KESTEVEN AND SLEAFORD HIGH SCHOOL

Physical Education Scheme of Learning
Year 10 GCSE – Term 1

Intent – Rationale

Students will develop their understanding of body systems and how these are used during exercise. They will be able to identify key parts of the body used in movement and apply this knowledge to sporting examples.

Sequencing – what prior learning does this topic build upon?	Sequencing – what subsequent learning does this topic feed into?
Key stage 3 practical lessons	• Movement analysis (term 3) • Written NEA (term 6 and term 1 year 11)
What are the links with other subjects in the curriculum?	**What are the links to SMSC, British Values and Careers?**
• Biology – body systems	• Use the coded help guides to complete this section
What are the opportunities for developing literacy skills and developing learner confidence and enjoyment in reading?	**What are the opportunities for developing mathematical skills?**
• Please fill this in with your own suggestions alternatively the LRC team will provide some suggested titles/links	•

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Physical Education Scheme of Learning
Year 10 – Term 1

Intent – Concepts

What knowledge will students gain and what skills will they develop as a consequence of this topic?	
Know Students will know names of bones, muscles, components of a joint. Joint names, movements that occur at those joints, how muscles and bones work together. They will know the passage of air into the body and the gases involved in gaseous exchange. They will know the structure of blood vessels and the structure of the heart **Apply** Students will be able to explain the functions of the body systems and their components. They will apply their knowledge of body parts to specific movements. They will be able to give sporting actions as examples of muscles and bones working together. They will be able to explain how air is inhaled and exhaled, and explain how gas is exchanged between the lungs and the blood. They will be able to label the pathway of blood using their understanding of the structure of the heart. **Extend** Students will be able to give sporting examples and the effects of movement on the body systems. They will be able to use their terminology to extend their written answers. They will be able to analyse the effects of exercise on the intake of Oxygen and explain the impact this has on gaseous exchange. Evaluate the effect of exercise on blood; it's flow and pressure. Apply this understanding to exercise examples.	
What subject specific language will be used and developed in this topic?	**What opportunities are available for assessing the progress of students?**

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• Articulating bones
  ○ Where two or more bones meet to allow movement at a joint.
• Backflow
  ○ The flowing backwards of blood. Valves in the veins prevent this from happening.
• Blood pressure
  ○ The pressure that blood is under. Types of pressure: • systolic - when the heart is contracting • diastolic - when the heart is relaxed.
• Cardiac cycle
  ○ The process of the heart going through the stages of systole and diastole (see Blood pressure) in the atria and ventricles (see Heart chambers). Cardiac output The amount of blood ejected from the heart in one minute or stroke volume x heart rate.
• Embolism
  ○ Blockage of a blood vessel.
• Expire
  ○ Breathe out.
• Haemoglobin
  ○ The substance in the red blood cells which transports oxygen (as oxyhaemoglobin) and carbon dioxide.
• Heart chambers
  ○ They include the right and left atria and ventricles. Heartrate The number of times the heart beats (usually measured per minute).
• Hypertension
  ○ High blood pressure in the arteries. Hypertrophy The enlargement of an organ or tissue from the increase in the size of its cells.
• Inspire
  ○ Breathe in.
	• EOTT to take place with examination questions at the end of Cardio respiratory topic.
	• Recall activities throughout topic used as low stakes assessment to show development of understanding

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• Movement at a joint
  ○ Classified into: • flexion – decrease in the angle of the bones at a joint • extension – increasing the angle of bones at a joint • abduction – movement away from the midline of the body • adduction – movement towards the midline of the body • rotation – movement around an axis • plantar flexion – pointing the toes at the ankle/increasing the ankle angle • dorsi flexion – toes up at the ankle/decreasing the ankle angle • circumduction – turning or circular motion around a joint (which occurs in more than one plane).
• Stroke volume
  ○ The volume of blood pumped out of the heart by each ventricle during one contraction.
• Synovial joint
  ○ An area of the body where two or more bones meet (articulate) to allow a range of movements. The ends of the bones are covered in articular cartilage and are enclosed in a capsule filled with fluid. For the purposes of this specification, the following structural features and roles should be known: • synovial membrane – secretes synovial fluid • synovial fluid – provides lubrication • joint capsule – encloses/supports • bursae (sacks of fluid) – reduce friction • cartilage – prevents friction/bones rubbing together • ligaments – attach bone to bone.
• Viscosity
  ○ Thickening of the blood.	

Intent – Concepts

Lesson title	Learning challenge	Higher level challenge	Suggested activities and resources

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Functions of the skeleton and Bones	Know the functions of the skeletal system. Be able to label the skeleton.	Analyse the role of a flat bone and give sporting examples of this.	
Bones and Structure of the skeleton	Know the classification of bones. Apply knowledge to understand what bones go into each classification	Analyse different types of bones and be able to explain how they work in the body	
Joints and Structure of a synovial joint	Know the components that make up a joint. Be able explain the function of these components	Analyse how bones meet to form joints and the role this plays in movement.	
Muscles of the body	Know the muscles in the body. Describe which main muscles work in pairs	Analyse how muscles make our bones move and give examples of this.	
Types of joint and types of movement	Know the types of movement at a joint Explain the types of movement at a joint	Analyse how the skeletal and muscular system work together to produce movement at a joint and give sporting examples.	
Muscles and bones working together	Know which muscle and bone groups work together at joints	Analyse the effect of muscles moving in sporting situations	
Recap Musculoskeletal system	Reinforce knowledge of key terminology and components of the body systems	Be able to apply understanding to AO2 and AO3 questions, using sporting	

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		examples to support explanations	
EOTT	Develop understanding of different command words and know the expected content required	Use understanding to demonstrate knowledge in a variety of examination questions with differing command words	
Pathway of air	Know the passage of air to the lungs Explain the role of the body systems during breathing.	Evaluate the differences between breathing at rest and during exercise	
Gaseous Exchange	Know the terminology used in gaseous exchange Understand gas exchange process	Explain what oxygen debt is and how it occurs Apply knowledge to different sports	
Blood vessels	Know the structure of the blood vessels	Explain the functions of the different blood vessels. Apply your understanding effectively to exam questions	
Structure of the heart	Know the structure of the heart and be able to label the pathway of blood effectively	Evaluate the effect of exercise on blood; it's flow and pressure. Apply this understanding to exercise examples.	