



The Sutton Academy

Knowledge Rich Curriculum Plan

BTEC Extended Certificate in Sport - Unit 1

Learning Aim A: The effects of exercise and sports performance on the skeletal system

Lesson/Learning Sequence	Intended Knowledge: <i>Students will know that...</i>	Tiered Vocabulary	Prior Knowledge: <i>In order to know this students, need to already know that...</i>	Assessment
Lesson 1: Structure of skeletal system	- Students will know that the skeletal system is made up of bones, cartilage and joints - Students will know the names of the major bones in the body and the location of these - Students will know that bones form part of either the axial or appendicular skeleton and identify which bones would relate to each area - Students will know that axial means the main core or axis of your skeleton. and appendicular means the bones that are attached to the axial skeleton - Students will know that framework means an essential supporting structure	Axial Appendicular Framework	Students need to already know that our internal frame is made up of bones	
Lesson 2: Types of bone and functions of the skeleton	- Students will know that there are 5 types of bone in the body - Students will know that these bones have different functions depending on their shape and size - Students will know that a function means a specific role or job that is completed. - Students will know how to relate the different functions of the skeleton and the different types of bones to physical activity - Students will know that cancellous bone means light and absorbent bone material that has a honeycomb or spongy appearance.	Function Cancellous	- Students need to already know the names of different bones in the body - Students will already need to know that bones are different shapes and sizes	
Lesson 3: Vertebrae and postural deviations	- Students will know that vertebrae are series of small bones forming the spine - Students will know that the five sections of the vertebrae are: Cervical, thoracic, lumbar, Sacral and coccygeal - Students will know that the main functions of the spine are to protect the spinal cord, support the rib cage, offer attachment for muscles and support our body weight - Students will know that intervertebral discs are the cartilage discs that are between each vertebrae and act as shock absorbers - Students will that the different postural deviations are kyphosis and scoliosis - Students will know that Kyphosis is the excessive outward curve of the spine and Scoliosis is the abnormal curve of the spine to the left or right	Cervical, Thoracic Lumbar Sacral Coccygeal Support Protect Intervertebral Cartilage Kyphosis Scoliosis Abnormal Posture Deviation	- Students need to already know that there are different types of bones and the spine is an irregular bone - Students will need to already know the main functions of bones	

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	- Students will know that deviation means being different to what is normal - Students will know that posture means the position in which someone holds their body when standing or sitting - Students will know how these deviations affect sports performance.			
Lesson 4: Process of bone growth	- Students will know that calcium is a mineral that is essential for bone growth - Students will know that bones are constantly being reshaped through a process of remodelling - Students will know that remodelling means to change the shape or structure of something - Students will know how osteoclasts and osteoblasts are involved in the process of bone growth - Students will know that the process of bone growth is called ossification - Students will know that each end of long bones contain a growing area, known as epiphyseal plates, which allow bones to grow longer.	Calcium Remodelling Osteoblasts Ossification Epiphyseal Plates Osteoclasts	- Students need to already know that as you grow bones increase in size - Students need to already know that calcium can be found in foods such as milk, cheese and yoghurt	
Lesson 5 - SSS Feedback lesson				
Lesson 6 - Knowledge test and extended response				
Lesson 7: Classification of joints	- Students will know that joints are where two or more bones meet. This is called articulation - Student will know that there are three classifications of joints in the body: - Fixed - Slightly moveable - Synovial - Students will know the structure of a synovial joint and the functions of the key structures within it - Students will know that a structure means how key feature are arranged and interact with each other - Students will know that function means to work in a particular way - Students will know how to relate the functions of the structures to sports performance	Articulation Structure	Students need to already know the where our main joints are for example knee, hip, shoulder and elbow	

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Lesson 8: Types of synovial joint	- Students will know that there are 6 types of synovial joint in the body - Students will know that synovial means freely moveable - Students will know that each of the synovial joints permits a specific set of movements - Students will know different sporting examples of how each joint is used in physical activity	Synovial	- Students need to already know that joints allow are body to move - Students need to already know that synovial joints allow the greatest range of movement	
Lesson 9: Application - practice exam questions				
Lesson 10: Types of movement - flexion and extension	- Students will know that the type of movement that each synovial joint allows is determined by its structure and shape - Students will know that sporting techniques use a combination of different joints to create a wide range of movement - Students will know that flexion means decrease in the angle around a joint (bending) and extension means an increase in the angle around a joint (straightening) - Students will know that hyper extension is arching your back - Students will know that plantar flexion is Pointing the toes downward - Students will know that dorsiflexion is lifting the foot up towards the leg - Students will know that lateral flexion is the movement of bending sideways - Students will know examples of when flexion and extension would occur in sport and the specific joints that these movements occur at	Flexion Extension	Students need to already know that our joints allow us to perform different sporting movements	
Lesson 11: Types of movement - Abduction and adduction	- Students will know adduction is movement towards the midline of the body and abduction is movement away from the midline of the body - Students will know that midline means the central point in the body - Students will know that horizontal abduction and adduction is movement across the body. - Students will know examples of when abduction and adduction would occur in sport and the specific joints that these movements occur at	Adduction Abduction	Students need to already know that the type of movement that each synovial joint allows is determined by its structure and shape	

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Lesson 12: Types of movement - circumduction and rotation	- Students will know circumduction is the circular (conical) movement of a joint. - and rotation is the turning of a body part about its long axis as if on a pivot. - Students will know conical means the shape of a cone - Students will know examples of when circumduction and rotation would occur in sport and the specific joints that these movements occur at	Circumduction Rotation Conical Dorsiflexion Hyperextension Lateral flexion	Students need to already know that ball and socket joints have the greatest range of movement	
Lesson 13: Additional factors affecting the skeletal system	- Students will know that regular exercise can help common skeletal diseases such as arthritis and osteoporosis - Students will know that disease means a disorder of structure or function in a human that produces specific symptoms - Students will know that arthritis is a condition where there is an inflammation within a synovial joint, causing pain and stiffness - Students will know that inflammation means a physical condition in which part of the body becomes reddened, swollen, hot, and often painful, especially as a reaction to injury or infection. - Students will know that osteoporosis is the weakening of bones caused by a loss in calcium or a lack of vitamin D - Student will know how age can affect the skeletal system, particularly the impact of weight training. - Students will know the reasons for these diseases and how they can impact performance	Arthritis Osteoporosis Disease Inflammation	- Students need to already know that as you grow older your bones develop - Students need to already know how bones develop through the process of ossification	