

Greenfields Academy (Secondary) - Long Term Planning – GCSE PE

Academic Year Overview 2020/21 – YEAR 10 11 (Part 1)

Term	Autumn		Spring		Summer	
	1	2	3	4	5	6
TRANSITION FROM..... 	1.1 The structure and functions of the musculoskeletal system	1.1 The structure and functions of the musculoskeletal system	1.2 The structure and functions of the cardiorespiratory system	1.2 The structure and functions of the cardiorespiratory system	Practical elements	1.3 Anaerobic and aerobic exercise
Weekly Sequence	KEY: N – New Learning & Knowledge, KQ – Key Question, WSF – Whole School Focus (e.g. Computing Week, Language Day)					
1	N – To know the functions of the skeleton applied to performance in physical activities and sports: protection of vital organs, muscle	N – Know the role of ligaments and tendons, and their relevance to participation in physical activity and sport.	N – Know the functions of the cardiovascular system applied to performance in physical activities: transport of oxygen, carbon dioxide and nutrients, clotting	N – Understand the meaning and purpose of Vital capacity and tidal volume, and change in tidal volume due to physical activity and sport, and the reasons		N – Develop knowledge and understanding of energy specifically the use of glucose and oxygen to release energy aerobically with the production of

	<p>attachment, joints for movement, platelets, red and white blood cell production, storage of calcium and phosphorus.</p> <p>KQ – Can you identify and explain the 5 main functions of the skeleton?</p>	<p>KQ – What is the role of a ligament? What is the role of a tendon? How and why are ligaments and tendons important during movement and performance?</p>	<p>of open wounds, regulation of body temperature.</p> <p>KQ – what is the function of the cardiovascular system? What is the cardiovascular system made from? How important is this system and why?</p>	<p>that make the change in tidal volume necessary.</p> <p>KQ – Can you identify and explain each term tidal volume and vital capacity? Do you know how tidal volume might change during exercise?</p>	<p>carbon dioxide and water, the impact of insufficient oxygen on energy release, the by-product of anaerobic respiration (lactic acid).</p> <p>KQ – Can you identify the importance of both oxygen and glucose? What are their purposes? How might they be used? How might these change during exercise/activity and what could be an end result?</p>
2	<p>N – Develop knowledge of the classification of bones: long (leverage), short (weight bearing), flat (protection, broad surface for muscle attachment), irregular (protection and muscle attachment) applied to performance in physical activities and sports.</p> <p>KQ – What classifications of bones are there? Can you explain more than one</p>	<p>N – To know the classification and characteristics of muscle types: voluntary muscles of the skeletal system, involuntary muscles in blood vessels, cardiac muscle forming the heart, and their roles when participating in physical activity and sport.</p> <p>KQ – What classification of muscles types are there? Can you identify what differing muscle</p>	<p>N – Know the structure of the cardiovascular system: 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.</p> <p>KQ – Can you explain specific parts to the cardiovascular system</p>	<p>N – Know the location of main components of respiratory system (lungs, bronchi, bronchioles, alveoli, diaphragm) and their role in movement of oxygen and carbon dioxide into and out of the body.</p> <p>KQ – Can you identify and explain where the respiratory system is using correct terminology?</p>	<p>N – Develop knowledge of the energy sources: fats as a fuel source for aerobic activity, carbohydrates as a fuel source for aerobic and anaerobic activity.</p> <p>KQ – Can you identify what food fall under the group's fats and carbohydrates? Can you explain what type of energy source each food is? Can you identify why type of</p>

	<p>type of classification? Can you identify a number of bones and their classification?</p>	<p>type job roles are and how they support the body</p>	<p>with a basic explanation as to what they do?</p>	<p>Can you explain in basic terms what the respiratory functions are?</p>		<p>energy each type of food can provide fuel for?</p>
3	<p>N – Develop knowledge on the structure of the skeleton including, the cranium, clavicle, scapula, five regions of the vertebral column (cervical, thoracic, lumbar, sacrum, coccyx), ribs, sternum, humerus, radius, ulna, carpals, metacarpals, phalanges (in the hand), pelvis, femur, patella, tibia, fibula, tarsals, metatarsals, phalanges (in the foot) KQ – How many bones can you identify? Do you know the location of individual bones?</p>	<p>N – Know the location and role of the voluntary muscular system to work with the skeleton to bring about specific movement during physical activity and sport, and the specific function of each muscle (deltoid, biceps, triceps, pectoralis major, latissimus dorsi, external obliques, hip flexors, gluteus maximus, quadriceps, hamstrings, gastrocnemius and tibialis anterior). KQ – Can you locate voluntary muscle? Can you explain the function of voluntary muscle with links to a sporting performance or movement?</p>	<p>N – Develop knowledge on the structure of arteries, capillaries and veins and how this relates to function and importance during physical activity and sport in terms of blood pressure, oxygenated, deoxygenated blood and changes due to physical exercise. KQ – What are arteries, capillaries and veins? What are these significantly important components of the body? What are their functions? Can you identify the location of arteries, capillaries and veins?</p>	<p>N – To know the structure of alveoli to enable gas exchange and the process of gas exchange to meet the demands of varying intensities of exercise (aerobic and anaerobic). KQ – What are alveoli? Can you identify their location? What is the structure of alveoli? What is their purpose in the process of gases exchanged?</p>		<p>N – Understand the short-term effects of physical activity and sport on lactate accumulation, muscle fatigue, and the relevance of this to the player/performer. KQ – What short term effects may result due to activity? How might fatigue be caused? What is a by-product? What influences will waste/by products have on performance and an individual performing?</p>
4	<p>N – Develop knowledge and be able to link bones with their classification and use applied to performance</p>	<p>N – Be able to identify and understand Antagonistic pairs of muscles (agonist and antagonist) to create</p>	<p>N – Develop knowledge of the mechanisms required (vasoconstriction, vasodilation) and the</p>	<p>N – Know how the cardiovascular and respiratory systems work together to allow</p>		<p>N – Develop understanding of the short-term effects of physical activity and sport on heart rate,</p>

	<p>in physical activities and sports.</p> <p>KQ – Can you observe a performance, select a body part, identify particular bones in that body part along with the classification of those bones?</p>	<p>opposing movement at joints to allow physical activities (e.g. gastrocnemius and tibialis anterior acting at the ankle -plantar flexion to dorsi flexion; 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).</p> <p>KQ – What is meant by and an antagonist pair of muscles? Can you identify more than one pair? Can you locate where an antagonistic pair of muscles can be found and also identify which muscles make up each pair?</p>	<p>need for redistribution of blood flow (vascular shunting) during physical activities compared to when resting.</p> <p>KQ – What is vasodilation and vasoconstriction? How do these mechanisms affect the body during exercise?</p>	<p>participation in physical activity and sport.</p> <p>KQ – What are the functions of the cardiovascular and respiratory systems during activity? How might these systems vary across different individuals? Can these systems develop/be trained to improve?</p>	<p>stroke volume and cardiac output, and the importance of this to the player/performer</p> <p>KQ – How does heart function before, during and after activity? Are there significant changes? If so what are they? Can you identify stroke volume, cardiac output and heart rate?</p>
5	<p>N – Develop knowledge and understanding of classification of joints: pivot (neck – atlas and axis), hinge (elbow, knee and ankle), ball and socket (hip and shoulder), condyloid</p>	<p>N – Develop knowledge of characteristics of fast and slow twitch muscle fibre types (type I, type IIa and type IIx) and how this impacts on their use in physical activities.</p>	<p>N – Understand the function and importance of red and white blood cells, platelets and plasma for physical activity and sport.</p>	<p>N – Time to continue any unfinished work/projects. Consolidate any prior learning. Educate and strengthen any gaps in knowledge.</p>	<p>N – Demonstrate knowledge of short-term effects of physical activity and sport on depth and rate of breathing, and the importance of this to the player/performer.</p>

	<p>(wrist), and their impact on the range of possible movements.</p> <p>KQ – How many different types of joints are there? Can you identify various joints? What do joints do?</p>	<p>KQ – What types of muscle fibres are there? What does each type of muscle fibre types do? Can you explain if ethnicity has an effect of muscle fibre types and how much of each type different ethnics might possess?</p>	<p>KQ – Where are blood cells created? What volume of blood should an average body have/hold? What are the functions of different blood cells in regards to physical activity?</p>		<p>KQ – What impact will physical activity have on breathing? The depth of and the rate of? Can this be developed or improved through training? How?</p>
6	<p>N – Develop knowledge of movement possibilities at joints dependent on joint classification: flexion, extension, adduction, abduction, rotation, circumduction, plantar-flexion, dorsi-flexion and examples of physical activity and sporting skills and techniques that utilize these movements in different sporting contexts.</p> <p>KQ – Can you identify 8 or more types of movement that a joint might allow? Why is this</p>	<p>N – Know how the skeletal and muscular systems work together to allow participation in physical activity and sport.</p> <p>KQ – How does the skeletal and muscular systems work in order to develop movement and function? Can you include previous knowledge within you answer (joints, bones, muscles types, tendons ligaments etc)?</p>	<p>N – Develop knowledge and understanding of composition of inhaled and exhaled air and the impact of physical activity and sport on this composition.</p> <p>KQ – What is the composition of air inhaled and exhaled? What does air consist of? How does the composition of air vary between inhaling and exhaling? Why? What affect does physical activity have on both inhaling and exhaling?</p>	<p>N – Time to continue any unfinished work/projects. Consolidate any prior learning. Educate and strengthen any gaps in knowledge.</p>	<p>N – Know and understand how the respiratory and cardiovascular systems work together to allow participation in, and recovery from, physical activity and sport: oxygen intake into lungs, transfer to blood and transport to muscles, and removal of carbon dioxide.</p> <p>KQ – How do both the respiratory and CV system work together pre, during and post exercise or activity? Can you identify what happens to the entire</p>

	information important to know? Can you observe a performance and recognise what joints are being used and what movements are being demonstrated?					journey of oxygen? How do these systems also work together in order to remove waste/by-products?
7	N – KQ – WSF –	N – KQ – WSF –	N – KQ – WSF –	N – KQ – WSF –	N – KQ – WSF –	N – KQ – WSF –

