PiXL Gateway: Progression – PE

Year 12-13 PE

Contents:

I. PE Vocabulary

PE:

Currently, within the PE section of the app, we have the following units:

- Energy systems and skill acquisition
- Sport Psychology
- Sport and Society
- Biomechanics
- Cardiovascular, Respiratory, Neuromuscular

Energy systems and skill acquisition Keywords and Definitions

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.

Sport Psychology Keywords and Definitions

Word	Definition
trait	A trait is a distinguishing quality or characteristic of an individual which is genetically determined.
trait theory	Trait theory suggests that the personality of an individual is determined by their genetic make up.
social learning theories	Social learning theories suggest that the personality of an individual is determined by their environment.
interactionalist theories	Interactionalist theories suggest that the personality of an individual is determined by a combination of genetic and environmental factors.

attitude	Attitude is a way of thinking or feeling about something.
Hull's drive theory	Hull's drive theory suggests that there is a linear relationship between arousal and performance.
cognitive theories	Cognitive theories attempt to explain human behaviour by understanding thought processes.
aggression	Aggression is classed as any behaviour which has the intent to harm another.
assertive behaviour	Assertive behaviour is performing an act or skill with the sole intention of a successful outcome. There is no intent to cause harm.
hostile aggression	Hostile aggression is performing an aggressive act outside of the rules or laws of a sport with the main aim to cause harm to another person.
instrumental/ channelled aggression	Instrumental/channelled aggression is where the main aim of a performer is to execute a skill correctly using aggressive means. However, if the opponent is harmed whilst the skill is being executed this is an accepted part of the sport.
instinct theory	Instinct theory suggests that we are all born with an aggressive instinct that will reveal itself under provocation or threat.
aggressive cue theory	The aggressive cue theory suggests that aggression is caused by a learned cue or trigger.
motivation	Motivation is a drive to succeed created by internal and external factors and tangible and intangible rewards.
incentive	An incentive is a reward for potentially achieving a goal or target.
social facilitation	Social facilitation is an improvement in performance produced by the presence of others. It is sometimes also referred to as the audience effect.
social inhibition	Social inhibition is a decline in performance produced by the presence of others.
apprehension	Apprehension is fear that something bad or unpleasant may occur.
cohesion	Cohesion is a pair or group working together to achieve a common goal.
coordination	Coordination is the organisation of a group to enable them to work together effectively.
goal setting	Goal setting is the development of an action plan with the purpose of measuring progress and allowing individuals and teams to assess and make amendments, where required, to achieve success.
Weiner's attribution theory	Weiner's attribution theory suggests that performers attribute success or failure to four main areas: ability, effort, luck and task difficulty.
self-confidence	Self-confidence is having trust in yourself to achieve a specified goal or target.
verbal persuasion	Verbal persuasion is using words to encourage and convince someone to do something that they don't feel they are able to, or don't want to.
emotional arousal	Emotional arousal is the feelings of anxiety and stress that a performer may experience prior to performance.
democratic leadership	Democratic leadership involves allowing the group to take an active part in decision making.
stress	Stress is the body's response to mental or emotional pressure.
visualisation	Visualisation is creating a mental image or intention of something you would like to happen.
mental rehearsal	Mental rehearsal is the technique used to visualise a physical performance with the intention of reducing anxiety.

centering	Centering is a technique used by performers to control anxiety by relaxing the chest and shoulder muscles, whilst taking deep breaths.
Yerkes and Dodson inverted U theory	The inverted U theory suggests that an increase of arousal improves performance, but only up to an optimum level. After this point, arousal has a detrimental impact on performance, leading to a steady decline.
Hardy and Fazey catastrophe theory	The Hardy and Fazey catastrophe theory is an adapted version of the inverted U theory. The theory suggests that after the maximum optimum point of arousal, rather than a gradual decline in performance, there is a sudden negative impact and the performer is inhibited from performing to their highest standard.
anxiety	Anxiety is a feeling of nervousness, or unease, about something or an uncertain outcome.
Festinger's theory of cognitive dissonance	Festinger's theory of cognitive dissonance suggests that if a person holds two ideas that conflict with each other, a level of dissonance (emotional discomfort) occurs.
persuasive communication	Persuasive communication involves trying to change someone's attitude or opinion through a process of persuasive techniques.
Hanin zone of optimal functioning	The zone of optimal functioning is where an individual reaches a level of performance which is technically, physically and psychologically perfect (or as near to) as the individual is able to achieve.
somatic response	Somatic responses are physical responses caused by a stimulus.
cognitive response	Cognitive responses are the thought processes caused by a stimulus.
frustration aggression hypothesis	The frustration aggression hypothesis suggests that aggression is caused by a performer being prevented from achieving their objectives.
achievement motivation	Achievement motivation suggests that the personality of a performer will dictate how they approach a competitive situation.
need to achieve characteristics (NACH)	Need to achieve characteristics (NACH) are displayed by performers who seek out challenges and are motivated by competition.
need to avoid failure characteristics (NAF)	Need to avoid failure characteristics (NAF) are displayed by performers who are unwilling to accept challenges and avoid competition.
Zajonc's theory of social facilitation	Zajonc's theory of facilitation explained both the increase and decrease in performances of people in the presence of others.
Tuckman Model of Group Formation	The Tuckman model of Group Formation explained how a group is formed and subsequently developed.
Steiner's model of productivity	Steiner's model of productivity suggests a formula which determines the productivity of a group or team.
the Ringlemann effect	The Ringlemann effect suggests that an individual's effort and productivity decreases as group size increases.
social loafing	Social loafing is the tendency of an individual to exert less effort when working as part of a group in comparison to working alone.
learned helplessness	Learned helplessness is the feeling that failure is inevitable and there is no way to change the outcome.
Bandura's self-efficacy	Bandura's Self-efficacy is the strength of an individual's belief that they can perform a skill or activity successfully.
vicarious experience	Vicarious experience is knowledge you gain through the experience of others.

autocratic leadership	Autocratic leadership involves making decisions based on the beliefs of the leader and does not take into account advice or suggestions of others.
laissez faire leadership	Laissez-faire leadership involves the leader allowing the group to make their own decisions.
Fiedler's contingency theory	Fiedler's contingency theory suggests that there is no one leadership style which is best. Leadership will depend on the situation.
Chelladurai multi-dimensional model of sports leadership	Chelladurai's multi-dimensional model of sports leadership states that a leader will be more effective if the team's satisfaction with the leader is high. A team which is not satisfied with its leader will not demonstrate the same level of performance and satisfaction.
biofeedback	Biofeedback involves the measurement of the body's physiological responses to stress using objective techniques.
Easterbrook's cue utilisation theory	Easterbrook's cue utilisation theory suggests that amount of information processed during a performance has a direct impact on the level of arousal a performer experiences and, subsequently, the attentional style that a performer uses.

Sport and Society Keywords and Definitions

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 ethic 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.

Biomechanics Keywords and Definitions

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.

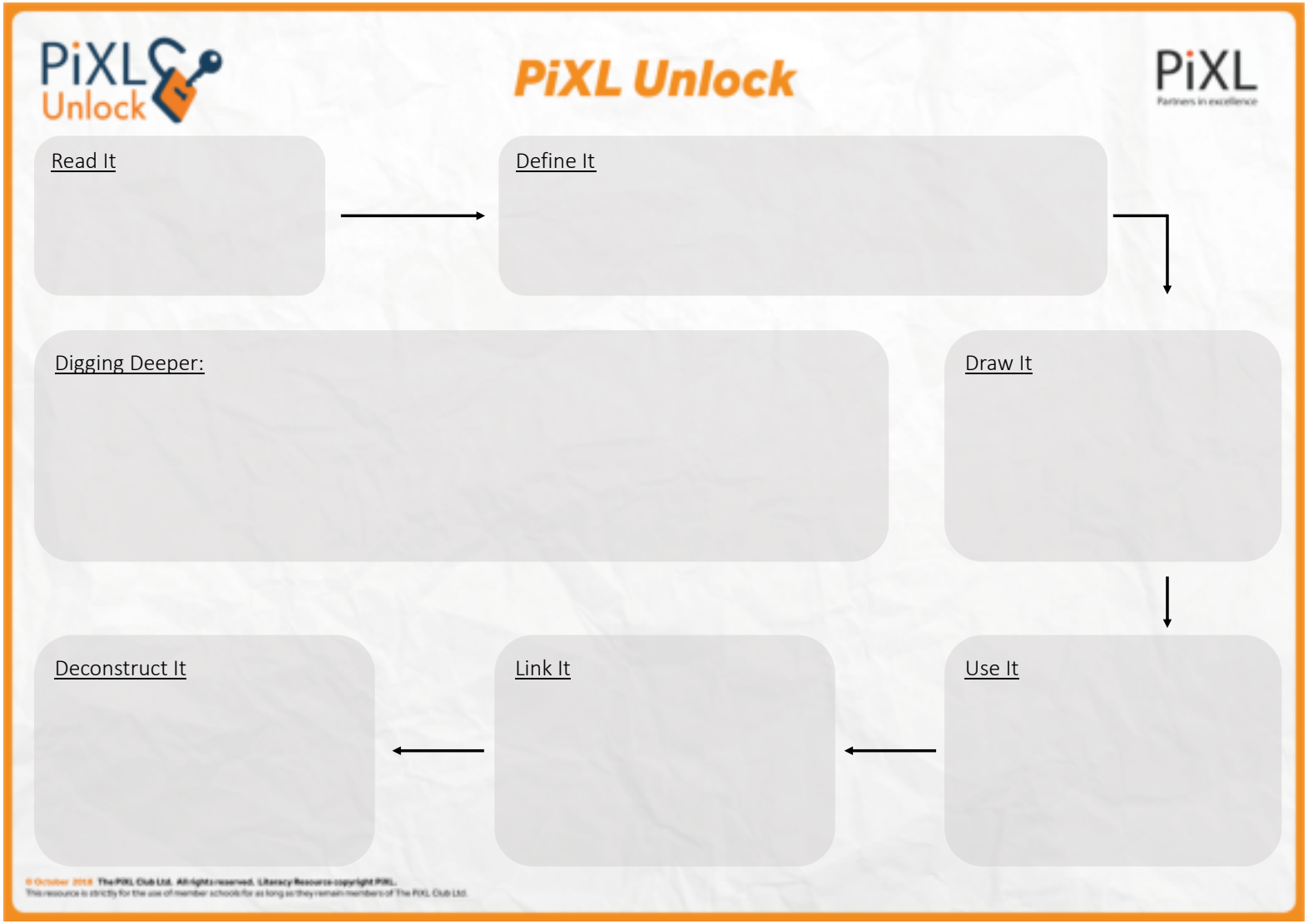
Cardiovascular, Respiratory, Neuromuscular Keywords and Definitions

Word	Definition
cardiac output	Cardiac output is the volume of blood ejected from the left ventricle per minute.
cholesterol	Cholesterol is a type of fat found in the blood. There are two types of cholesterol: HDL (high density lipoproteins) and LDL (low density lipoproteins).
stroke	A stroke is caused by a blockage in the cerebral artery or the bursting of a blood vessel within the brain.
anticipatory rise	Anticipatory rise is the upward rise of heart rate before exercise commences.

cardiac conduction	Cardiac conduction involves the electrical stimulation of the heart.
systolic	The systolic phase of the cardiac cycle is the contracting phase of the heart.
diastolic	The diastolic phase of the cardiac cycle is the relaxing phase of the heart.
residual volume	Residual volume is the amount of air that remains in a person's lungs after fully exhaling.
expiratory reserve volume	Expiratory reserve volume is the additional air that can be forcibly exhaled after the expiration of normal tidal volume.
inspiratory reserve volume	Inspiratory reserve volume is the additional air that can be forcibly inhaled after the inspiration of normal tidal volume.
tidal volume	Tidal volume is the volume of air inspired or expired per breath.
minute ventilation	Minute ventilation is the volume of air inspired or expired per minute.
diffusion	Diffusion is the movement of gases across a membrane, down a diffusion gradient.
partial pressure	Partial pressure is the pressure exerted by an individual gas held in a mixture of gases.
chemoreceptors	Chemoreceptors (a form of neural control) are located in the muscles, aorta and carotid arteries and they detect chemical changes in the blood stream.
proprioceptors	Proprioceptors (a form of neural control) are located in the muscles, tendons and joints and detect movement.
baroreceptors	Baroreceptors (a form of neural control) are located in the blood vessel walls and they detect an increase in blood pressure.
motor unit	A motor unit is the motor neuron and the muscle fibres stimulated by its axon.
muscle spindles	Muscle spindles are stretch receptors found in the belly of a muscle.
bicep femoris	The bicep femoris is a part of the hamstring group.
semimembranosus	The semimembranosus is a part of the hamstring group.
hyperextension	Hyperextension is the movement that increases the joint angle further than resting movement.
semitendinosus	The semitendinosus is a part of the hamstring group.
adduction	Adduction of a joint moves the articulating bone closer to the midline of the body.
plantar flexion	Plantar flexion increases the joint angle of the ankle.
dorsi flexion	Dorsi flexion decreases the joint angle of the ankle.
Adductor Longus Brevis and Magnus	The Adductor Longus Brevis and Magnus are located on the inside of the upper leg.
soleus	The soleus is the muscle located on the back of the lower leg.
vascular shunting	Vascular shunting is the redistribution of blood flow from one area of the body to another.

vasoconstriction	Vasoconstriction is the narrowing of arteries, arterioles and pre-capillary sphincters.
vasodilation	Vasodilation is the widening of arteries, arterioles and pre-capillary sphincters.
oxyhaemoglobin	Haemoglobin combines with four molecules of oxygen to form oxyhaemoglobin.
Bohr shift	The Bohr shift is the movement of the oxyhaemoglobin curve to the right.
Starling's law	Starling's law states that an increase in venous return leads to an increase in stroke volume.
cardiovascular drift	Cardiovascular drift is the upwards rise in heart rate associated with an increase in temperature.
golgi tendon	The golgi tendon senses proprioception and tension within a muscle.
horizontal abduction	Horizontal abduction is the movement of the limbs away from the midline of the body, parallel to the ground.
sympathetic nervous system	The sympathetic nervous system is responsible for increasing heart rate.
parasympathetic nervous system	The parasympathetic nervous system is responsible for decreasing heart rate.
haemoglobin	Haemoglobin is an iron-rich protein in red blood cells which can chemically combine with oxygen.
myoglobin	Myoglobin is an iron-rich protein found in the muscle tissues.
latissimus dorsi	The latissimus dorsi is located on both sides of the upper back, underneath the scapula.
iliopsoas	The iliopsoas is also known as the hip flexor muscle.
rectus femoris	The rectus femoris is one of four muscles in the quadriceps group, this is the only one that can flex the hip.
vastus lateralis	The vastus lateralis is one of four muscles in the quadriceps group. Its role is to extend the lower leg, allowing the body to rise from a squatting position.
vastus medialis	The vastus medialis is one of four muscles in the quadriceps group. This is not only involved in knee extension, but also enabling correct tracking of the patella.
vastus intermedius	The vastus intermedius is one of four muscles in the quadriceps group. It is below the rectus femoris and in between the vastus medialis and vastus lateralis.
gastrocnemius	The gastrocnemius is the main muscle in the calf.

II. The PiXL Unlock Template



III. Summer 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

IV. 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?referrer=playlist-super_nerdy_talks_about_sports

How will augmented reality change sports:
https://www.ted.com/talks/chris_kluwe_how_augmented_reality_will_change_sports_and_build_empathy?referrer=playlist-super_nerdy_talks_about_sports#t-21807

The tennis icon who paved the way for woman sports:
https://www.ted.com/talks/billie_jean_king_this_tennis_icon_paved_the_way_for_women_in_sports?referrer=playlist-calling_all_sports_fans

Are we born to run:
https://www.ted.com/talks/christopher_mcdougall_are_we_born_to_run?referrer=playlist-calling_all_sports_fans

Why boys and girls should play sports together:
https://www.ted.com/talks/john_brenkus_why_girls_and_boys_should_compete_with_each_other_in_sports

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

Diet and nutrition and their effect on physical activity and performance:
https://www.nutrition.org.uk/healthyliving/an-active-lifestyle/eating-for-sport-and-exercise.html?showall=1&limitstart=

Preparation and training methods in relation to physical activity and performance: https://coggle.it/diagram/WTfKjcAD7AAB6wQC/t/preparation-and-training-methods-in-relation-and-performance

Injury prevention and the rehabilitation of injury: http://www.stopsportsinjuries.org/STOP/Prevent_Injuries/Our_Resources.aspx

Development of elite performers flash cards: https://www.brainscape.com/flashcards/development-of-elite-performers-in-sport-6254494/packs/8587573

Ethics in sport: https://www.scu.edu/ethics/focus-areas/more/resources/what-role-does-ethics-play-in-sports/

Violence in sport: http://www.bodywatch.com/violence-in-sport/

Drugs in sport articles in the Guardian: https://www.theguardian.com/sport/drugs-in-sport

Sport and the law: https://www.inbrief.co.uk/sports-law/sport-and-the-law/

Impact of commercialisation: http://alevelphysicaleducation.co.uk/commercialisation/

Skill, skill continuums and transfer of skills: http://www.jroscoe.co.uk/downloads/roscoe850section2ch5only.pdf

Impact of skill classification on structure of practice for learning: https://getrevising.co.uk/diagrams/types_of_practice

Principles and theories of learning and performance: http://www.teachpe.com/sports_psychology/phases_learning.php

Efficiency of information processing: http://www.csus.edu/indiv/g/gipej/teaparty.pdf

Role of technology: http://www.topendsports.com/resources/technology.htm

V. Knowledge Organiser Template

VI. Thinking Hard Revisit Template

Name of Topic: _____

Name: _____

Class: _____

Read the text and then put your thoughts in to different boxes so that you have 'boxed up' the text.

Box 1 – 3 things I did not know
Box 2 – 3 things I understand better now
Box 3 – 3 things I already knew

VII. A Model of the Thinking Hard Revisit document

Name of Topic: Are athletes really getting faster, bigger and stronger

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

Name: PiXL Example

Class: _____

Read the text and then put your thoughts in to different boxes so that you have 'boxed up' the text.

Box 1 – 3 things I did not know - **Marathon times were 1.5 hours slower in 1904 than in 2012** - **Jesse Owen in 1936 ran 100m in 10.2 seconds. Usain Bolt ran 100m in 9.77 seconds in 2013. However if Jesse Owen had also run on the same athletics track as Usain Bolt he would have only been 1 stride away from Usain Bolt as Jesse Owen ran on a cinder track.** - **"Big bang" of bodies in sport.** - **Kenyan runners have unique physiology of thin extremities matched to the climate of the country. They are long and thin for cooling purposes.**
Box 2 – 3 things I understand better now - **Sport is improving due to technology, gene pool and a different mindset.** - **The gene pool has changed. In 1920s all athletes were the same size. Shot putters are now much heavier, basketballers much taller.** - **Leonardo de Vinci's 'Vitruvian man' had the arm span and body height as equal. NBA basketballers have an average height of 6"7 but have arms with a length of 7ft.** - **Mindset has helped to improve athletes.** - **Once ultra endurance was seen as a way of damaging the body. Now it is not. Humans have lots of sweat glands, narrow waists, long legs compared to our frames, large surface area of joints for shock absorption and an arch in our feet to help with pushing off.**
Box 3 – 3 things I already knew - **In swimming there have been 3 peaks where times got faster.** - **1956 when turns were introduced** - **1976 when gutters were introduced to help with the water** - **2008 when low friction swim suits were introduced.**

Name of Topic: **Energy systems - https://www.brianmac.co.uk/energy.htm**

Name: PiXL example

Class: _____

Take a section of the text and do the following:

Prioritise: Underline the three most important sentences here. Rank 1-3, briefly explain number 1. Cross out the least important sentence

1. ATP chemical compound released from food and stored in cells. Cells cannot perform work without this energy release.
   ~~1-4 seconds of aerobic exercise.~~
   CP chemical compound when broken down helps manufacture ATP
   Lactic acid results from a lack of breakdown of glucose.
   ~~10-45 seconds anaerobic + ATP-PC + muscle glycogen.~~
   O2 – Aerobic – ATP manufactured from food. Produces lots of ATP and is the prime energy source.
   ~~45-120 seconds anaerobic lactic – muscle glycogen~~
   ~~120-240 seconds aerobic anaerobic muscle glycogen & lactic acid~~
   ~~240 – 600 seconds aerobic – muscle glycogen + fatty acids.~~

2. Reduce: Reduce the key information into 12 words

Energy production
Glucose + 2ATP = Pyruvic acid = Lactic acid + 2 ATP

Aerobic energy system
Utilises proteins, fats and carbohydrates for ATP.

3. Transform: Transform this information into 4 pictures or images (no words allowed)

Can these be re drawn please as cartoons?

4. Categorise: Sort this information into three categories. Highlight and think of a suitable title for each category.

Energy pathways
Energy timings
Energy production

5. Extend: Write down three questions you'd like to ask an expert in this subject.

Why is only 2 ATP produced with the use of pyruvic acid?
Why does energy production take place in mitochondria and why are these cells specialised?
What is the difference between the glycolytic system and the phosphagen system?

VIII. Cornell Notes Template

Name	Date
Topic	Subject

Main Ideas	Notes

Summary

IX. A Model of the Cornell Notes document

Name - PiXL Example	Date April 2019
Topic - Biomechanics	Subject: Projectiles

Main Ideas

A projectile is an object upon which the only force acting is gravity.

There are a variety of examples of projectiles. An object dropped from rest provided that the influence of air resistance is negligible. An object that is thrown vertically upward provided that the influence of air resistance is negligible. An object which is thrown upward at an angle to the horizontal provided that the influence of air resistance is negligible.

Notes

A projectile has a single force that acts upon it - the force of gravity.

If there were any other force acting upon an object, then that object would not be a projectile.

By definition, a projectile is any object upon which the only force is gravity.

A projectile is an object upon which the only force is gravity. Gravity acts to influence the vertical motion of the projectile, causing a vertical acceleration.

The horizontal motion of the projectile is the result of the tendency of any object in motion to remain in motion at constant velocity.

Due to the absence of horizontal forces, a projectile remains in motion with a constant horizontal velocity.

Horizontal forces are not required to keep a projectile moving horizontally. The only force acting upon a projectile is gravity!

Summary

A projectile is any object that once projected or dropped continues in motion by its own inertia and is influenced only by the downward force of gravity.