

PEFORMANCE STUDIES (GCSE PE)

ANATOMY & PHYSIOLOGY 1 (SKELETAL & MUSCULAR SYSTEMS) SCHEME OF LEARNING OVERVIEW

Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:
<p>In the key stage three science curriculum, students will learn about the skeletal and muscular systems. More specifically, they will develop a fundamental understanding of: the structure and functions of the human skeleton, to include support, protection, movement and making blood cells; biomechanics – the interaction between skeleton and muscles, including the measurement of force exerted by different muscles; the function of muscles and examples of antagonistic muscles. This knowledge will be required for this scheme of learning.</p> <p>Firstly, students will be able to name and locate the major bones of the body and be able to apply examples of how the skeletal system allows the functions such as posture and protection. They will then be able to identify major joints along with the associated articulating bones in the knee, elbow, shoulder and hip. Knowledge will then be developed of the types of movement at hinge joints and ball and socket joints, as well as being able to apply these movements to examples from physical activities and sports. Students will develop their knowledge of the location of the major muscle groups and be able to apply muscle use to examples from physical activities and sport. They will also develop their knowledge of the roles of muscles as agonists, antagonists, fixators and also how they operate as antagonistic pairs, again by applying to examples from physical activities and sports.</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> - know the name and location of the major bones in the human body - understand and be able to apply examples of how the skeleton performs its functions - know the definition of a synovial joint - Know the hinge and shoulder joints along with the articulating bones for each - Know the movement types at hinge and ball and socket joints - Know the roles of ligaments, cartilage and tendons - know the name and location of the major muscle groups in the human body and be able to apply their use to examples from physical activity/sport - know the definitions and roles of agonist, antagonist and fixator muscles and be able to apply them to examples from physical activity/sport - Know the key antagonistic pairs in the body 	<p>Tier 2 & Tier 3 vocabulary explicitly taught:</p> <ul style="list-style-type: none"> • <i>Abduction - Movement away from the midline of the body.</i> • <i>Adduction - Movement towards the midline of the body.</i> • <i>Agonist - The muscle that works to create the movement.</i> • <i>Antagonist - The muscle that works in the opposite way of the agonist.</i> • <i>Articulating bones - Bones that move relative to each other at a joint.</i> • <i>Cartilage - A tough, elastic, fibrous connective tissue.</i> • <i>Circumduction - The circular movement of a joint. It is a movement pattern that combines flexion, extension, adduction, abduction and rotation.</i> • <i>Extension - A straightening movement around a joint.</i> • <i>Fixator - A muscle which acts as the stabilizer and helps the agonist work effectively of one part of the body during movement of another part.</i> • <i>Flexion - A bending movement around a joint in a limb</i> • <i>Ligament - A short band of tough and flexible tissue connecting bones together and stabilise the joint.</i> • <i>Rotation - The turning of a body part about its long axis as if on a pivot.</i> • <i>Synovial joint - An area where two or more bones meet within a joint capsule and allows a wide range</i>

<p>Teaching the content in this order enables students to develop their understanding of how the muscles and bones work together to create movement in a sport and physical activity setting. Students will go on to apply this understanding in the examination paper 1 and also in the analysing and evaluating performance coursework task.</p>		<p><i>of movement to occur.</i></p> <ul style="list-style-type: none"> • <i>Tendon - A tendon is a tough yet flexible band of fibrous tissue which joins muscle to bone.</i>
<p>Challenge and Support:</p> <p>This scheme of learning is ambitious for all students. Throughout each lesson the Emerging, Developing, Secure and Mastered criteria is aimed at the highest achievers to score level 9 grades at GCSE PE theory. Throughout the course, students are required to apply their understanding to sporting contexts and in each lesson, the Mastered task is application of knowledge to a sporting scenario and/or exam questions.</p> <p>Lessons contain regular and quick extension tasks to challenge more able students whilst students who may require support to access learning are provided with sentence starters and key words, which keeps motivation high.</p> <p>Throughout the lessons, the content is covered and assessed at a low stakes level through mini whiteboards and mass question/answer sessions whereby every student is required to answer. Tasks are short and concise to hold students attention and allows the teacher to ascertain knowledge and understanding. This supports students who may become overwhelmed with longer drawn out tasks, whilst more able students are supplemented with extension tasks.</p>	<p>Worldwide learning/ links to 21st century:</p> <p>This scheme of learning enables students to understand how movement occurs in the body. Movement is not only fundamental for sport, but in everyday life the complex ways in which our bones and muscles work together to create movement is often taken for granted. Students will develop an appreciation for the way in which our amazing bodies enable us to partake in so many different activities.</p>	<p>Cultural capital/ Industry/ Enrichment:</p> <p>Students moving into any sporting setting will need to have an understanding of the bones, muscles and movement. This knowledge is vital for the fields of physiotherapy, sports coaching, health professionals and also playing sport.</p> <p>When learning the bones and muscles, students will develop the ability to work with others when labelling each other's bones. This ability to work together is vital in the world of employment.</p> <p>When partaking in practical lessons or school sports teams, students will be able to identify potential injuries to muscles or joints and also consider the importance of looking after their bodies for performance at their highest level.</p>

Historical, Social, Moral, Spiritual, Cultural context:	Cross curricular links/literacy/numeracy:	Common misconceptions:
<p>Students will understand the different injuries that can take place through sport when athletes are pushing their bodies to the maximum. This will enable them to take a moral view on their practice in a sporting setting and appreciate the importance of sufficient warm-ups and cool-downs. This will help to address the culture of young athletes neglecting their muscles through not completing these.</p>	<p>Students should have a basic understanding of muscles and bones from key stage three science. There are many links with biology in this unit of learning due to the focus on the components of the human body.</p> <p>Students will regularly be asked to read aloud and share their ideas and thoughts in group discussions. In addition, students will complete extended writing pieces of work to apply their understanding to a sporting setting.</p>	<p>Common misconceptions which are addressed straight away are:</p> <ul style="list-style-type: none"> The word flexion is replaced with 'bend' when talking about movements at a hinge joint The word contract is often replaced with 'flex' when discussing muscles Students often think a joint is a mechanism but it is simply two bones meeting Careful explanations are required for the movement types at joints as these can often be misconceived. Incorrect terminology for names of bones (e.g. skull instead of cranium)
Assessment timeline:		
<p>For formative assessment purposes, every lesson is structured using Emerging, Developing, Secure and Mastered criteria. These guide the lesson content that gets progressively harder throughout the lesson. After each, a progress check takes place on mini whiteboards. This enables the teacher to ascertain learning and intervene if required for individuals or the class.</p>		
<p>When setting tasks in lessons, the resources include WAGOLLS to assist students in structuring their work. These WAGOLLS include sentence starters and key words.</p>		
<p>At the end of the scheme of learning, students will complete a revision lesson. This will be all whiteboard work covering the content of the scheme through questioning and answering. Students will complete a self-assessment sheet throughout the lesson to note down topic areas they need to develop before the end of unit assessment.</p>		
<p>The final lesson of the unit will see students completing an end of unit assessment. The assessment will consist of exam style questions of various lengths and will last for 1 hour. The scores from this assessment is used to inform tracking alongside the practical data from students' performances in their three sports.</p>		
<p>For students that significantly perform below their ALPs target grade, the teacher will complete a small number of coaching sessions before a re-test is completed to ensure that students do not fall behind in any topics.</p>		



Home learning

Lesson 1 – Students will revise for a low stakes test on the names of bones which will take place at the start of the next lesson

Lesson 3 – Students will revise for a low stakes test on the names of muscles which will take place at the start of the next lesson

Lesson 6 – Students will revise thoroughly for their end of unit assessment

Feedback

Lessons 2, 3 and 4 contain a detailed written ‘apply it’ task. The teacher will mark this piece of work and give next steps if understanding is not correct. For correct responses praise or an extension task may be given.

Students will complete an end of unit assessment for the final lesson of the scheme. The assessment will consist of exam style questions of various lengths and will last for 1 hour. The teacher will give a percentage score and level (based on the previous exam cohort national averages) along with highly specific and individualised feedback for each child. This will contain next steps for students to act upon and address either knowledge or exam technique.

Length of unit (duration indicated in hours)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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Unit:

Note – Above is in hours as some lessons are two hours long. There 4 x 1hour and 2 x 2 hour lessons in this scheme of learning