davis B, Roscoe J. (2010). AS Revise PE for AQA Jan Roscoe Publications
- Bizley, K. (2009) AQA Physical Education. Nelson Thornes.
- Clegg, C. (1995) Exercise Physiology and Functional Anatomy. Feltham Press
- Walder, P. (1998) Mechanics and Sport Performance Feltham Press (1998)
- Honeybourne, Hill and Moors (2004) Advanced PE & Sport 3rd Edition
- Honeybourne (2006) An Introduction in Acquiring Skill in Sport
- James, Thompson, Wiggins-James (2010) The Complete A-Z Physical Education Handbook
- Jones and Hardy (2010) Stress and Performance in Sport
- Roberts (1992) Motivation in Sport and Exercise

3. Links to TED Talks/Articles/Documentaries/Books/Journals

TED Talks:

Are Athletes really getting faster, bigger and stronger:

https://www.ted.com/talks/david_epstein_are_athletes_really_getting_faster_better_stronger

The maths behind sports movement:

https://www.ted.com/talks/rajiv_maheswaran_the_math_behind_basketball_s_wildest_moves?ref

Are you born to run?

https://www.ted.com/talks/christopher_mcdougall_are_we_born_to_run?referrer=playlist-calling_all_sports_fans

Reading and websites:

Cardiovascular system <http://www.innerbody.com/image/cardov.html>

Respiratory system: <https://www.livescience.com/22616-respiratory-system.html>

Analysis of movement: <https://www.brianmac.co.uk/moveanal.htm>

Energy systems: <https://www.brianmac.co.uk/energy.htm>

Biomechanical principles: <https://www.grc.nasa.gov/www/k-12/airplane/newton.html>

Levers: <https://www.brianmac.co.uk/levers.htm>

Linear motion: <http://www.teachpe.com/biomechanics/linear-motion/speed-velocity>

Biomechanics / Angular motion: <https://www.brianmac.co.uk/biomechanics.htm>

Projectile motion: <http://www.physicsclassroom.com/Class/vectors/u3l2a.cfm>

Fluid mechanics:

<https://www.asu.edu/courses/kin335/documents/Fluid%20mechanics.pdf>