GCSE Physical Education 2016: Scheme of learning

Wood Green Academy AND SIXTH FORM CENTRE

Scheme of Learning **Curriculum area: PE**

Key Stage: 4

Unit/Topic Title: GCSE Components 1 & 2

Topic 1 - Applied Anatomy and Physiology (Paper 1: Fitness and Body Systems)				
Week	**Topic**	**Content**	**Prior Learning**	**Resources**
	Skeletal system – functions applied to performance in physical activities and sports	Explanation of function applied to physical activity Protection of vital organs, muscle attachment, joints for movement, platelets, red and white blood cell production, storage of calcium and phosphorus	Students should be aware of what the skeleton is and (with support) be able to identify **some** of its functions. With support identify which organs the skeleton protects. Use of 'Bones make moving joints possible'	Applied Anatomy and Physiology Topic Guide, activity 1 Past papers 2016 specification Functions of the skeleton video www.youtube.com/watch?v=X8GuNvNnk40&feature=youtu.be Skeletal system learning mat BBC GCSE Bitesize – Skeletal System https://www.bbc.co.uk/bitesize/examspecs/zxbg39q White revision guide – page 4
	Skeletal system – classification of bones and how function of bone type is relevant to	Long (leverage), short (weight bearing), flat (protection, broad surface	Students will be aware that they have different bones in the	Applied Anatomy and Physiology Topic Guide, activity 2 Bone classification video www.youtube.com/watch?v=WhWEAF5i7iw

	performance in physical activities and sports	for muscle attachment), irregular (protection and muscle attachment) applied	body but may not be aware of all classifications or functions.	Bone classification – Flip Task – https://www.youtube.com/watch?v=cWxXziVkVOA BBC GCSE Bitesize – Skeletal System https://www.bbc.co.uk/bitesize/examspecs/zxbg39q White revision guide – page 5 Functions of the skeleton – Flip task – https://www.youtube.com/watch?v=RxprXjSybhI&t=53s Joints and Movement – flip task https://www.youtube.com/watch?v=MeRM77awEE0
	Skeletal system – structure of the skeletal system Role of ligaments/tendons	Identification of bones: Cranium, clavicle, scapula, five regions of the vertebral column (cervical, thoracic, lumbar, sacrum, coccyx), ribs, sternum, humerus, radius, ulna, carpals, metacarpals,	Students should know the name of some bones in the body but not necessarily the location. Will have heard of key	Applied Anatomy and Physiology Topic Guide, activity 3 Label body activity Learning mat Types of joints www.youtube.com/watch?v=ijCFTMlSvCo&feature=youtu.be Ligaments and Tendons Video www.youtube.com/watch?v=hCrmPpDqp2k

		phalanges (in the hand), pelvis, femur, patella, tibia, fibula, tarsals, metatarsals, phalanges (in the foot). Relevance to participation in physical activity and sport	terminology (ie. Ligaments and tendons) but may not be aware of their role in sporting movement	BBC GCSE Bitesize – Skeletal System https://www.bbc.co.uk/bitesize/examspecs/zxbg39q Skeletal Flip task – https://www.youtube.com/watch?v=cWxXziVkVOA White revision guide – page 8

	Muscular system – classification and their roles when participating in physical activity and sport Characteristics and location	Voluntary muscles of the skeletal system, involuntary muscles in blood vessels, cardiac muscle forming the heart,	With support students maybe able to identify different types of muscle.	Diagrams of differences between muscle types – learners to annotate Article about types of muscle www.teachpe.com/anatomy/types_of_muscle.php
	Muscular system (voluntary) – location and role	Deltoid, biceps, triceps, pectoralis major, latissimus dorsi, external obliques, hip flexors, gluteus maximus, quadriceps, hamstrings, gastrocnemius and tibialis anterior	Students should know the name of some muscles and some locations.	'Big bodies' Muscle diagram (posterior/anterior view) for learners to label BBC GCSE Bitesize – Muscular System https://www.bbc.co.uk/bitesize/examspecs/zxbg39q White revision guide pgs 8-9

	Muscular system – antagonistic muscle pairs	Definitions of terms (agonist and antagonist) Gastrocnemius and tibialis anterior acting at the ankle plantar flexion to dorsiflexion; and quadriceps and hamstrings acting at the knee, biceps and triceps acting at the elbow, and hip flexors and gluteus maximus acting at the hip – all flexion to extension	Students should know the name of different muscle types and locations. Student maybe aware of muscle pairs.	Matching cards Definition cards Applied Anatomy and Physiology Topic Guide, activity 5 Antagonistic muscle pair video www.youtube.com/watch?v=A4Qcjzj3Zs8 Musculoskeletal – Flip task – https://www.youtube.com/watch?v=JC-IQzIsIvo&list=PLUb-9-TpmYV8g_fw21EFEIjXtg98Gq4VS&index=10
	Muscular system – fast and slow twitch muscle fibres and how fibre type impacts on their use in physical activities	type I, type IIa and type IIx	Students should know different types of sporting events and with support be able to link them to the correct muscle type.	Applied Anatomy and Physiology Topic Guide, activity 6 Muscle fibres explained www.youtube.com/watch?v=3L9JUfzh66I White revision guide pg 9 Recall & Test – pgs 18 & 56 MFTs Flip task – https://www.youtube.com/watch?v=Wqe0xIHx17E
	Cardiovascular system –	Transport of oxygen, carbon	Students should know the basic reasons why heart	Applied Anatomy and Physiology Topic Guide, activity 7

	function applied to performance in physical activities Structure of the cardiovascular system applied to performance in physical activities	dioxide and nutrients, clotting of open wounds, regulation of body temperature Atria, ventricles, septum, tricuspid, bicuspid and semi-lunar valves, aorta, vena cava, pulmonary artery, pulmonary vein, and their role in maintaining blood circulation during performance in physical activity and sport	rate increases with exercise. Students know the location of the heart.	Diagram of heart – learners to annotate CV System explained www.youtube.com/watch?v=CRjpWWuDNzI&feature=youtu.be&t=4
	Cardiovascular system – arteries, capillaries and veins	Structure of arteries, capillaries and veins and how this relates to function and importance during physical activity and sport in terms of: blood pressure;	Students maybe aware of the basic journey of blood around the body with guidance. With support students should be able to identify the role of oxygenated and deoxygenated blood	Diagrams of differences between blood vessels – learners to annotate Article about blood vessels www.bbc.com/bitesize/guides/z9n6sg8/revision/2

		oxygenated; deoxygenated blood and changes due to physical exercise		
	Cardiovascular system – vascular shunting	The mechanisms required (vasoconstriction, vasodilation) and the need for redistribution of blood flow (vascular shunting) during physical activities compared to when resting	With guidance students should be aware of the redirection of blood.	Applied Anatomy and Physiology Topic Guide, activity 8
	Cardiovascular system – function and importance of components of blood for physical activity and sport	Red and white blood cells, platelets and plasma	Knowledge that red blood cells carry oxygen.	Scenario cards, 'what would happen if…' 'A day in the life of a red blood cell' www.youtube.com/watch?v=4GUYdaM3QIY
	Respiratory system – composition of air	Composition of inhaled and exhaled air and the difference between the two	Be aware of the relationship between the CV system and respiratory system (oxygenated/deoxygenated blood).	Applied Anatomy and Physiology Topic Guide, activity 9 Introduction to the respiratory system www.youtube.com/watch?v=hc1YtXc_84A

		at rest and when exercising	Difference between inhaling and exhaling.	

	Respiratory system – location of main components and the role in movement of oxygen and carbon dioxide into and out of the body	Lungs, bronchi, bronchioles, alveoli, diaphragm	Identification of the lungs and basic role.	Diagrams of respiratory system – learners to annotate
	Respiratory system – structure and function of alveoli	Structure of alveoli Process of gas exchange Impact of varying intensities of exercise (aerobic and anaerobic)	Difference between aerobic and anaerobic activities. Knowledge of structure of respiratory system.	Diagrams of enlarged alveoli to allow learners to annotate what happens during gas exchange Gaseous exchange video www.youtube.com/watch?v=XTMYSGXhJ4E Gaseous exchange Flip task – https://www.youtube.com/watch?v=RxprXjSybhI&t=53s Article aerobic respiration www.bbc.com/bitesize/guides/zm6rd2p/revision/1 Article anaerobic respiration www.bbc.com/bitesize/guides/zm6rd2p/revision/2

	Energy sources	Fats as a fuel source for aerobic activity, carbohydrates as a fuel source for aerobic and anaerobic activity	Types of food and benefits they provide. Difference between aerobic and anaerobic respiration.	Practical session - Applied Anatomy and Physiology Topic Guide, activity 10 Functions of the CV system Flip task – https://www.youtube.com/watch?v=H2jcV2FwLNc
	Aerobic and anaerobic exercise Short term effects of exercise and the relevance of this	The use of glucose and oxygen to release energy aerobically with the production of carbon dioxide and water, the impact of insufficient oxygen on energy release, the by-product of anaerobic respiration (lactic acid) Muscular: lactate accumulation,	Understanding of carbon dioxide and lactic acid. Key terms: Heart rate, stroke volume and cardiac output	

	to the player/performer	muscle fatigue CV: heart rate, stroke volume and cardiac output Respiratory: on depth and rate of breathing		
TOPIC 3 Physical Training Unit Component 1				
	Using a Personal Exercise Programme (PEP) to develop personal health/introduction to PEP. Fitness, health, exercise and performance.		Flipped learning- to research what a personal exercise programme is for and use the specification to create a PowerPoint presentation explaining the PEP	Definition cards Assessment material for Component 4
	PARQs Health & Fitness		Links to the immediate effects of exercise on the body systems Keeping fit and healthy through sports	Learner PEP Example PARQs GCSE Bitesize: https://www.bbc.co.uk/bitesize/guides/zxd4wxs/revision/1 Kerboodle Textbook – pg 56 White revision guide - pg

	Warm ups and cool downs			Kerboodle Textbook – pg 103-4 Practical session using a variety of warm ups – could be learner led. Cool down to finish
	Components of fitness and the relative importance of these components in physical activity and sport		Linked to Health, Fitness and wellbeing unit. Should already know the definitions and be able to give sporting examples	Physical Training Topic Guide, activity 1 Learner PEP Components of fitness – Flip CoF https://www.youtube.com/watch?v=gGAhYokmoDc&list=PLUb-9-TpmYV8g_fw21EFEIjXtg98Gq4VS&index=1&t=3s

	Fitness tests – theory and practice	Theory: the value of fitness testing; the purpose of specific fitness tests; the selection of the appropriate fitness test for components of fitness; and the rationale for selection Practical: the test protocol Fitness testing: cardiovascular fitness – Cooper 12 minute tests (run, swim), Harvard	Pupils to think back to fitness testing that they have completed during core PE. Should be able to recall 5 fitness test and apply the correct component of fitness	Mix of theory and practical sessions Physical Training Topic Guide, activity 1 and 2 Physical Training Topic Guide, activity 3 Physical Training Topic Guide, activity 4 Learner PEP

		Step Test; strength – grip dynamometer; muscular endurance – one-minute sit-up, one-minute press-up; speed – 30m sprint; power – vertical jump; flexibility – sit and reach Collection and interpretation of data from fitness test results Theory: analysis and evaluation of fitness test results against normative data tables		
	Principles of training	Individual needs, specificity, progressive overload, FITT (frequency, intensity, time, type), overtraining, reversibility, thresholds of training (aerobic target zone: 60–80% and anaerobic target zone: 80%–90%, calculated using Karvonen formula)	Pupils should know the majority of these from CORE PE- using mnemonic SPORI. Provide pupils with example training programme and allow them to find the example before completing	Description cards (of principles) Training zone cards – link training zones for different aged performers to be matched to correct intensity of sport GCSE Bitesize – Principles of training https://www.bbc.co.uk/bitesize/guides/zxhxnbk/revision/1 Kerboodle textbook – pgs 75- 82 White revision guide - Learner PEP
	Applying the principles to a PEP	Discussion of personal goals for PEP and how to achieve these through application of principles	Pupils should know definitions and recall applying SPORI during core PE. Links to body	Learner PEP

			system from long term effects of training (hypertrophy, increase strength and endurance, cardiac hypertrophy with links to CO, HR and CV. Increase alveoli and strength of diaphragm.	

	Methods of training for specific components of fitness, physical activity and sport	Continuous, Fartlek, circuit, interval, plyometrics, weight/resistance. Fitness classes for specific components of fitness, physical activity and sport (body pump, aerobics, pilates, yoga, spinning) The advantages and disadvantages of different training methods	Recall task prior of different athletes and how they might train to improve performance / links back to principles of training and make the connection of specificity to the correct component of fitness. Pupils will have limited knowledge of the advantages and disadvantages – Provide a definition of advantage and disadvantage and	Matching cards: matching description cards to correct image of different fitness classes/methods of training Matching cards: matching sporting activities to methods of training Learner PEP Methods of Training – Flip task – https://www.youtube.com/watch?v=93_xAFpG2jk GCSE Bitesize – Methods of Training - https://www.bbc.co.uk/bitesize/guides/zyqd2p3/revision/1 Kerboodle textbook – pgs 83 -89 White revision guide -

			make the link to A03	
	Applying the methods of training to a PEP	Factors to consider when deciding the most appropriate training methods and training intensities for different physical activities and sports (fitness/sport requirements, facilities available, current level of fitness)	Pupils should be able to recall the 7 methods of training and provide an example of what sports performer would use each method.	Physical Training Topic Guide, activity 5 Learner PEP
	Long term training effects on the musculo-skeletal system	Review musculo-skeletal system Benefits to the musculo-skeletal system: increased bone density; increased strength of ligaments and tendons; muscle hypertrophy; the importance of rest for adaptations to take place; and time to recover before the next training session Impact on performance in different types of activities		Physical Training Topic Guide, activity 6

	Long term training effects on the cardio-respiratory system	Review cardio-respiratory system Benefits to the cardio-respiratory system: decreased resting heart rate; faster recovery; increased resting stroke volume and maximum cardiac output; increased size/strength of heart; increased capilliarisation; increase in number of red blood cells; drop in resting blood pressure due to more elastic muscular wall of veins and arteries; increased lung capacity/volume and vital capacity; increased number of alveoli; increased strength of diaphragm; and external intercostal muscles Impact on performance in different types of activities		Physical Training Topic Guide, activity 6 Kerboodle textbook – pgs 90 – 92 White revision guide -
	Identification of injury, treatment and common sports injuries	Concussion, fractures, dislocation, sprain, torn cartilage and soft tissue injury (strain, tennis	Who has been injured before? How did it happen? What was the injury?	First aid scenario cards – guess the injury and how it might have happened

		elbow, golfers elbow, abrasions) RICE (rest, ice, compression, elevation)	Will help pupil's recall prior learning from their own experiences. Health & Safety in sport	GCSE Bitesize – Health and Safety in sport https://www.bbc.co.uk/bitesize/guides/z2r34j6/revision/1 Kerboodle textbook – pgs 94 – 99 White revision guide
	Injury prevention in sport and physical activity	Injury prevention through: correct application of the principles of training to avoid overuse injuries; correct application and adherence to the rules of an activity during play/participation; use of appropriate protective clothing and equipment; checking of equipment and facilities before use, all as applied to a range of physical activities and sports	Links to own practical coaching or delivering of sports sessions. What do coaches, teacher and performers do to limit injuries	Create safety checklist for own activities before play to apply theory Kerboodle textbook – pgs 94-95
	Performance enhancing drugs – types, advantages and disadvantages	Performance-enhancing drugs (PEDs) and their positive and negative effects on sporting performance and performer lifestyle, including anabolic steroids; beta blockers; diuretics; narcotic analgesics; peptide hormones (erythropoietin	Circle map what athletes/sports performers might have heard about performance enhancing drugs. Mnemonic BAD, NHS, PB	Research sports performers – are PEDs still used? GCSE Bitesize – PEDs - https://www.bbc.co.uk/bitesize/guides/z2r34j6/revision/4 Kerboodle textbook – 100-102 PEDs Flip Task – https://www.youtube.com/watch?v=EZMw3XGYjHA&list=PLUb-9-TpmYV9mVI6o_gweutSu-QP75MwX&index=3

		(EPO); growth hormones (GH)); stimulants; blood doping		

Paper 2 Health & Performance

Week	Topic	Content	Prior Learning	Suggested Resources
Topic 5 – Sport Psychology Component 2				
	Goal setting SMART targets and the value of each principle in improving and/or optimising performance	The use of goal setting to improve and/or optimise performance Principles of SMART targets (specific, measureable, achievable, realistic, time-bound) Setting and reviewing targets to improve and/or optimise performance	Students should have had some experience of setting targets through SU4L days, Partnerships days, PLTS, or core PE lessons.	GCSE BITESIZE: https://www.bbc.co.uk/bitesize/topics/zq8dk7h PPTs attached to Y11 GCSE classes via TEAMs Learner goals/personal learning plans Sports Psychology Topic Guide, activity 3 **Kerboodle Textbook** pgs 142-144 **White revision guide –** pg 70/79/116
	Classification of skills using continua	Open–closed, basic (simple)–complex, and low organisation–high	Students will have learnt a range of skills in their PE lessons but will not necessarily know anything about the classification of skills and the 3 continua are.	Sports Psychology Topic Guide, activity 1a Practical session – Sports Psychology Topic Guide, activity 2 **Kerboodle Textbook** pgs 134 – 137

		organisation continua	They will be familiar with what a continuum is.	**White revision guide –** pg 68/78/115
	Forms of practice – theory and practical application	Massed, distributed, fixed and variable	Students will have taken part in a variety of forms of practice through their Core PE/Practical lessons. This will aid them in making their own links to the content.	Practical session to demonstrate different types of practice **Kerboodle Textbook** pgs 138 - 141
	Forms of practice – theory and practical application	Application of knowledge of practice and skill classification to select the most relevant practice to develop a range of skills	Students will know how to classify as skill and what kind of practice would suite for example an open skill. This will allow them to apply the knowledge to a range of skills.	Sports Psychology Topic Guide, activity 1b – skill cards for skill classificati
	Types of guidance – theory and practical application	Visual, verbal, manual and mechanical Advantages and disadvantages of each type of guidance	Students will have encountered all types of guidance; however, they will probably not have realised it. This is not limited to PE lessons but across all subjects' students will have encountered them. This should aid their retention of the info as they will be able to make links relevant to their own learning experience.	Sports Psychology Topic Guide, activity 4 Materials for simple task, e.g. bean bags into a bin **Kerboodle Textbook** pgs 145 – 148 **White revision guide –** pg 72/80/117
	Types of guidance – practical application	Appropriateness of types of guidance in a variety of sporting contexts when used	Now students know the 4 types of guidance and being able to link them to their own experiences it should allow them to think critically	Practical session – Sports Psychology Topic Guide, activity 5 If classroom based – Sports Psychology Topic Guide, activity 7 Sports Psychology Topic Guide, activity 1c

		with performers of different skill levels	about what kind of learner would benefit from which type of guidance.	
	Mental preparation for performance	Warm up, mental rehearsal	Throughout student's school experience they will have had to mentally prepare for a variety of events e.g. exams. So, they will have experience of this. Pupils who play sport will have also done this through their sport but again will maybe not know what they are doing.	YouTube clips of athletes mentally rehearsing movement, e.g. long jump Sports Psychology Topic Guide, activity 8 **Kerboodle Textbook** pgs 152- 153 **White revision guide –** pg 74/81/117
	Types of feedback	intrinsic, extrinsic, concurrent, terminal	Students will be very familiar with what feedback is as they will have had an abundance of it from all subjects. They will however not necessarily know they different types and the +/- of each.	Sports Psychology Topic Guide, activity 6 Sports Psychology Topic Guide, activity 1d **Kerboodle Textbook** pgs 149 – 150 **White revision guide –** pg 72/80/117
	Sports psychology, practicing use of data	Interpretation and analysis of graphical representation of data associated with feedback on performance	Students should have had ample experience of reading data from tables/graphs/charts from a range of subjects.	Data collected from practical sessions, e.g. shots on target for each practice condition or type of guidance Sports Psychology Topic Guide, analysis and evaluation of data section **Kerboodle Textbook** pgs 151