A Level PE Curriculum Map - Section 1.

	Topic	Essential Knowledge and Skills
Year 1 **Autumn Term**	1.1.a. Skeletal and muscular systems	shoulder: • flexion, extension, abduction, adduction, horizontal flexion/ extension, medial and lateral rotation, circumduction • deltoid, latissimus dorsi, pectoralis major, trapezius, teres minor elbow: • flexion, extension • biceps brachii, triceps brachii wrist: • flexion, extension • wrist flexors, wrist extensors hip: • flexion, extension, abduction, adduction, medial and lateral rotation • iliopsoas, gluteus maximus, medius and minimus, adductor longus, brevis and magnus knee: • flexion, extension • hamstring group: biceps femoris, semi-membranosus , semi-tendinosus • quadriceps group: rectus femoris, vastus lateralis, vastus intermedius and vastus medialis ankle: • dorsi flexion, plantar flexion • tibialis anterior • soleus, gastrocnemius planes of movement: • frontal • transverse • sagittal. roles of muscles: • agonist • antagonist • fixator types of contraction: • isotonic • concentric • eccentric • isometric. structure and role of motor units in skeletal muscle contraction nervous stimulation of the motor unit: • motor neuron • action potential • neurotransmitter • 'all or none' law. muscle fibre types: • slow oxidative • fast oxidative glycolytic • fast glycolytic recruitment of different fibre types during exercise of differing intensities and during recovery.

	1.1.b. Cardiovascular and respiratory systems	the relationship between, and resting values for: • heart rate • stroke volume • cardiac output • methods of calculating the above cardiac cycle: • diastole • systole conduction system of the heart linked to the cardiac cycle effects of different exercise intensities and recovery on: • heart rate • stroke volume • cardiac output • methods of calculating the above redistribution of cardiac output during exercise of differing intensities and during recovery: • vascular shunt mechanism • role of the vasomotor centre • role of arterioles • role of pre-capillary sphincters mechanisms of venous return during exercise of differing intensities and during recovery regulation of heart rate during exercise: • neural factors • hormonal factors • intrinsic factors relationship between resting values for: • breathing frequency • tidal volume • minute ventilation • methods of calculating the above mechanics of breathing at rest and the muscles involved: • diaphragm • external intercostals • at the alveoli • at the muscles effects of differing intensities of exercise and recovery on: • breathing frequency • tidal volume • minute ventilation mechanics of breathing during exercise of differing intensities and during recovery, including additional muscles involved: • inspiration – sternocleidomastoid, pectoralis minor • expiration – internal intercostals, rectus abdominis regulation of breathing during exercise of different intensities and during recovery • neural control • chemical control effect of differing intensities of exercise and recovery on gas exchange at the alveoli and at the muscles • changes in pressure gradient • changes in dissociation of oxyhaemoglobin
Year 1 Spring Term	1.2.a. Diet and nutrition and their effect on physical activity and performance	function and importance of the components of a healthy, balanced diet: • carbohydrates • proteins • fats • minerals • vitamins • fibre • water energy intake and expenditure and energy balance in physical activity and performance. use of ergogenic aids; potential benefits and risks: • pharmacological aids: anabolic steroids, erythropoietin (EPO), human growth hormone (HGH) • physiological aids: blood doping, intermittent hypoxic training (IHT), cooling aids • nutritional aids: amount of food, composition of meals, timing of meals, hydration,

		glycogen/carbohydrate loading, creatine, caffeine, bicarbonate, nitrate
	1.2.b. Preparation and training methods in relation to improving and maintaining physical activity and performance	aerobic capacity and maximal oxygen uptake (VO2 max) how VO2 max is affected by: • individual physiological make-up • training • age • gender methods of evaluating aerobic capacity: • laboratory test of VO2 max using direct gas analysis • NCF multi-stage fitness test • Queen's College step test • Cooper 12 minute run intensity and duration of training used to develop aerobic capacity: • continuous training • high intensity interval training (HIIT) the use of target heart rates as an intensity guide physiological adaptations from aerobic training: • cardiovascular • respiratory • muscular • metabolic activities and sports in which aerobic capacity is a key fitness component types of strength: • strength endurance • maximum strength • explosive/elastic strength • static and dynamic strength factors that affect strength: • fibre type • cross sectional area of the muscle methods of evaluating each type of strength: • grip strength dynamometer • 1 Repetition Maximum(1RM) • press up or sit-up test • vertical jump test training to develop strength: • repetitions • sets • resistance guidelines used to improve each type of strength • use of multi-gym • weights • plyometrics • circuit/interval training: work intensity, work duration, relief interval, number of work/relief intervals physiological adaptations from strength training: • muscle and connective tissues • neural • metabolic activities and sports in which strength is a key fitness component - types of flexibility: • static flexibility (active and passive) • dynamic flexibility - factors that affect flexibility: • type of joint • length of surrounding connective tissue • age • gender - methods of evaluating flexibility: • sit and reach test • goniometer - training used to develop flexibility: • passive stretching • proprioceptive neuromuscular facilitation (PNF) • static stretching • dynamic stretching •

		ballistic stretching • isometric stretching - physiological adaptations from flexibility training: • muscle and connective tissues - activities and sports in which flexibility is a key fitness component. - periodisation cycles: • macrocycle • mesocycle • microcycle - phases of training: • preparatory • competitive • transition - tapering to optimise performance - how to plan personal health and fitness programmes for aerobic, strength and flexibility training the effect of training on lifestyle diseases: • cardiovascular system: coronary heart disease (CHD), stroke, atherosclerosis, heart attack • respiratory system, asthma, chronic obstructive pulmonary disease (COPD)
Year 1 **Summer Term**	1.3.a. Biomechanical principles, levers and the use of technology	Define and apply Newton's laws of motion: • Newton's first law: inertia • Newton's second law: acceleration • Newton's third law: reaction Force: • net force • balanced and unbalanced force • weight • reaction • friction • air resistance • factors affecting friction and air resistance and their manipulation in sporting performance • free body diagrams showing vertical and horizontal forces acting on a body at an instant in time and the resulting motion • calculations of force, momentum, acceleration and weight • definition of centre of mass • factors affecting the position of the centre of mass • the relationship between centre of mass and stability components of a lever system: • load • effort • fulcrum • effort arm • load arm 1st class lever 2nd class lever 3rd class lever mechanical advantage of a 2nd class lever definitions and uses of: • limb kinematics • force plates • wind tunnels how each type of technology may be used to optimise performance in sport
	EAPI Coursework	
Year 2	EAPI Coursework	

Autumn Term	1.1.c. Energy for exercise	ATP as 'energy currency' principle of energetically coupled reactions: breakdown of ATP to ADP (Adensosine Diphosphate) + P (phosphate), resynthesis of ATP from ADP + P. energy systems: • ATP-PC (Phosphocreatine) system • glycolytic system • aerobic system for each system: • type of reaction (aerobic or anaerobic) • chemical or food fuel used • specific site of the reaction • controlling enzyme • ATP yield • specific stages within the system • by-products the energy continuum predominant energy system used during exercise: • how intensity and duration of exercise influence which energy system is predominantly used to resynthesise ATP • interpretation of figures relating to the contribution of the three energy systems to exercise of different intensities and durations interplay of energy systems during intermittent exercise and factors that affect this interplay • intensity of exercise • duration of exercise • recovery periods • fitness levels how the body returns to its pre-exercise state: • Excess Post exercise Oxygen Consumption (EPOC) fast components of EPOC, the processes that occur and the duration: • replenishment of blood and muscle oxygen stores • re-synthesis of ATP and PC slow components of EPOC, the processes that occur and the duration: • elevated circulation • elevated ventilation • elevated body temperature • lactate removal and conversion to glycogen effect of exercise intensity on EPOC and implications of the recovery process for planning exercise or training sessions
	1.1.d. Environmental effects on body systems	effect of altitude on the cardiovascular and respiratory systems: • reduced arterial PO2 (partial pressure of oxygen) leading to impaired muscle O2 delivery • elevated heart rate and ventilation acclimatisation, including the importance of timing arrival, at altitude (above 2400m) effect of heat on the cardiovascular and respiratory systems: • temperature regulation • cardiovascular drift
Year 1 **Spring Term**	1.2.c. Injury prevention and the rehabilitation of injury	acute injuries resulting from a sudden stress to the body: • hard tissue injuries • soft tissue injuries • concussion • chronic injuries resulting from continuous

		stress to the body: • soft tissue injuries • hard tissue injuries intrinsic risk factors: • individual variables • training effects extrinsic risk factors: • poor technique/training • incorrect equipment/clothing • inappropriate intensity, duration or frequency of activity debate surrounding effective warm up and cool down assessing sporting injuries using 'SALTAPS' • See • Ask • Look • Touch • Active • Passive • Strength acute management of soft tissue injuries using 'PRICE' • Protection • Rest • Ice • Compression • Elevation recognising concussion: IRB's 'Recognise and Remove' 6 R's • Recognise • Remove • Refer • Rest • Recover • Return treatment of common sporting injuries: • injuries:fractures – simple, stress, joint injuries, dislocation, sprain, torn cartilage, exercise-induced muscle damage treatments: stretching, massage, heat, cold and contrast therapies, anti-inflammatory drugs, physiotherapy, surgery
	1.3.b. Linear motion, angular motion, fluid mechanics and projectile motion	definition of linear motion. creation of linear motion by the application of a direct force through the centre of mass definitions, calculations and units of measurement for each of the following quantities of linear motion: • distance • displacement • speed • velocity • acceleration/deceleration plot and interpret graphs of linear motion: • distance/time graphs • speed/time graphs • velocity/time graphs definition of angular motion creation of angular motion through the application of an eccentric force about one (or more) of the three axes of rotation: • longitudinal • frontal • transverse definitions, calculations and units of measurement for each quantity of angular motion: • moment of inertia • angular velocity • angular momentum factors affecting the size of the moment of inertia of a rotating body: • mass of the body (or body part) • distribution of the mass from the axis of rotation the relationship between moment of inertia and angular velocity the conservation of angular momentum during flight in relation to the angular analogue of Newton's first law of motion interpret graphs of angular velocity, moment of inertia and angular momentum factors that impact the magnitude of air resistance (on land) or drag (in water) on a

		body or object: • velocity • mass • frontal cross-sectional area • streamlining and shape • surface characteristics factors affecting the horizontal distance travelled by a projectile: • height of release • speed of release • angle of release free body diagrams showing the forces acting on a projectile once in flight: • weight • air resistance resolution of forces acting on a projectile in flight using the parallelogram of forces patterns of flight paths as a consequence of the relative size of air resistance and weight • parabolic (symmetrical) flight path (shot put) • non-parabolic (asymmetric) flight path (badminton shuttle) The addition of lift to a projectile through the application of Bernoulli's principle: • angle of attack to create an upwards lift force on a projectile: (discus , javelin, ski jumper) design of equipment to create a downwards lift force: F1 racing cars, track cycling use of spin in sport to create a Magnus force, causing deviations to expected flight paths: • imparting spin to a projectile through the application of an eccentric force • types of spin: top spin, side spin and backspin in tennis and table tennis, side spin in football, hook and slice in golf
Year 2 Summer Term	Revision	

A Level PE Curriculum Map - Section 2.

	Topic	**Essential Knowledge and Skills**
Year 12 Autumn - Spring Term	2.1 Skill Acquisition	justification of placement of skills on continua: • difficulty (simple/complex) • environmental influence (open/closed) • pacing (self-paced/externally paced) • muscular involvement (gross/fine) • continuity (discrete/serial/continuous) • organisation (low/high) characteristics and uses of each: • part practice • whole practice • whole/part-whole practice • progressive/part practice • massed practice • distributed practice • fixed practice • varied practice types of transfer: • positive • negative • proactive • retroactive • bilateral know and understand the ways of optimising the effect of positive transfer

		know and understand the ways of limiting the effect of negative transfer theories of learning: • operant conditioning • cognitive theory of learning • Bandura's theory of social/observational learning characteristics of the stages of learning: • cognitive • associative • autonomous types and uses of guidance: • verbal guidance • visual guidance • manual guidance • mechanical guidance advantages and disadvantages of using each type of guidance types and uses of feedback: • intrinsic • extrinsic • positive • negative • knowledge of performance • knowledge of results advantages and disadvantages of using each type of feedback Atkinson and Shiffren's multi-store memory model • use of selective attention Craik and Lockhart's levels of processing model relate both models to learning and performing physical activity skills
Year 12 Summer - Year 13 Spring Term.	2.2 Sports psychology	- personality • definition of personality • theories of personality: (trait, extroversion/introversion, stable/unstable, type a/type b, social learning, interactionist) - attitudes • definition of attitude • factors affecting attitude formation • components of attitude: (cognitive, affective, behavioural) • methods of attitude change: (persuasive communication, cognitive dissonance) - motivation • definitions of: intrinsic motivation, extrinsic motivation • uses and effects of: intrinsic motivation, extrinsic motivation - arousal • definition of arousal • effects of arousal: drive theory, inverted U theory, catastrophe theory - anxiety • definition of anxiety • types of anxiety: state and trait • response to anxiety: somatic and cognitive, zone of optimal functioning. - aggression • definition of aggression • theories of aggression: instinct, social learning, frustration-aggression hypothesis, aggressive cue hypothesis - social facilitation • definition of social facilitation and social inhibition • the effect of an audience on: introverts/extroverts, beginners/experts, simple/complex skills, gross/fine skills • evaluative apprehension • strategies to minimise social inhibition - definition of a group - the formation of groups and sports teams using stages of group development • forming • storming • norming • performing

		- Steiner's model of group effectiveness - Ringelmann effect and social loafing - importance and effectiveness of goal setting • for attentional focus • persistence on tasks • raising confidence and self-efficacy • control of arousal and anxiety • to monitor performance • the SMART principle (Specific, Measurable, Achievable, Recorded, Time phased) - Weiner's model of attribution • stability dimension (unstable and stable) • locus of causality dimension (internal and external) • controllability dimension - learned helplessness as a barrier to sports performance - mastery orientation to optimise sports performance - definitions of sports confidence and self-efficacy - the impact of sports confidence on: • performance • participation • self-esteem - Vealey's model of sports confidence: • trait sports confidence • competitive orientation • state sports confidence • subjective perceptions of outcome - Bandura's theory of self efficacy: • performance accomplishments • vicarious experiences • verbal persuasion • emotional arousal - characteristics of effective leaders - emergent or prescribed leaders - leadership styles • autocratic • democratic • laissez-faire - theories of leadership • trait perspective • social learning • interactionist - Chelladurai's multi-dimensional model of sports leadership - definition and causes of stress - use of cognitive stress management techniques: • positive thinking/self-talk • negative thought stopping • rational thinking • mental rehearsal • imagery • goal setting • mindfulness - use of somatic stress management techniques: • progressive muscular relaxation • biofeedback • centring technique • breathing control.

A Level PE Curriculum Map - Section 3.

	Topic	Essential Knowledge and Skills
Year 12 Autumn Term	3.2 Sport and Society	how social and cultural factors shaped the characteristics of, and participation in, sports and pastimes in pre-industrial Britain: • social class • gender • law and order • education/literacy • availability of time • availability of money • type and availability of transport how social and cultural factors shaped the characteristics of, and participation in, sport in post 1850 industrial Britain: • social class (amateurism and professionalism) • gender/changing status of women • law and order • education/literacy • availability of time/changing work conditions • availability of money • transport notably the railways • influence of public schools (on the promotion and organisation of sports and games, on the promotion of ethics through sports and games, the 'cult' of athleticism, meaning, nature and impact, on the spread and export of games and the games ethic) how social factors shaped the characteristics of, and participation in, sport in 20th century Britain: • class (amateurism and professionalism) • gender/changing role and status of women • law and order • education • availability of time • availability of money • transport how contemporary factors are shaping the characteristics of, and participation in, sport in the 21st century: • class (amateurism and professionalism) • gender/changing role and status of women • law and order • education • availability of time • availability of money • transport • globalisation of sport (media coverage, freedom of movement for performers, greater exposure of people to sport)
Year 12 Spring - Summer Term		the modern Olympic Games • background and aims (1896) • political exploitation of the Olympic Games (Berlin 1936, Third Reich Ideology, Mexico City 1968 'Black Power' demonstratio, Munich 1972 Palestinian terrorism, Moscow 1980 boycott lead by USA, Los Angeles 1984 boycott by Soviet Union) hosting global sporting events • positive and negative impacts on the host country/city of hosting a global sporting event (such as the Olympic Games or FIFA World Cup) (sporting, social, economic, political)
Year 13 Autumn -	3.2 Contemporary issues in	- drugs and doping in sport • legal supplements versus illegal drugs and

Spring Term	physical activity and sport	doping • reasons why elite performers use illegal drugs/doping • consequences/implications to: society, sport, performers - strategies to stop the use of illegal drugs and doping - violence in sport • causes in relation to players and spectators • implications to: society, sport, performers - strategies to prevent violence in relation to players and spectators - gambling in sport • match fixing/bribery • illegal sports betting - factors leading to the commercialisation of contemporary physical activity and sport: • growing public interest and spectatorship • more media interest • professionalism • advertising • sponsorship - positive and negative impacts of the commercialisation of physical activity and sport on • society • individual sports • performers • spectators - coverage of sport by the media today and reasons for changes since the 1980s • television, terrestrial, free-to-air, satellite, subscription, pay-per-view • radio, dedicated sports stations, local and national radio • written press, newspapers, magazines • internet - positive and negative effects of the media on sport • individual sports • performers • spectators - relationship between sport and the media • sport as a commodity • links with advertising and sponsorship ('golden triangle') - development routes from talent identification through to elite performance - the role of school, clubs, universities in contributing to elite sporting success - the role of UK Sport and National Institutes in developing sporting excellence/high performance sport - strategies to address drop-out/failure rates from elite development programmes/at elite level - Elite performance: • the extent to which modern technology has affected elite level sport including increased/improved: access, facilities, equipment, monitoring of exercise, safety - General participation: • the extent to which modern technology has increased participation including increased/improved: access, facilities, equipment, monitoring of exercise, safety. the extent to which modern technology has limited or reduced participation including: cost, the range of alternatives to physical activity and sport

		- Fair outcomes: the extent to which modern technology has increased fair outcomes including: better timing devices, increased accountability of officials, more accurate decision making, improved detection of foul play, improved detection of doping - the extent to which modern technology has limited or decreased fair outcomes including: access to modern technology can be limited, performance enhancing drug testing technology cannot keep up with new drug development, pressure on officials due to the exposure and scrutiny of their decisions - Entertainment: the extent to which modern technology has increased entertainment including: action replays, multiple camera angles, slow motion technology, improved analysis, punditry • the extent to which modern technology has reduced or limited entertainment including: interruption and delay, reduced live attendances